

Alberta Economic Multipliers

2013

Alberta 

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PREFACE

This publication presents economic multipliers and supply ratios for the Alberta economy calculated using the 2013 Alberta Treasury Board and Finance Input-Output (I/O) model. Information is provided for both the Open (direct and indirect impacts) and Closed (direct, indirect and induced impacts) forms of the model. Economic impacts are presented for the Alberta economy only.

The tables used in this publication are derived from the 2013 inter-provincial I/O tables released by Statistics Canada in November 2016.

Custom Impact Analysis

In addition to this publication, Alberta Treasury Board and Finance maintains a highly disaggregated I/O model at the detailed confidential level, which covers 236 industries and 488 commodities. The model may be used to simulate directly both Open and Closed impacts, where additional precision or more detailed output is required than is presented in this publication. To make the model more descriptive of changing economic conditions, the commodity structure can also be customized to client specifications.

The I/O model has a tax module that provides impacts on federal, provincial and local tax revenues, as well as the number of jobs required for any given impact.

Inquiries concerning this publication or requests for simulations using the 2013 Alberta Input-Output model should be directed to:

Micah Brown (micah.brown@gov.ab.ca)

Manager, Economic Statistics
Office of Statistics and Information
Economics and Fiscal Policy
Alberta Treasury Board and Finance
8th Floor
9820-107 Street Northwest
Edmonton, Alberta
Canada T5K 1E7
Phone: (780) 427-8840
FAX: (780) 426-3951

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INTRODUCTION

Measuring Production in the Economy

The most common measure of production in the economy is Gross Domestic Product (GDP). GDP captures the value of goods and services produced for final domestic consumption, export or investment. In other words, it covers only the final, unduplicated output. For example, the value of a good or service sold by Industry A to Industry B, which in turn is used in Industry B's production process for sale into final demand, is not directly recorded in GDP. Industry A's output is not counted directly because it is implicitly included in the value of output of Industry B when it is sold into final demand. Including Industry's A output would result in double-counting of its contribution to the overall economy. To avoid this problem, in calculating GDP, goods or services are valued only at the point where they are sold into final domestic demand (i.e., to households for consumption; to business for investment; or to government for current or capital expenditure) or when they are exported.

An inherent limitation of the GDP is that it does not capture goods and services consumed during the production process (i.e. intermediate inputs). While the GDP method ensures there is no duplication, useful information concerning the flow of goods and services among the various industries and consuming sectors in an economy is not revealed.

To better reflect the flow of goods and services in the economy, it is necessary to use another valuation method called total output. Total output captures the value of goods and services for final consumption or export, plus those that are consumed during the production process (referred to as intermediate inputs). These aspects are the focus of Input-Output (I/O) analysis.

The System of National Accounts

The System of National Accounts (SNA) developed by Statistics Canada, provides the tools to analyze production from both a value-added GDP and I/O perspective, enabling the measurement of the value of goods and services in the economy, including the flow of commodities to final demand sectors; the cost of primary inputs to industries; and the value added by industries.

The SNA recently underwent a historical revision, which entails the incorporation of conceptual, classification, presentational and major statistical changes. As a result, the lists of industries and commodities presented in this publication will differ from those in editions prior to the 2009 economic multipliers.

There are four key statistical components of the SNA:

- ◆ I/O tables, which summarize the total output of commodities by industry and the use of commodities by industries. They reflect the flow of commodities between industries and to final demand sectors; the value added by industry; and the cost of primary inputs to industries. In this way, the I/O tables describe the activity of production in the economy.
- ◆ Income and expenditure accounts, which focus on income generated by productive activity and final expenditure on that production. It is from these tables that the common measure of GDP is calculated. Estimates of Alberta GDP can be found in the income and expenditure accounts of the Alberta Economic Accounts.
- ◆ Financial flow and national balance sheet accounts, which focus on capturing transactions in assets and liabilities for a number of institutional sectors. The financial flows accounts reveal the financing of economic activity.
- ◆ Balance of payments and international investment position, which are devoted entirely to transactions with non-residents or the rest of the world in the economy.

For more detailed discussion on the SNA, please go to the Statistics Canada website, System of National Economic Accounts www.statcan.gc.ca/nea-cen/index-eng.htm.

THE INPUT-OUTPUT MODEL

What are I/O Models?

Input-Output (I/O) models use the information from I/O tables to capture the interdependence of industries and reflect the flow of goods and services through the economy. The main purpose of I/O models is for impact analysis, measuring how changes in industry output or final demand of commodities impact the economy in terms of total output, GDP, employment, labour income and government revenue.

I/O analysis has its foundations in the analytical framework developed by Wassily Leontief in the late 1930s. In its most basic form, an I/O model consists of a system of linear equations that represent how various industries' commodities are distributed throughout the economy. The models are based on tables that describe the flow of commodities through the economy from producers in one industry to another industry, and to final demand. The table 1 represents a simplified I/O framework:

Table 1: Simplified I/O Accounting Framework

	Industries	Net Final Demand	Total Output
Industries	F	Y	X
Value added (Primary Inputs)	V		
Total Input	X		

Source: UN Handbook of Input-Output Table Compilation and Analysis, 1999

In practice, I/O models have been developed to incorporate the effects of inter-regional trade flows, employment, taxes and other variables.

The table shows the flow of commodities from the supplying sectors to the consuming sectors, including other industries and final demand entities. The industries on the columns of matrix F are consuming sectors, while the industries on the rows of F are supplying sectors. Total input is the sum of the inputs supplied by industries (columns of F) and any value added (other non-industrial inputs to production like labour, profit, indirect taxes and depreciation of capital). Total output is the sum of output consumed by industries in the production process (represented in rows of F), plus net final demand. In summary, the total value of output in the economy equals the sum of its inputs (Total Input X = Total Output X).

From this table, a system of fixed-coefficient linear production functions can be developed that represent

the proportion of commodities being supplied and consumed by each industry. These coefficients are the backbone of I/O analysis because they represent how changes in input or output will impact the entire economy.

I/O Impacts and Model Closure

The impacts derived from I/O models can be separated into direct, indirect, and induced impacts:

- ◆ Direct impacts are those first-level impacts resulting from a shock or change in demand, to either industry output or final demand. They refer to the direct impact on those industries that must respond to satisfy the change in demand for commodities.
- ◆ Indirect impacts are secondary, and are generated from the linkages between industries. They refer to the impacts on industries that supply intermediate inputs to the industries directly impacted by the shock.
- ◆ Induced impacts capture the income effect of the shock. They measure the impact of additional consumption from spending the wages generated by the shock. For example, when there is an increase in final demand, industries have to increase production. They hire additional people, who receive wages. It is assumed that these households, after withdrawing a portion of their income for savings and taxes, spend the rest of their income on consumer goods and services. This creates an additional multiplier effect on the economy.

Calculating GDP

The three methods for calculating GDP can be applied using the I/O framework above.

1. The value-added approach, which is the sum of value added for all industries (subtracting purchases from other businesses from the total value of output);
2. The income approach, which adds up all the factor incomes generated in the production process (for example, labour and profits);
3. The final expenditure approach, which is the sum of all sales to end users, including exports net of imports.

Open vs. Closed

The impact of spending by final demand categories can be considered external to an I/O model because decisions about spending come from factors outside the model, such as availability, personal preference, etc. This means that the final demand by these entities is taken as a given, and is unrelated to the level of production by industries in the model. In this type of model, which is referred to as an “Open” I/O model, direct and indirect impacts are measured, while induced impacts are not measured.

In reality, there is a link between households and the production process through labour and wages, represented by induced impacts. In this case, the household sector is endogenous to the model and treated as a production sector. The input of the household sector is consumer expenditure on goods and services, while output is labour income (consisting of wages and salaries, supplementary labour income and labour income of unincorporated sector). An I/O model which makes households endogenous is referred to as a “Closed” model. I/O models can also be “closed” to other factors such as government sales and purchases, but closure to households is the most common. In this type of model, all three impacts are measured (i.e., direct, indirect and induced).

Closing an I/O model to households increases the interdependence of the system and results in a higher impact on the variables of the model, leading to multipliers of a larger magnitude than those based on the Open version. The Closed model has been criticized because it introduces a bias in favor of those economic projects with a higher labour content. For example, consider where two projects have identical purchased inputs and the same level of direct GDP, but one project has a higher proportion of labour income and the other a higher proportion of operating surplus (e.g., corporation profits). In this situation, the Closed model will estimate a larger economic impact for the project with the higher proportion of labour income (other things being equal). This result occurs because the model has been “closed” to household spending but not to profits, and the induced impacts estimated by the model are related to the level of household income rather than profits. Care should be exercised when interpreting Closed model results.

Limitations of I/O Models

I/O analysis is based on various assumptions about the economy and the linkages among industries and commodities. While I/O models are very useful tools in the decision-making process, users should be aware of the caveats and limitations when applying them:

- ◆ The relationship between industry inputs and outputs is linear and fixed, meaning that a change in demand for a commodity or for the outputs of any industry will result in a proportional change in production. The model cannot account for economies/diseconomies of scale or structural changes in production technologies, an assumption which does not necessarily hold in the actual economy.
- ◆ Prices are fixed in the model.
- ◆ I/O models reflect industry averages for technology use and average input costs. For these and other reasons, an I/O model will not provide a totally complete or absolute measure of the impact of economic change.
- ◆ I/O models are static and do not take into account the amount of time required for changes to happen.
- ◆ There are no capacity constraints, and all industries are operating at capacity. This implies that an increase in output results in an increase in demand for labour (rather than simply re-deploying existing labour). It also implies that displacement will not occur in existing industries, as new projects are completed.

The structure and limitations of I/O models lend themselves to measuring the impacts of short term projects; generally, they are used to look at shocks to the economy. For longer-term time series analysis, the use of general equilibrium models are more appropriate.

The Alberta I/O Model

Alberta Treasury Board and Finance has developed an I/O model for the Alberta economy based on the structure of Statistics Canada's inter-provincial model. Although the Alberta model accounts for the interaction of imports and exports on the Alberta economy (both inter-provincial and international), the Alberta model provides impacts for Alberta only. The model has the capacity to run impact analysis on industry expenditures, output and changes in final demand.

The key inputs to the model are the Alberta I/O tables, produced annually by Statistics Canada through the SNA. The I/O tables consist of the output, use and final demand matrices. The output matrix is a table that shows the value of goods and services produced by each industry; the use matrix shows the makeup of the inputs needed for each industry to produce its output; and the final demand matrix shows the final consumption of goods and services. Using these tables, it is possible to produce a system similar to the one outlined in Table 1.

Provincial I/O tables are available publicly at the "Summary" level of aggregation, while national I/O tables are available at the "Detailed" aggregation level. I/O tables at the "Detailed Confidential" level

of aggregation are provided to provinces exclusively through data-sharing agreements. This level provides the most granular data available, covering 236 industries, 488 commodities and 278 final demand categories. The Alberta I/O model is based on "Detailed Confidential" level data, but analysis can be done at the "Summary" aggregation level, as well as two intermediate aggregation levels, "Link 1961" and "Link 1997".

The Alberta model has a tax module that provides impacts on federal, provincial and local tax revenues. The model also estimates the number of jobs required for any given impact. There is also the ability to do customized runs for different tax and wage scenarios.

A "Safety Net" feature was added to the model in 2011. This enables the assumption that a certain number of jobs required for a change in output of a project will come from people who are receiving employment insurance. When this new feature is activated, the induced impacts resulting from a project will be lower. This means that the amount of additional income earned will be lower than if those employees had not been receiving employment insurance benefits. This publication includes both Closed model results without a "Safety Net" and Closed model values with this feature activated.

ALBERTA ECONOMIC MULTIPLIERS

The most common application of I/O models are the economic multipliers, which are generated by the I/O model for industries and commodities. Economic multipliers capture the impact of shocks to the economy on output, labour income, employment and GDP. They enable users to do impact analysis without getting into the detailed analysis associated with the I/O models.

Limitations of I/O Multipliers

Economic multipliers are subject to the same caveats and limitations as the I/O models. This includes the caveats associated with fixed prices, production technology and capacity. In addition, there are several other things to keep in mind when using multipliers:

- ◆ Multipliers are specific to regions and economies. The multipliers in this publication are for the Alberta economy, and thus cannot be used to estimate impacts for other jurisdictions.
- ◆ The size and interpretation of a multiplier depend on how it is defined. There are multipliers that measure the impact on gross output, while others measure GDP, which is often more desirable because GDP multipliers eliminate the double-counting of expenditures (or benefits). It is important to carefully consider which multiplier is appropriate for a project.
- ◆ Impacts reflect the structure of the economy and industry linkages at a point in time, i.e., 2013. If these linkages have changed, the calculation of the impacts in another year (e.g., 2017) will be less valid. Generally, the more removed the year of analysis from the year of the multipliers, the greater the limitations.
- ◆ Since I/O models are static, the multipliers do not give any indication about the time it takes for changes to happen.

Alberta Multiplier Structure

Open and Closed Multipliers

There are two main kinds of multipliers presented in this publication: Open and Closed. Open multipliers reflect only direct and indirect effects, whereas Closed multipliers account for induced impacts in addition to direct and indirect effects. This approach allows users to use both versions for the purposes of analysis and to judge for themselves where the inclusion of induced impacts is warranted or advisable.

Simple/Total Multipliers and Type I/II Multipliers

The Open multipliers presented in this publication are expressed in two forms: as Simple multipliers and as Type I multipliers. The Closed version of these multipliers are called Total multipliers and Type II multipliers, respectively. In this publication, Simple / Total multipliers are arranged by industry and by commodity, whereas Type I/II multipliers are arranged by industry only.

Please note that in editions prior to the current publication, Simple/Total multipliers were called “Intensity Ratios”, while Type I/II multipliers were labeled “Industry Multipliers”. The revision of terminology was done in order to be more consistent with the terminology employed by Statistics Canada. However, there was no change in the methodology.

Simple/Total multipliers, whether by industry or by commodity, are calculated by dividing the total economic impact by the change in output. For example, if an industry increases its output by \$5.0 million and this leads to an increase of \$4.0 million in Alberta GDP, the multiplier value would be 0.80 (i.e., 4.0 divided by 5.0).

Type I/II multipliers are calculated by taking the total impact observed for a change in an economic variable and dividing it by the direct change. For example, if 100 jobs directly attributable to an industry (direct employment) correspond to 180 jobs (total employment) in the economy overall, the industry employment multiplier would be 1.8.

Simple/Total multipliers require only information on gross output or expenditure to calculate the suite of economic impacts, whereas Type I/II multipliers have to be applied to the direct change in the economic indicator of interest. Thus, Simple/Total multipliers are most typically utilized since the direct change in revenue or expenditure is known, but not the direct change in other economic indicators.

Basic and Purchaser Prices

Simple/Total multipliers by commodity are presented at both basic and purchaser prices. Data that are measured at basic prices reflect the price received directly by the producer of the commodity. For example, this corresponds to the “farm gate” price in agriculture or the price received directly by a producing establishment in manufacturing.

Data measured at purchaser prices reflects the price paid by the final users of the commodity. This price, in addition to the price received by the producer of the commodity, reflects other costs such as the price of transportation from the producer to the final seller; wholesale and retail mark-ups; and commodity indirect taxes. These other costs, which are added to basic prices to derive purchaser prices, are referred to as margins. The model treats these margins as if they were purchased directly by the purchaser of the final good.

Commodity Supply Ratios

Most commodities consumed in Alberta, either as intermediate inputs or through final demand, are not fully produced in Alberta. Often a portion is imported from other parts of Canada or internationally. Table 13 shows the Alberta Commodity Supply Ratios, summarizing the proportion of the supply that comes from within and outside Alberta for each major commodity group. For instance, 80.5 percent of forestry products and services (code: M11E0) are produced in Alberta, while 18.9 percent come from the rest of Canada and 0.6 percent come from the rest of the world.

Note that the multipliers presented in this publication reflect the impact of output produced in Alberta only. This means that Table 13 should always be applied whenever a commodity is being purchased to remove imports, thereby determining the actual value of Alberta-based output. For example, a purchase of \$1,000,000 of forestry products and services:

- ◆ Alberta output: $\$1,000,000 * 80.5\% = \$805,000$
- ◆ Calculation: $\$805,000 * \text{multiplier} = \text{IMPACT}$

If the analysis revolves around the *production* of a commodity, rather than the purchasing of the commodity, then the application of Table 13 is not necessary.

Application of the Alberta Multipliers

Due to the limitations of the I/O model, it is unlikely that many of the assumptions and caveats associated with the multipliers would hold fully in the real world. It is important to understand the limitations and apply the multipliers in a reasonable way.

The most common application of multipliers is to estimate the economic impact associated with the establishment of a new firm, or the expansion of existing firms (or firm closure/contraction). In these cases, it is preferable to use economic multipliers for relative, rather than absolute, comparisons. This means that while economic multiplier analysis may be used to determine which activity has the largest economic impact, it should not be used to estimate the absolute impact of any single activity. Where multipliers are used to estimate the impacts of a single activity, the results should be treated as general estimates only and not as absolute values.

Projects that rely more on locally produced commodities generate higher impacts than those that rely primarily on imports. The greater the linkages between an industry and other parts of the economy, and the greater the value of these linkages, the larger the industry's multiplier.

Since the I/O model describes the Alberta economy in 2013, it is highly recommended to adjust all dollar values to 2013 prices using appropriate price deflator(s), such as the Consumer Price Index, in order to better capture the actual volumes of commodities associated with the impacts.

Employment multipliers show the total number of jobs required to support the change in activity being considered, but do not indicate the number of new jobs created. When the economy is running at full employment, it is important to remember that the number of jobs required for a particular project must come from other projects/industries or from outside the province. As indicated above, the I/O model assumes unlimited capacity, whereas in reality, there is a limited number of people in the workforce. Note that all employment impacts referenced throughout this document are measured in person-years.

The industry multipliers in this publication are at the "Link 1961" level of aggregation, while the commodity multipliers are provided at the "Summary" level. For more detailed impact analysis that considers industries or commodities at a more granular level, it may be necessary to do a custom run through Alberta Treasury Board and Finance. If users wish to exercise this option, they should contact Alberta Treasury Board and Finance directly.

DESCRIPTION OF ECONOMIC MULTIPLIER TABLES

In this publication, economic multipliers are presented for GDP at basic prices, labour income, employment and total output. Below is a brief description of each of the tables contained in this publication and how they should be used. Tables 1 through 4 present results from the Open model, Tables 5 through 8 present results from the Closed model without a Safety Net, and Tables 9 through 12 present results from the Closed model with a Safety Net activated. Table 13 presents commodity supply ratios for Alberta.

For simplicity, all dollar values below are at 2013 prices.

Table 1: Simple Multipliers By Industry

Open Model

Table 1 presents Simple Multipliers by industry that measure the direct and indirect effects on the Alberta economy due to a change in output for each of the 106 major industries.

The impacts on GDP, labour income and gross production are expressed as impacts per dollar of output change, while employment impacts are expressed as the number of jobs per \$10,000 of output.

Example:

If there was a \$1 million increase in the output of the Residential Building Construction industry (code: BS23A00), the economic impacts would be as follows:

- ◆ The impact on GDP at basic prices:
 $0.645 * \$1,000,000 = \$645,000.$
- ◆ The impact on labour income:
 $0.352 * \$1,000,000 = \$352,000.$
- ◆ The impact on employment required:
 $\$1,000,000 / \$10,000 * 0.052 = 5.2 \text{ jobs}.$
- ◆ The impact on total output:
 $1.486 * \$1,000,000 = \$1,486,000.$

Table 2: Type I Multipliers

Open Model

Table 2 consists of multipliers (direct and indirect) for industries. To use these multipliers, the user must know the direct increase in GDP at basic prices, labour income and the direct number of jobs for which the economic impacts are being analyzed.

- ◆ To use the GDP multiplier, the direct GDP content associated with some change in output must be known or calculated. The components of direct GDP at basic prices are those items which make up labour income, net taxes on production and a firm's operating surplus (profits, depreciation, etc.). The GDP multiplier is applied to this value.
- ◆ To use the labour income multiplier, the direct increase in wages, supplementary labour income and labour income of unincorporated sector must be known or estimated. The labour income multiplier is then applied to this value.
- ◆ The employment multiplier is expressed in terms of total number of jobs per direct job. For example, if a firm in Residential Building Construction industry (code: BS23A00) was established and employed 100 people directly, a total of $100 * 1.485 = 148.5$ jobs would be required (i.e., 100 direct jobs, plus an additional 48.5 indirect jobs). Please note that the multiplier does not distinguish between employee jobs and self-employed jobs (including persons working in a family business without pay).
- ◆ The output multiplier is expressed in terms of total gross production per dollar of direct production.

Table 3: Simple Multipliers By Commodity at Basic Prices

Open Model

Table 3 presents multipliers for the direct and indirect effects on the Alberta economy due to a change in output for each of the 63 commodity groups.

The impacts on GDP and labour income are expressed as impacts per dollar of output change, while employment impacts are expressed as the number of jobs per \$10,000 of output. Table 3 presents results calculated for data at basic prices.

Example:

If output of live animals (code: M112A) increased by \$10 million in Alberta, the economic impacts would be as follows:

- ◆ The impact on GDP at basic prices:
 $0.412 * \$10,000,000 = \$4,120,000$.
- ◆ The impact on labour income:
 $0.243 * \$10,000,000 = \$2,430,000$.
- ◆ The impact on employment required:
 $\$10,000,000 / \$10,000 * 0.112 = 112.0$ jobs.
- ◆ The impact on output:
 $2.663 * \$1,000,000 = \$26,630,000$.

Table 4: Simple Multipliers By Commodity at Purchaser Prices

Open Model

Table 4 is analogous to Table 3 except that it presents results for data at purchaser prices.

Table 5: Total Multipliers By Industry

Closed Model

Table 5 is analogous to Table 1, except that it presents results for the closed model, which includes induced impacts in addition to the direct and indirect effects.

Table 6: Type II Multipliers

Closed Model

Table 6 is analogous to Table 2 except that it presents results for the closed model, which includes induced impacts in addition to the direct and indirect effects.

Table 7: Total Multipliers By Commodity at Basic Prices

Closed Model

Table 7 is analogous to Table 3, except that it presents results for the closed model, which includes induced impacts in addition to the direct and indirect effects.

Table 8: Total Multipliers By Commodity at Purchaser Prices

Closed Model

Table 8 is analogous to Table 4, except that it presents results for the closed model, which includes induced impacts in addition to the direct and indirect effects.

Table 9: Total Multipliers By Industry

Closed Model with Safety Net

Table 9 is analogous to Table 5, except that the results are presented with a “Safety Net” activated.

Table 10: Type II Multipliers

Closed Model with Safety Net

Table 10 is analogous to Table 6, except that the results are presented with a “Safety Net” activated.

Table 11: Total Multipliers By Commodity at Basic Prices

Closed Model with Safety Net

Table 11 is analogous to Table 7, except that the results are presented with a “Safety Net” activated.

Table 12: Total Multipliers By Commodity at Purchaser Prices

Closed Model with Safety Net

Table 12 is analogous to Table 8, except that the results are presented with a “Safety Net” activated.

Table 13: Commodity Supply Ratios

Percent

Table 13 shows the source of supply for commodities purchased in Alberta. The data is presented as a percent for Alberta, for the rest of Canada and for the rest of the world. This table indicates both the extent of “openness” of the Alberta economy and the degree to which the economy depends on imports. For example, 80.5% of forestry products and services (code: M11E0) purchased in Alberta were supplied by Alberta domestic production, 18.9% were imported from the rest of Canada, and 0.6% were imported from outside Canada.

APPLICATION OF ECONOMIC MULTIPLIERS

The following example shows how the multipliers are used. In this example, the goal is to analyze which of two projects will provide a greater economic impact on the Alberta economy.

In general, the information available to do the analysis will determine which multiplier is most appropriate to use. For the purposes of this example, the results are presented for the Open model only. The same calculations can be done using the appropriate Closed model tables.

For proper application of the multipliers, all dollar values should be adjusted to 2013 prices using appropriate price deflator(s). For simplicity, all dollar values below are presented at 2013 prices.

The following information is available:

Project 1: Construction of an establishment in the Wood Product Manufacturing Industry

The plant (establishment) will cost \$4 million (at basic prices) to build in 2017. A further \$1 million (at purchaser prices) will be spent purchasing industrial machinery. When in operation in 2018, the plant will provide 12 jobs and generate annual sales of \$3 million (at basic prices) with the distribution of costs outlined below. For simplicity, net taxes on production and products are ignored.

Project 2: Expansion of output by an establishment in the Wholesale Trade Industry

This project expands production by \$3.2 million (at basic prices) in 2017 and 2018.

Analysis of Project 1

To analyze the impact of Project 1, it is necessary to divide the project into two phases. The first phase occurs in 2017 and involves the effects of constructing the plant and purchasing the machinery. The second phase is the economic impacts of the yearly output of the plant beginning in 2018.

Construction Phase of Project 1:

For the impacts associated with the construction of the plant, the appropriate economic multipliers can be found in Table 1. In this case, the industry here is Non-Residential Building Construction (code: BS23B00).

The construction phase during 2017 would have the following effects:

- ◆ The impact on GDP at basic prices:
 $0.633 * \$4,000,000 = \$2,532,000.$
- ◆ The impact on labour income:
 $0.373 * \$4,000,000 = \$1,492,000.$
- ◆ Employment required:
 $\$4,000,000 / \$10,000 * 0.048 = 19.2$ jobs.

The impacts of purchasing the industrial machinery (M3330) in 2017 are estimated by using the appropriate economic multipliers in Table 4. Since a commodity is being purchased, Table 13 must be applied to account for the proportion of output coming from Alberta. According to Table 13, 27.6 percent of the industrial machinery purchased in Alberta is produced in the province, so the value of the machinery purchased must be adjusted to reflect this.

The calculated impacts due to machinery purchases are as follows:

- ◆ Total value of Alberta machinery:
 $27.6\% * \$1,000,000 = \$276,000.$
- ◆ The impact on GDP at basic prices:
 $0.434 * \$276,000 = \$118,784.$
- ◆ The impact on labour income:
 $0.256 * \$276,000 = \$70,656.$
- ◆ Employment required:
 $\$276,000 / \$10,000 * 0.029 = 1.0$ jobs.

Alberta clearly derives more economic benefit from the construction activity associated with Project 1 than it does from the purchase of industrial machinery. This is partly due to the higher Alberta content for construction (i.e., local labour and materials) compared with machinery, which is predominately produced outside the province.

Operations Phase of Project 1:

The second phase of impacts associated with Project 1 involves the actual operation of the plant, which would begin operations in 2018. For this phase, the industry tables are used, since the impacts associated with the output of a particular industry are being analyzed. Since both the value of direct output and a breakdown of inputs have been given, either Simple multipliers (Table 1) or Type I multipliers (Table 2) can be used. To use Table 1, the procedure is to locate the appropriate industry and apply the ratios to the value of output. Here, information for the Wood Product Manufacturing industry (BS32100) is used, yielding the following impacts:

- ◆ The impact on GDP at basic prices:
 $0.694 * \$3,000,000 = \$2,082,000$.
- ◆ The impact on labour income:
 $0.411 * \$3,000,000 = \$1,233,000$.
- ◆ Employment required:
 $\$3,000,000 / \$10,000 * 0.044 = 13.2$ jobs

Since detailed cost information has been provided, the Type I multipliers provided in Table 2 can also be used. The first step is to analyze the categories for which cost information has been provided and identify which of these enter into the establishment's operating surplus and thereby directly into GDP at basic prices. As a rule, wages, profits and depreciation are primary inputs (not purchased from another industry) and go directly into GDP. If overhead consists of salaries for administration (as is assumed in this case), this category also enters directly into GDP. Materials and other purchased inputs are not considered as direct GDP since they are purchased from other industries and involve indirect economic impacts.

Therefore, the cost categories can be allocated as follows:

	(000s)	
Wages	\$ 825	Direct GDP
Profit	\$ 100	Direct GDP
Depreciation	\$ 200	Direct GDP
Overhead	\$ 25	Direct GDP
Subtotal	\$ 1,150	Direct GDP
Materials	\$ 1,850	Indirect Output
Total	\$ 3,000	

Thus, \$1,150,000 out of the firm's \$3 million gross output constitutes its direct contribution to GDP at basic prices.

Included in this contribution is an estimated \$850,000 (\$825,000 + \$25,000) of direct labour income and 12 direct jobs to which the appropriate multipliers from Table 2 (Wood Product Manufacturing, code: BS32100) would be applied. The impacts are below, based on Table 2:

- ◆ The impact on GDP at basic prices:
 $1.804 * \$1,150,000 = \$2,074,600$.
- ◆ The impact on labour income:
 $1.701 * \$850,000 = \$1,445,850$.
- ◆ Employment required:
 $1.914 * 12.0$ direct jobs = 23 jobs.

In this example, the results using multipliers from Table 2 are similar to those calculated using the Simple multipliers from Table 1. In practice, the multipliers from Table 2 should be used in preference to the intensity ratios from Table 1. Intensity ratios assume an "average" direct contribution to labour income, GDP at basic prices and employment; these factors can vary significantly from industry averages for particular firms. Generally, a more accurate result can be obtained by using actual data for firms and Type I (or II) multipliers rather than the industry averages implied in the Simple (Total) multipliers. However, to use Table 2, one must already know the direct impacts on GDP.

Analysis of Project 2

The only information provided for Project 2 is that output will increase by \$3.2 million at 2013 prices in both 2017 and 2018 for an establishment in the Wholesale Trade industry (code: BS41000). Since only industry data on output have been provided, one of the industry tables must be used (Table 1 or 2). As there is no breakdown of costs provided, multipliers from Table 1, rather than the multipliers from Table 2, must be used.

The \$3.2 million change in output is applied to each multiplier, yielding the following total impacts:

- ◆ Impact to GDP at basic prices:
 $0.815 * \$3,200,000 = \$2,608,000$
- ◆ Impact on labour income:
 $0.461 * \$3,200,000 = \$1,475,200$
- ◆ Employment required:
 $\$3,200,000 / \$10,000 * 0.055 = 17.6$ jobs required.

Since the output is the same for 2017 and 2018 (i.e., \$3.2 million), the impacts would be the same for both years.

Comparison of the Two Projects

The last step in the analysis is to compare the results of the two projects. The following is a summary of the results (note that for Project 1, we have to combine the impacts of the construction activities and the industrial machinery purchases to get total impact for 2017):

	Project 1	Project 2
GDP (\$000s):		
2017	2,651	2,608
2018	2,082	2,608
Labour Income (\$000s):		
2017	1,563	1,475
2018	1,233	1,475
Employment (Jobs):		
2017	20.2	17.6
2018	13.2	17.6

It is clear that Project 1 has the larger economic impact for 2017. This result is largely due to the construction phase of the plant. If a longer term view is taken, then Project 2 may in fact yield the larger economic benefit. This can be seen by comparing impacts for 2018, for which Project 2 has a greater effect on GDP, labour income and employment.

It must be remembered that when the economy is in a phase of full employment, an increase in resources in one project may draw resources from other industries, reducing the overall impact. Furthermore, the multipliers used in the above examples reflect the structure of the economy and industry linkages in 2013. If these linkages were to have changed materially by 2017 or 2018, the impacts calculated above will be less valid.

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TABLE 1: ALBERTA SIMPLE MULTIPLIERS (INDUSTRIES)

Open Model - Direct and Indirect Impacts

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS11A00	Crop and animal production	0.587	0.171	0.062	1.917
BS11300	Forestry and logging	0.657	0.454	0.053	1.760
BS11400	Fishing, hunting and trapping	0.862	0.242	0.074	1.265
BS11500	Support activities for agriculture and forestry	0.777	0.445	0.086	1.402
BS21100	Oil and gas extraction	0.782	0.221	0.019	0.786
BS21210	Coal mining	0.739	0.534	0.036	1.451
BS21220	Metal ore mining	0.663	0.172	0.059	1.388
BS21230	Non-metallic mineral mining and quarrying	0.738	0.317	0.034	1.392
BS21300	Support activities for mining and oil and gas extraction	0.787	0.429	0.038	1.273
BS22110	Electric power generation, transmission and distribution	0.819	0.423	0.032	1.360
BS221A0	Natural gas distribution, water, sewage and other systems	0.905	0.361	0.041	1.267
BS23A00	Residential building construction	0.645	0.352	0.052	1.486
BS23B00	Non-residential building construction	0.633	0.373	0.048	1.529
BS23C10	Transportation engineering construction	0.628	0.381	0.059	1.758
BS23C20	Oil and gas engineering construction	0.671	0.427	0.049	1.631
BS23C30	Electric power engineering construction	0.730	0.311	0.029	1.380
BS23C40	Communication engineering construction	0.504	0.297	0.038	1.529
BS23C50	Other engineering construction	0.648	0.401	0.042	1.575
BS23D00	Repair construction	0.637	0.409	0.055	1.497
BS23E00	Other activities of the construction industry	0.743	0.170	0.036	1.313
BS31110	Animal food manufacturing	0.433	0.228	0.035	1.700
BS31130	Sugar and confectionery product manufacturing	0.490	0.220	0.043	1.295
BS31140	Fruit and vegetable preserving and specialty food manufacturing	0.529	0.286	0.043	1.472
BS31150	Dairy product manufacturing	0.724	0.336	0.062	2.689
BS31160	Meat product manufacturing	0.414	0.285	0.059	2.313
BS31170	Seafood product preparation and packaging	0.465	0.212	0.116	1.451
BS311A0	Miscellaneous food manufacturing	0.619	0.231	0.039	2.019
BS31211	Soft drink and ice manufacturing	0.560	0.363	0.045	1.527
BS31212	Breweries	0.773	0.238	0.032	1.295
BS3121A	Wineries and distilleries	0.716	0.188	0.023	1.423
BS31220	Tobacco manufacturing	0.000	0.000	0.000	0.000

TABLE 1

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS31A00	Textile and textile product mills	0.567	0.379	0.104	1.253
BS31B00	Clothing and leather and allied product manufacturing	0.563	0.412	0.125	1.301
BS32100	Wood product manufacturing	0.694	0.411	0.044	1.727
BS32210	Pulp, paper and paperboard mills	0.537	0.327	0.030	1.602
BS32220	Converted paper product manufacturing	0.430	0.328	0.039	1.304
BS32300	Printing and related support activities	0.684	0.410	0.061	1.358
BS32400	Petroleum and coal product manufacturing	0.781	0.106	0.012	3.328
BS32510	Basic chemical manufacturing	0.737	0.143	0.014	1.665
BS32530	Pesticide, fertilizer and other agricultural chemical manufacturing	0.670	0.178	0.020	1.873
BS32540	Pharmaceutical and medicine manufacturing	0.606	0.242	0.026	1.531
BS325C0	Miscellaneous chemical product manufacturing	0.529	0.393	0.056	1.334
BS32610	Plastic product manufacturing	0.555	0.304	0.037	1.375
BS32620	Rubber product manufacturing	0.563	0.360	0.041	1.361
BS327A0	Non-metallic mineral product manufacturing (except cement and concrete products)	0.633	0.330	0.046	1.446
BS32730	Cement and concrete product manufacturing	0.681	0.323	0.043	1.527
BS33100	Primary metal manufacturing	0.337	0.247	0.023	1.394
BS33200	Fabricated metal product manufacturing	0.607	0.381	0.044	1.365
BS33300	Machinery manufacturing	0.558	0.328	0.037	1.329
BS33410	Computer and peripheral equipment manufacturing	0.573	0.428	0.049	1.238
BS334B0	Electronic product manufacturing	0.534	0.325	0.030	1.192
BS335A0	Electrical equipment and component manufacturing	0.532	0.358	0.036	1.288
BS33520	Household appliance manufacturing	0.570	0.441	0.054	1.588
BS33610	Motor vehicle manufacturing	1.445	0.361	0.109	1.448
BS33620	Motor vehicle body and trailer manufacturing	0.527	0.344	0.055	1.301
BS33630	Motor vehicle parts manufacturing	0.493	0.358	0.057	1.333
BS33640	Aerospace product and parts manufacturing	0.537	0.356	0.026	1.195
BS33650	Railroad rolling stock manufacturing	0.564	0.325	0.132	1.253
BS33660	Ship and boat building	0.479	0.329	0.076	1.275
BS33690	Other transportation equipment manufacturing	0.485	0.331	0.048	1.411
BS33700	Furniture and related product manufacturing	0.607	0.412	0.074	1.411
BS33900	Miscellaneous manufacturing	0.643	0.400	0.051	1.335

TABLE 1

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS41000	Wholesale trade	0.815	0.461	0.055	1.364
BS4A000	Retail trade	0.836	0.551	0.127	1.406
BS48100	Air transportation	0.566	0.375	0.054	1.650
BS48200	Rail transportation	0.842	0.459	0.045	1.441
BS48300	Water transportation	0.678	0.341	0.042	1.248
BS48400	Truck transportation	0.688	0.393	0.055	1.641
BS48B00	Transit, ground passenger and scenic and sightseeing transportation, taxi and limousine service and support activities for transportation	0.843	0.568	0.101	1.470
BS48600	Pipeline transportation	0.899	0.203	0.014	1.264
BS49A00	Postal service, couriers and messengers	0.798	0.558	0.120	1.445
BS49300	Warehousing and storage	0.847	0.576	0.098	1.267
BS51200	Motion picture and sound recording industries	0.634	0.267	0.098	1.328
BS51510	Radio and television broadcasting	0.656	0.420	0.067	1.258
BS51B00	Publishing, pay/specialty services, telecommunications and other information services	0.802	0.266	0.034	1.270
BS52B00	Depository credit intermediation and monetary authorities	0.829	0.436	0.061	1.304
BS52410	Insurance carriers	0.724	0.345	0.049	1.910
BS53110	Lessors of real estate	0.836	0.214	0.039	1.395
BS5311A	Owner-occupied dwellings	0.973	0.023	0.003	1.147
BS53B00	Rental and leasing services and lessors of non-financial intangible assets (except copyrighted works)	0.791	0.366	0.047	1.365
BS5A000	Other finance, insurance and real estate services and management of companies and enterprises	0.732	0.487	0.078	1.734
BS541C0	Legal, accounting and architectural, engineering and related services	0.795	0.500	0.062	1.316
BS541D0	Computer systems design and other professional, scientific and technical services	0.811	0.553	0.070	1.341
BS54180	Advertising, public relations, and related services	0.745	0.476	0.080	1.466
BS56100	Administrative and support services	0.824	0.562	0.109	1.292
BS56200	Waste management and remediation services	0.891	0.331	0.046	1.228
BS61000	Educational services	0.809	0.511	0.196	1.369
BS62000	Health care and social assistance	0.860	0.453	0.096	1.222
BS71000	Arts, entertainment and recreation	0.742	0.511	0.151	1.451

TABLE 1

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS72000	Accommodation and food services	0.711	0.483	0.146	1.354
BS81100	Repair and maintenance	0.799	0.508	0.082	1.324
BS81A00	Personal services and private households	0.676	0.363	0.134	1.106
BS81300	Professional and similar organizations	0.687	0.855	0.152	1.456
NP61000	Educational services	0.837	0.727	0.145	1.167
NP62400	Social assistance	0.864	0.778	0.192	1.215
NP71000	Arts, entertainment and recreation	0.710	0.529	0.155	1.471
NP81310	Religious organizations	0.771	0.608	0.152	1.416
NPA0000	Miscellaneous non-profit institutions serving households	0.753	0.592	0.132	1.456
GS611B0	Educational services (except universities)	0.873	0.754	0.113	1.207
GS61130	Universities	0.885	0.524	0.073	1.171
GS62200	Hospitals	0.819	0.705	0.076	1.345
GS62300	Nursing and residential care facilities	0.897	0.789	0.103	1.244
GS91100	Other federal government services	0.838	0.665	0.067	1.340
GS91200	Other provincial and territorial government services	0.856	0.502	0.069	1.763
GS91300	Other municipal government services	0.818	0.479	0.060	1.325
GS91400	Other aboriginal government services	0.818	0.615	0.024	1.587

Notes: Simple/Total multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change. Simple/Total multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 2: ALBERTA TYPE I MULTIPLIERS (INDUSTRIES)

Open Model - Direct and Indirect Impacts

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS11A00	Crop and animal production	1.800	3.584	2.015	1.917
BS11300	Forestry and logging	2.102	1.755	2.033	1.760
BS11400	Fishing, hunting and trapping	1.199	1.469	1.172	1.265
BS11500	Support activities for agriculture and forestry	1.323	1.293	1.219	1.402
BS21100	Oil and gas extraction	1.370	1.812	2.776	0.786
BS21210	Coal mining	1.461	1.257	1.698	1.451
BS21220	Metal ore mining	1.420	2.545	1.343	1.388
BS21230	Non-metallic mineral mining and quarrying	1.356	1.436	1.601	1.392
BS21300	Support activities for mining and oil and gas extraction	1.204	1.180	1.301	1.273
BS22110	Electric power generation, transmission and distribution	1.324	1.274	1.509	1.360
BS221A0	Natural gas distribution, water, sewage and other systems	1.198	1.213	1.266	1.267
BS23A00	Residential building construction	1.525	1.523	1.485	1.486
BS23B00	Non-residential building construction	1.626	1.560	1.619	1.529
BS23C10	Transportation engineering construction	2.203	1.970	1.719	1.758
BS23C20	Oil and gas engineering construction	1.802	1.534	1.566	1.631
BS23C30	Electric power engineering construction	1.318	1.439	1.791	1.380
BS23C40	Communication engineering construction	1.982	1.827	1.973	1.529
BS23C50	Other engineering construction	1.676	1.560	1.817	1.575
BS23D00	Repair construction	1.560	1.445	1.472	1.497
BS23E00	Other activities of the construction industry	1.269	1.901	1.475	1.313
BS31110	Animal food manufacturing	2.274	2.035	3.166	1.700
BS31130	Sugar and confectionery product manufacturing	1.356	1.473	1.530	1.295
BS31140	Fruit and vegetable preserving and specialty food manufacturing	1.716	1.730	2.160	1.472
BS31150	Dairy product manufacturing	3.104	3.245	3.113	2.689
BS31160	Meat product manufacturing	2.923	2.563	3.191	2.313
BS31170	Seafood product preparation and packaging	2.217	1.980	1.150	1.451
BS311A0	Miscellaneous food manufacturing	2.020	2.073	2.105	2.019
BS31211	Soft drink and ice manufacturing	1.700	1.511	1.898	1.527
BS31212	Breweries	1.214	1.398	1.550	1.295
BS3121A	Wineries and distilleries	1.276	1.538	1.802	1.423
BS31220	Tobacco manufacturing	0.000	0.000	0.000	0.000

TABLE 2

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS31A00	Textile and textile product mills	1.286	1.228	1.118	1.253
BS31B00	Clothing and leather and allied product manufacturing	1.365	1.259	1.123	1.301
BS32100	Wood product manufacturing	1.804	1.701	1.914	1.727
BS32210	Pulp, paper and paperboard mills	1.948	1.659	2.139	1.602
BS32220	Converted paper product manufacturing	1.471	1.289	1.369	1.304
BS32300	Printing and related support activities	1.354	1.306	1.303	1.358
BS32400	Petroleum and coal product manufacturing	3.624	6.134	8.572	3.328
BS32510	Basic chemical manufacturing	1.608	2.695	4.728	1.665
BS32530	Pesticide, fertilizer and other agricultural chemical manufacturing	2.111	2.551	3.051	1.873
BS32540	Pharmaceutical and medicine manufacturing	1.717	1.811	2.305	1.531
BS325C0	Miscellaneous chemical product manufacturing	1.417	1.256	1.234	1.334
BS32610	Plastic product manufacturing	1.450	1.420	1.512	1.375
BS32620	Rubber product manufacturing	1.417	1.344	1.430	1.361
BS327A0	Non-metallic mineral product manufacturing (except cement and concrete products)	1.501	1.472	1.484	1.446
BS32730	Cement and concrete product manufacturing	1.546	1.613	1.616	1.527
BS33100	Primary metal manufacturing	2.002	1.607	1.953	1.394
BS33200	Fabricated metal product manufacturing	1.382	1.311	1.394	1.365
BS33300	Machinery manufacturing	1.397	1.324	1.391	1.329
BS33410	Computer and peripheral equipment manufacturing	1.262	1.176	1.238	1.238
BS334B0	Electronic product manufacturing	1.216	1.183	1.321	1.192
BS335A0	Electrical equipment and component manufacturing	1.341	1.252	1.390	1.288
BS33520	Household appliance manufacturing	1.927	1.515	1.597	1.588
BS33610	Motor vehicle manufacturing	1.156	1.408	1.144	1.448
BS33620	Motor vehicle body and trailer manufacturing	1.366	1.283	1.252	1.301
BS33630	Motor vehicle parts manufacturing	1.492	1.313	1.288	1.333
BS33640	Aerospace product and parts manufacturing	1.229	1.160	1.338	1.195
BS33650	Railroad rolling stock manufacturing	1.276	1.234	1.069	1.253
BS33660	Ship and boat building	1.359	1.264	1.145	1.275
BS33690	Other transportation equipment manufacturing	1.753	1.421	1.318	1.411
BS33700	Furniture and related product manufacturing	1.462	1.354	1.279	1.411
BS33900	Miscellaneous manufacturing	1.335	1.286	1.336	1.335

TABLE 2

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS41000	Wholesale trade	1.301	1.268	1.370	1.364
BS4A000	Retail trade	1.349	1.271	1.182	1.406
BS48100	Air transportation	1.842	1.715	1.718	1.650
BS48200	Rail transportation	1.389	1.319	1.488	1.441
BS48300	Water transportation	1.231	1.250	1.282	1.248
BS48400	Truck transportation	1.777	1.650	1.665	1.641
BS48B00	Transit, ground passenger and scenic and sightseeing transportation, taxi and limousine service and support activities for transportation	1.393	1.276	1.225	1.470
BS48600	Pipeline transportation	1.191	1.444	2.755	1.264
BS49A00	Postal service, couriers and messengers	1.387	1.282	1.201	1.445
BS49300	Warehousing and storage	1.199	1.143	1.126	1.267
BS51200	Motion picture and sound recording industries	1.371	1.566	1.219	1.328
BS51510	Radio and television broadcasting	1.265	1.220	1.232	1.258
BS51B00	Publishing, pay/specialty services, telecommunications and other information services	1.224	1.399	1.519	1.270
BS52B00	Depository credit intermediation and monetary authorities	1.238	1.243	1.264	1.304
BS52410	Insurance carriers	2.224	2.408	2.581	1.910
BS53110	Lessors of real estate	1.348	1.872	1.632	1.395
BS5311A	Owner-occupied dwellings	1.116	0.000	0.000	1.147
BS53B00	Rental and leasing services and lessors of non-financial intangible assets (except copyrighted works)	1.310	1.366	1.471	1.365
BS5A000	Other finance, insurance and real estate services and management of companies and enterprises	1.845	1.637	1.565	1.734
BS541C0	Legal, accounting and architectural, engineering and related services	1.264	1.220	1.287	1.316
BS541D0	Computer systems design and other professional, scientific and technical services	1.286	1.213	1.260	1.341
BS54180	Advertising, public relations, and related services	1.511	1.410	1.375	1.466
BS56100	Administrative and support services	1.231	1.175	1.136	1.292
BS56200	Waste management and remediation services	1.153	1.229	1.254	1.228
BS61000	Educational services	1.326	1.284	1.112	1.369
BS62000	Health care and social assistance	1.158	1.167	1.125	1.222
BS71000	Arts, entertainment and recreation	1.479	1.377	1.214	1.451

TABLE 2

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS72000	Accommodation and food services	1.330	1.267	1.167	1.354
BS81100	Repair and maintenance	1.270	1.217	1.213	1.324
BS81A00	Personal services and private households	1.267	1.273	1.108	1.328
BS81300	Professional and similar organizations	1.549	1.185	1.158	1.456
NP61000	Educational services	1.115	1.065	1.049	1.167
NP62400	Social assistance	1.150	1.087	1.056	1.215
NP71000	Arts, entertainment and recreation	1.547	1.377	1.203	1.471
NP81310	Religious organizations	1.394	1.235	1.139	1.416
NPA0000	Miscellaneous non-profit institutions serving households	1.472	1.283	1.190	1.456
GS611B0	Educational services (except universities)	1.152	1.100	1.099	1.207
GS61130	Universities	1.115	1.100	1.110	1.171
GS62200	Hospitals	1.294	1.222	1.271	1.345
GS62300	Nursing and residential care facilities	1.165	1.103	1.111	1.244
GS91100	Other federal government services	1.275	1.180	1.279	1.340
GS91200	Other provincial and territorial government services	2.047	1.788	1.788	1.763
GS91300	Other municipal government services	1.190	1.222	1.267	1.325
GS91400	Other aboriginal government services	1.588	1.422	0.000	1.587

Notes: Type I/II multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change.

Type I/II multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 3: ALBERTA SIMPLE MULTIPLIERS (COMMODITIES AT BASIC PRICES)

Open Model - Direct and Indirect Impacts

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M111B	Grains and other crop products	0.691	0.127	0.031	1.471
M112A	Live animals	0.412	0.243	0.112	2.663
M11D0	Other farm products	0.414	0.243	0.112	2.658
M11E0	Forestry products and services	0.655	0.445	0.052	1.753
M1140	Fish, crustaceans, shellfish and other fishery products	0.651	0.199	0.064	1.521
M1150	Support services related to farming and forestry	0.624	0.340	0.072	1.883
M21B0	Mineral fuels	0.782	0.220	0.019	0.848
M2122	Metal ores and concentrates	0.663	0.172	0.059	1.388
M2123	Non-metallic minerals	0.748	0.287	0.032	1.068
M2130	Mineral support services	0.770	0.489	0.052	1.369
M21A0	Mineral and oil and gas exploration	0.787	0.398	0.035	1.106
M2200	Utilities	0.835	0.406	0.038	1.345
M23A0	Residential construction	0.645	0.352	0.052	1.486
M23B0	Non-residential buildings	0.633	0.373	0.048	1.529
M23C0	Engineering construction	0.670	0.415	0.048	1.621
M23D0	Repair construction services	0.637	0.409	0.055	1.497
M31C0	Food and non-alcoholic beverages	0.511	0.273	0.050	2.140
M312A	Alcoholic beverages and tobacco products	0.756	0.223	0.029	1.334
M31D0	Textile products, clothing, and products of leather and similar materials	0.594	0.404	0.110	1.301
M3210	Wood products	0.695	0.414	0.045	1.715
M3220	Wood pulp, paper and paper products and paper stock	0.527	0.327	0.032	1.566
M3230	Printed products and services	0.689	0.411	0.062	1.358
M3240	Refined petroleum products (except petrochemicals)	0.780	0.108	0.012	3.277
M3250	Chemical products	0.693	0.173	0.019	1.794
M3260	Plastic and rubber products	0.563	0.309	0.037	1.385
M3270	Non-metallic mineral products	0.668	0.325	0.044	1.505
M3310	Primary metallic products	0.371	0.263	0.026	1.400
M3320	Fabricated metallic products	0.600	0.375	0.043	1.365
M3330	Industrial machinery	0.565	0.334	0.038	1.331
M334C	Computers and electronic products	0.544	0.337	0.032	1.210
M3350	Electrical equipment, appliances and components	0.537	0.358	0.036	1.292
M336A	Transportation equipment	0.530	0.347	0.044	1.274
M3363	Motor vehicle parts	0.548	0.387	0.056	1.336
M3370	Furniture and related products	0.607	0.408	0.072	1.410
M3B00	Other manufactured products and custom work	0.652	0.393	0.055	1.377
M4100	Wholesale margins and commissions	0.808	0.457	0.055	1.367

TABLE 3

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M4A00	Retail margins, sales of used goods and commissions	0.832	0.544	0.126	1.403
M4B00	Transportation and related services	0.758	0.395	0.057	1.508
M51D0	Information and cultural services	0.688	0.408	0.060	1.292
M51E0	Published and recorded media products	0.804	0.423	0.064	1.351
M5170	Telecommunications	0.811	0.241	0.032	1.265
M52C0	Depository credit intermediation	0.849	0.445	0.061	1.262
M5F00	Other finance and insurance	0.784	0.448	0.060	1.345
M53D0	Real estate, rental and leasing and rights to non-financial intangible assets	0.816	0.291	0.046	1.389
M53C0	Imputed rental of owner-occupied dwellings	0.973	0.023	0.003	1.147
M541E	Professional services (except software and research and development)	0.795	0.493	0.065	1.339
M5E00	Software	0.802	0.484	0.060	1.269
M5417	Research and development	0.836	0.452	0.054	1.161
M5G00	Administrative and support, head office, waste management and remediation services	0.822	0.500	0.090	1.278
M6100	Education services	0.861	0.590	0.120	1.252
M6200	Health and social assistance services	0.856	0.496	0.097	1.242
M7100	Arts, entertainment and recreation services	0.758	0.512	0.130	1.437
M7200	Accommodation and food services	0.714	0.484	0.146	1.355
M8100	Other services	0.806	0.529	0.104	1.321
M9A00	Sales of other services by Non-Profit Institutions Serving Households	0.755	0.583	0.136	1.458
M9B00	Sales of other government services	0.823	0.607	0.067	1.463
N0000	Services provided by Non-Profit Institutions Serving Households	0.781	0.639	0.149	1.377
G6100	Education services provided by government sector	0.874	0.708	0.105	1.198
G6200	Health services provided by government sector	0.829	0.715	0.079	1.333
G9110	Other federal government services	0.823	0.641	0.070	1.315
G9120	Other provincial and territorial government services	0.774	0.489	0.068	1.827
G9130	Other municipal government services	0.863	0.479	0.060	1.325
G9140	Other aboriginal government services	0.818	0.615	0.024	1.587

Notes: Simple/Total multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change. Simple/Total multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 4: ALBERTA SIMPLE MULTIPLIERS (COMMODITIES AT PURCHASER PRICES)

Open Model - Direct and Indirect Impacts

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M111B	Grains and other crop products	0.652	0.120	0.030	1.389
M112A	Live animals	0.400	0.236	0.109	2.585
M11D0	Other farm products	0.388	0.228	0.105	2.488
M11E0	Forestry products and services	0.650	0.442	0.052	1.739
M1140	Fish, crustaceans, shellfish and other fishery products	0.533	0.163	0.053	1.245
M1150	Support services related to farming and forestry	0.624	0.340	0.072	1.883
M21B0	Mineral fuels	0.465	0.131	0.012	0.505
M2122	Metal ores and concentrates	0.663	0.172	0.059	1.388
M2123	Non-metallic minerals	0.501	0.193	0.021	0.715
M2130	Mineral support services	0.770	0.489	0.052	1.369
M21A0	Mineral and oil and gas exploration	0.787	0.398	0.035	1.106
M2200	Utilities	0.787	0.383	0.036	1.267
M23A0	Residential construction	0.618	0.338	0.049	1.423
M23B0	Non-residential buildings	0.630	0.372	0.048	1.523
M23C0	Engineering construction	0.670	0.415	0.048	1.621
M23D0	Repair construction services	0.609	0.391	0.052	1.430
M31C0	Food and non-alcoholic beverages	0.369	0.197	0.036	1.546
M312A	Alcoholic beverages and tobacco products	0.481	0.142	0.018	0.849
M31D0	Textile products, clothing, and products of leather and similar materials	0.361	0.246	0.067	0.791
M3210	Wood products	0.475	0.283	0.031	1.172
M3220	Wood pulp, paper and paper products and paper stock	0.494	0.306	0.030	1.468
M3230	Printed products and services	0.386	0.230	0.035	0.760
M3240	Refined petroleum products (except petrochemicals)	0.537	0.074	0.008	2.257
M3250	Chemical products	0.597	0.149	0.016	1.544
M3260	Plastic and rubber products	0.410	0.226	0.027	1.010
M3270	Non-metallic mineral products	0.572	0.279	0.038	1.290
M3310	Primary metallic products	0.369	0.262	0.026	1.393
M3320	Fabricated metallic products	0.518	0.323	0.037	1.177
M3330	Industrial machinery	0.434	0.256	0.029	1.021
M334C	Computers and electronic products	0.402	0.249	0.024	0.895
M3350	Electrical equipment, appliances and components	0.449	0.300	0.030	1.081
M336A	Transportation equipment	0.497	0.325	0.041	1.195
M3363	Motor vehicle parts	0.433	0.306	0.044	1.056
M3370	Furniture and related products	0.378	0.254	0.045	0.878
M3B00	Other manufactured products and custom work	0.517	0.312	0.044	1.092
M4100	Wholesale margins and commissions	0.808	0.457	0.055	1.367

TABLE 4

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M4A00	Retail margins, sales of used goods and commissions	0.331	0.217	0.050	0.559
M4B00	Transportation and related services	0.666	0.347	0.050	1.325
M51D0	Information and cultural services	0.669	0.397	0.059	1.256
M51E0	Published and recorded media products	0.632	0.332	0.050	1.062
M5170	Telecommunications	0.779	0.232	0.031	1.216
M52C0	Depository credit intermediation	0.845	0.442	0.061	1.256
M5F00	Other finance and insurance	0.784	0.448	0.060	1.345
M53D0	Real estate, rental and leasing and rights to non-financial intangible assets	0.798	0.285	0.045	1.360
M53C0	Imputed rental of owner-occupied dwellings	0.973	0.023	0.003	1.147
M541E	Professional services (except software and research and development)	0.770	0.478	0.063	1.296
M5E00	Software	0.801	0.484	0.059	1.268
M5417	Research and development	0.835	0.452	0.054	1.160
M5G00	Administrative and support, head office, waste management and remediation services	0.806	0.490	0.088	1.253
M6100	Education services	0.852	0.584	0.119	1.240
M6200	Health and social assistance services	0.856	0.496	0.097	1.242
M7100	Arts, entertainment and recreation services	0.730	0.493	0.125	1.385
M7200	Accommodation and food services	0.685	0.465	0.140	1.301
M8100	Other services	0.772	0.506	0.100	1.265
M9A00	Sales of other services by Non-Profit Institutions Serving Households	0.755	0.583	0.136	1.458
M9B00	Sales of other government services	0.823	0.607	0.067	1.463
N0000	Services provided by Non-Profit Institutions Serving Households	0.781	0.639	0.149	1.377
G6100	Education services provided by government sector	0.874	0.708	0.105	1.198
G6200	Health services provided by government sector	0.829	0.715	0.079	1.333
G9110	Other federal government services	0.823	0.641	0.070	1.315
G9120	Other provincial and territorial government services	0.774	0.489	0.068	1.827
G9130	Other municipal government services	0.863	0.479	0.060	1.325
G9140	Other aboriginal government services	0.818	0.615	0.024	1.587

Notes: Simple/Total multipliers for GDP, Labour Income and total Output expressed as total impact per dollar of output change. Simple/Total multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 5: ALBERTA TOTAL MULTIPLIERS (INDUSTRIES)

Closed Model - Direct , Indirect and Induced Impacts

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS11A00	Crop and animal production	0.692	0.212	0.070	2.094
BS11300	Forestry and logging	0.796	0.509	0.065	1.994
BS11400	Fishing, hunting and trapping	1.007	0.299	0.086	1.509
BS11500	Support activities for agriculture and forestry	0.954	0.515	0.101	1.699
BS21100	Oil and gas extraction	0.855	0.250	0.026	0.909
BS21210	Coal mining	0.906	0.600	0.050	1.732
BS21220	Metal ore mining	0.778	0.218	0.069	1.580
BS21230	Non-metallic mineral mining and quarrying	0.844	0.359	0.043	1.570
BS21300	Support activities for mining and oil and gas extraction	0.935	0.487	0.050	1.520
BS22110	Electric power generation, transmission and distribution	0.950	0.475	0.043	1.580
BS221A0	Natural gas distribution, water, sewage and other systems	1.031	0.411	0.052	1.478
BS23A00	Residential building construction	0.796	0.412	0.064	1.738
BS23B00	Non-residential building construction	0.783	0.433	0.060	1.781
BS23C10	Transportation engineering construction	0.777	0.439	0.072	2.007
BS23C20	Oil and gas engineering construction	0.828	0.489	0.062	1.894
BS23C30	Electric power engineering construction	0.841	0.355	0.038	1.566
BS23C40	Communication engineering construction	0.613	0.340	0.047	1.711
BS23C50	Other engineering construction	0.794	0.459	0.054	1.820
BS23D00	Repair construction	0.798	0.472	0.068	1.766
BS23E00	Other activities of the construction industry	0.866	0.218	0.046	1.518
BS31110	Animal food manufacturing	0.517	0.261	0.042	1.841
BS31130	Sugar and confectionery product manufacturing	0.569	0.251	0.050	1.428
BS31140	Fruit and vegetable preserving and specialty food manufacturing	0.628	0.325	0.051	1.637
BS31150	Dairy product manufacturing	0.837	0.381	0.071	2.878
BS31160	Meat product manufacturing	0.523	0.328	0.068	2.496
BS31170	Seafood product preparation and packaging	0.547	0.245	0.123	1.587
BS311A0	Miscellaneous food manufacturing	0.703	0.264	0.046	2.160
BS31211	Soft drink and ice manufacturing	0.679	0.410	0.055	1.727
BS31212	Breweries	0.846	0.267	0.038	1.419
BS3121A	Wineries and distilleries	0.781	0.213	0.028	1.531
BS31220	Tobacco manufacturing	0.000	0.000	0.000	0.000

TABLE 5

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS31A00	Textile and textile product mills	0.731	0.443	0.118	1.527
BS31B00	Clothing and leather and allied product manufacturing	0.766	0.492	0.142	1.642
BS32100	Wood product manufacturing	0.827	0.464	0.055	1.950
BS32210	Pulp, paper and paperboard mills	0.636	0.366	0.039	1.769
BS32220	Converted paper product manufacturing	0.544	0.373	0.048	1.495
BS32300	Printing and related support activities	0.829	0.467	0.073	1.600
BS32400	Petroleum and coal product manufacturing	0.815	0.119	0.014	3.384
BS32510	Basic chemical manufacturing	0.784	0.162	0.018	1.744
BS32530	Pesticide, fertilizer and other agricultural chemical manufacturing	0.730	0.202	0.025	1.975
BS32540	Pharmaceutical and medicine manufacturing	0.687	0.274	0.032	1.666
BS325C0	Miscellaneous chemical product manufacturing	0.674	0.450	0.068	1.576
BS32610	Plastic product manufacturing	0.655	0.343	0.045	1.543
BS32620	Rubber product manufacturing	0.677	0.406	0.050	1.553
BS327A0	Non-metallic mineral product manufacturing (except cement and concrete products)	0.746	0.374	0.055	1.636
BS32730	Cement and concrete product manufacturing	0.793	0.367	0.053	1.714
BS33100	Primary metal manufacturing	0.414	0.277	0.030	1.523
BS33200	Fabricated metal product manufacturing	0.739	0.434	0.054	1.586
BS33300	Machinery manufacturing	0.672	0.373	0.047	1.520
BS33410	Computer and peripheral equipment manufacturing	0.729	0.489	0.062	1.500
BS334B0	Electronic product manufacturing	0.644	0.369	0.039	1.376
BS335A0	Electrical equipment and component manufacturing	0.647	0.403	0.045	1.480
BS33520	Household appliance manufacturing	0.739	0.508	0.068	1.871
BS33610	Motor vehicle manufacturing	1.588	0.417	0.120	1.687
BS33620	Motor vehicle body and trailer manufacturing	0.654	0.394	0.065	1.515
BS33630	Motor vehicle parts manufacturing	0.615	0.406	0.067	1.538
BS33640	Aerospace product and parts manufacturing	0.644	0.398	0.035	1.374
BS33650	Railroad rolling stock manufacturing	0.877	0.449	0.158	1.777
BS33660	Ship and boat building	0.606	0.379	0.087	1.487
BS33690	Other transportation equipment manufacturing	0.614	0.382	0.059	1.626
BS33700	Furniture and related product manufacturing	0.771	0.477	0.087	1.686
BS33900	Miscellaneous manufacturing	0.792	0.458	0.063	1.584

TABLE 5

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS41000	Wholesale trade	0.977	0.525	0.068	1.635
BS4A000	Retail trade	1.049	0.635	0.145	1.762
BS48100	Air transportation	0.696	0.426	0.065	1.867
BS48200	Rail transportation	0.994	0.519	0.058	1.695
BS48300	Water transportation	0.860	0.413	0.057	1.553
BS48400	Truck transportation	0.840	0.453	0.067	1.895
BS48B00	Transit, ground passenger and scenic and sightseeing transportation, taxi and limousine service and support activities for transportation	1.053	0.651	0.118	1.822
BS48600	Pipeline transportation	0.961	0.228	0.019	1.368
BS49A00	Postal service, couriers and messengers	1.010	0.642	0.137	1.800
BS49300	Warehousing and storage	1.057	0.659	0.116	1.619
BS51200	Motion picture and sound recording industries	0.765	0.319	0.109	1.548
BS51510	Radio and television broadcasting	0.812	0.482	0.080	1.519
BS51B00	Publishing, pay/specialty services, telecommunications and other information services	0.894	0.303	0.042	1.425
BS52B00	Depository credit intermediation and monetary authorities	0.981	0.496	0.073	1.559
BS52410	Insurance carriers	0.847	0.393	0.059	2.116
BS53110	Lessors of real estate	0.925	0.249	0.046	1.543
BS5311A	Owner-occupied dwellings	0.981	0.027	0.004	1.161
BS53B00	Rental and leasing services and lessors of non-financial intangible assets (except copyrighted works)	0.924	0.419	0.058	1.589
BS5A000	Other finance, insurance and real estate services and management of companies and enterprises	0.941	0.569	0.096	2.083
BS541C0	Legal, accounting and architectural, engineering and related services	0.998	0.581	0.079	1.657
BS541D0	Computer systems design and other professional, scientific and technical services	1.028	0.638	0.087	1.704
BS54180	Advertising, public relations, and related services	0.959	0.561	0.098	1.825
BS56100	Administrative and support services	1.053	0.652	0.128	1.675
BS56200	Waste management and remediation services	1.016	0.380	0.057	1.437
BS61000	Educational services	1.068	0.613	0.217	1.802
BS62000	Health care and social assistance	1.077	0.539	0.114	1.585
BS71000	Arts, entertainment and recreation	0.960	0.597	0.169	1.815

TABLE 5

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS72000	Accommodation and food services	0.905	0.560	0.163	1.680
BS81100	Repair and maintenance	1.000	0.587	0.099	1.661
BS81A00	Personal services and private households	0.850	0.432	0.148	1.398
BS81300	Professional and similar organizations	1.005	0.980	0.178	1.988
NP61000	Educational services	1.108	0.834	0.168	1.622
NP62400	Social assistance	1.161	0.895	0.217	1.713
NP71000	Arts, entertainment and recreation	0.919	0.611	0.172	1.820
NP81310	Religious organizations	1.000	0.699	0.171	1.799
NPA0000	Miscellaneous non-profit institutions serving households	0.979	0.681	0.151	1.834
GS611B0	Educational services (except universities)	1.122	0.852	0.133	1.625
GS61130	Universities	1.061	0.594	0.087	1.466
GS62200	Hospitals	1.041	0.792	0.094	1.716
GS62300	Nursing and residential care facilities	1.166	0.895	0.126	1.694
GS91100	Other federal government services	1.047	0.747	0.085	1.690
GS91200	Other provincial and territorial government services	1.024	0.569	0.083	2.046
GS91300	Other municipal government services	0.974	0.540	0.072	1.586
GS91400	Other aboriginal government services	1.050	0.706	0.044	1.974

Notes: Simple/Total multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change. Simple/Total multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 6: ALBERTA TYPE II MULTIPLIERS (INDUSTRIES)

Closed Model - Direct , Indirect and Induced Impacts

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS11A00	Crop and animal production	2.124	4.458	2.300	2.094
BS11300	Forestry and logging	2.549	1.968	2.473	1.994
BS11400	Fishing, hunting and trapping	1.402	1.819	1.364	1.509
BS11500	Support activities for agriculture and forestry	1.626	1.496	1.428	1.699
BS21100	Oil and gas extraction	1.498	2.049	3.640	0.909
BS21210	Coal mining	1.793	1.413	2.350	1.732
BS21220	Metal ore mining	1.667	3.215	1.559	1.580
BS21230	Non-metallic mineral mining and quarrying	1.552	1.626	2.013	1.570
BS21300	Support activities for mining and oil and gas extraction	1.429	1.340	1.724	1.520
BS22110	Electric power generation, transmission and distribution	1.536	1.430	2.015	1.580
BS221A0	Natural gas distribution, water, sewage and other systems	1.365	1.380	1.585	1.478
BS23A00	Residential building construction	1.881	1.780	1.844	1.738
BS23B00	Non-residential building construction	2.013	1.809	2.042	1.781
BS23C10	Transportation engineering construction	2.725	2.274	2.076	2.007
BS23C20	Oil and gas engineering construction	2.225	1.757	1.980	1.894
BS23C30	Electric power engineering construction	1.518	1.642	2.361	1.566
BS23C40	Communication engineering construction	2.409	2.091	2.444	1.711
BS23C50	Other engineering construction	2.053	1.783	2.341	1.820
BS23D00	Repair construction	1.954	1.669	1.828	1.766
BS23E00	Other activities of the construction industry	1.478	2.442	1.887	1.518
BS31110	Animal food manufacturing	2.715	2.331	3.799	1.841
BS31130	Sugar and confectionery product manufacturing	1.576	1.683	1.764	1.428
BS31140	Fruit and vegetable preserving and specialty food manufacturing	2.036	1.965	2.569	1.637
BS31150	Dairy product manufacturing	3.588	3.675	3.584	2.878
BS31160	Meat product manufacturing	3.693	2.950	3.676	2.496
BS31170	Seafood product preparation and packaging	2.606	2.281	1.216	1.587
BS311A0	Miscellaneous food manufacturing	2.294	2.371	2.482	2.160
BS31211	Soft drink and ice manufacturing	2.063	1.708	2.314	1.727
BS31212	Breweries	1.330	1.569	1.849	1.419
BS3121A	Wineries and distilleries	1.391	1.747	2.227	1.531
BS31220	Tobacco manufacturing	0.000	0.000	0.000	0.000

TABLE 6

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS31A00	Textile and textile product mills	1.657	1.437	1.263	1.527
BS31B00	Clothing and leather and allied product manufacturing	1.857	1.504	1.273	1.642
BS32100	Wood product manufacturing	2.150	1.918	2.394	1.950
BS32210	Pulp, paper and paperboard mills	2.309	1.858	2.718	1.769
BS32220	Converted paper product manufacturing	1.863	1.467	1.701	1.495
BS32300	Printing and related support activities	1.640	1.488	1.558	1.600
BS32400	Petroleum and coal product manufacturing	3.778	6.892	10.607	3.384
BS32510	Basic chemical manufacturing	1.710	3.045	6.014	1.744
BS32530	Pesticide, fertilizer and other agricultural chemical manufacturing	2.302	2.892	3.814	1.975
BS32540	Pharmaceutical and medicine manufacturing	1.946	2.050	2.904	1.666
BS325C0	Miscellaneous chemical product manufacturing	1.805	1.438	1.496	1.576
BS32610	Plastic product manufacturing	1.712	1.605	1.853	1.543
BS32620	Rubber product manufacturing	1.706	1.513	1.764	1.553
BS327A0	Non-metallic mineral product manufacturing (except cement and concrete products)	1.770	1.671	1.790	1.636
BS32730	Cement and concrete product manufacturing	1.800	1.833	1.960	1.714
BS33100	Primary metal manufacturing	2.458	1.804	2.482	1.523
BS33200	Fabricated metal product manufacturing	1.683	1.490	1.743	1.586
BS33300	Machinery manufacturing	1.682	1.505	1.742	1.520
BS33410	Computer and peripheral equipment manufacturing	1.605	1.345	1.561	1.500
BS334B0	Electronic product manufacturing	1.466	1.341	1.729	1.376
BS335A0	Electrical equipment and component manufacturing	1.630	1.411	1.761	1.480
BS33520	Household appliance manufacturing	2.498	1.744	2.008	1.871
BS33610	Motor vehicle manufacturing	1.271	1.627	1.268	1.687
BS33620	Motor vehicle body and trailer manufacturing	1.696	1.471	1.493	1.515
BS33630	Motor vehicle parts manufacturing	1.863	1.490	1.517	1.538
BS33640	Aerospace product and parts manufacturing	1.474	1.297	1.786	1.374
BS33650	Railroad rolling stock manufacturing	1.984	1.703	1.279	1.777
BS33660	Ship and boat building	1.719	1.456	1.303	1.487
BS33690	Other transportation equipment manufacturing	2.217	1.639	1.608	1.626
BS33700	Furniture and related product manufacturing	1.857	1.567	1.515	1.686
BS33900	Miscellaneous manufacturing	1.644	1.474	1.659	1.584

TABLE 6

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS41000	Wholesale trade	1.560	1.444	1.705	1.635
BS4A000	Retail trade	1.692	1.464	1.345	1.762
BS48100	Air transportation	2.264	1.949	2.059	1.867
BS48200	Rail transportation	1.639	1.490	1.901	1.695
BS48300	Water transportation	1.562	1.513	1.741	1.553
BS48400	Truck transportation	2.169	1.901	2.048	1.895
BS48B00	Transit, ground passenger and scenic and sightseeing transportation, taxi and limousine service and support activities for transportation	1.740	1.462	1.436	1.822
BS48600	Pipeline transportation	1.273	1.618	3.792	1.368
BS49A00	Postal service, couriers and messengers	1.755	1.475	1.377	1.800
BS49300	Warehousing and storage	1.497	1.308	1.325	1.619
BS51200	Motion picture and sound recording industries	1.654	1.869	1.354	1.548
BS51510	Radio and television broadcasting	1.566	1.399	1.470	1.519
BS51B00	Publishing, pay/specialty services, telecommunications and other information services	1.365	1.591	1.857	1.425
BS52B00	Depository credit intermediation and monetary authorities	1.466	1.414	1.526	1.559
BS52410	Insurance carriers	2.602	2.747	3.121	2.116
BS53110	Lessors of real estate	1.491	2.179	1.938	1.543
BS5311A	Owner-occupied dwellings	1.125	0.000	0.000	1.161
BS53B00	Rental and leasing services and lessors of non-financial intangible assets (except copyrighted works)	1.532	1.563	1.817	1.589
BS5A000	Other finance, insurance and real estate services and management of companies and enterprises	2.370	1.913	1.909	2.083
BS541C0	Legal, accounting and architectural, engineering and related services	1.588	1.416	1.637	1.657
BS541D0	Computer systems design and other professional, scientific and technical services	1.630	1.401	1.585	1.704
BS54180	Advertising, public relations, and related services	1.946	1.660	1.680	1.825
BS56100	Administrative and support services	1.572	1.363	1.334	1.675
BS56200	Waste management and remediation services	1.315	1.412	1.533	1.437
BS61000	Educational services	1.749	1.541	1.234	1.802
BS62000	Health care and social assistance	1.450	1.387	1.335	1.585
BS71000	Arts, entertainment and recreation	1.912	1.608	1.359	1.815

TABLE 6

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS72000	Accommodation and food services	1.694	1.468	1.295	1.680
BS81100	Repair and maintenance	1.590	1.408	1.459	1.661
BS81A00	Personal services and private households	1.593	1.514	1.227	1.678
BS81300	Professional and similar organizations	2.266	1.359	1.358	1.988
NP61000	Educational services	1.477	1.222	1.211	1.622
NP62400	Social assistance	1.545	1.251	1.191	1.713
NP71000	Arts, entertainment and recreation	2.001	1.591	1.337	1.820
NP81310	Religious organizations	1.807	1.418	1.280	1.799
NPA0000	Miscellaneous non-profit institutions serving households	1.912	1.476	1.358	1.834
GS611B0	Educational services (except universities)	1.482	1.243	1.301	1.625
GS61130	Universities	1.337	1.245	1.333	1.466
GS62200	Hospitals	1.644	1.374	1.580	1.716
GS62300	Nursing and residential care facilities	1.514	1.252	1.350	1.694
GS91100	Other federal government services	1.593	1.326	1.608	1.690
GS91200	Other provincial and territorial government services	2.450	2.025	2.150	2.046
GS91300	Other municipal government services	1.416	1.379	1.542	1.586
GS91400	Other aboriginal government services	2.036	1.633	0.000	1.974

Notes: Type I/II multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change.

Type I/II multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 7: ALBERTA TOTAL MULTIPLIERS (COMMODITIES AT BASIC PRICES)

Closed Model - Direct, Indirect and Induced Impacts

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M111B	Grains and other crop products	0.755	0.153	0.037	1.578
M112A	Live animals	0.588	0.313	0.127	2.957
M11D0	Other farm products	0.589	0.313	0.127	2.951
M11E0	Forestry products and services	0.792	0.499	0.064	1.982
M1140	Fish, crustaceans, shellfish and other fishery products	0.748	0.237	0.072	1.684
M1150	Support services related to farming and forestry	0.768	0.397	0.084	2.125
M21B0	Mineral fuels	0.855	0.248	0.025	0.971
M2122	Metal ores and concentrates	0.778	0.218	0.069	1.580
M2123	Non-metallic minerals	0.853	0.329	0.041	1.242
M2130	Mineral support services	0.952	0.561	0.067	1.673
M21A0	Mineral and oil and gas exploration	0.922	0.451	0.046	1.334
M2200	Utilities	0.965	0.458	0.049	1.563
M23A0	Residential construction	0.796	0.412	0.064	1.738
M23B0	Non-residential buildings	0.783	0.433	0.060	1.781
M23C0	Engineering construction	0.823	0.475	0.061	1.877
M23D0	Repair construction services	0.798	0.472	0.068	1.766
M31C0	Food and non-alcoholic beverages	0.612	0.313	0.059	2.308
M312A	Alcoholic beverages and tobacco products	0.827	0.251	0.035	1.453
M31D0	Textile products, clothing, and products of leather and similar materials	0.773	0.475	0.125	1.602
M3210	Wood products	0.830	0.467	0.056	1.941
M3220	Wood pulp, paper and paper products and paper stock	0.628	0.367	0.040	1.736
M3230	Printed products and services	0.835	0.469	0.074	1.602
M3240	Refined petroleum products (except petrochemicals)	0.814	0.121	0.015	3.334
M3250	Chemical products	0.752	0.196	0.024	1.891
M3260	Plastic and rubber products	0.664	0.350	0.046	1.556
M3270	Non-metallic mineral products	0.780	0.370	0.053	1.693
M3310	Primary metallic products	0.454	0.296	0.033	1.539
M3320	Fabricated metallic products	0.730	0.426	0.054	1.582
M3330	Industrial machinery	0.681	0.380	0.047	1.525
M334C	Computers and electronic products	0.658	0.382	0.041	1.402
M3350	Electrical equipment, appliances and components	0.653	0.404	0.046	1.486
M336A	Transportation equipment	0.650	0.394	0.054	1.475
M3363	Motor vehicle parts	0.681	0.440	0.067	1.561
M3370	Furniture and related products	0.768	0.472	0.085	1.680
M3B00	Other manufactured products and custom work	0.796	0.450	0.067	1.619
M4100	Wholesale margins and commissions	0.969	0.520	0.068	1.636

TABLE 7

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M4A00	Retail margins, sales of used goods and commissions	1.042	0.627	0.144	1.756
M4B00	Transportation and related services	0.901	0.452	0.069	1.749
M51D0	Information and cultural services	0.841	0.468	0.073	1.548
M51E0	Published and recorded media products	0.961	0.485	0.077	1.613
M5170	Telecommunications	0.895	0.274	0.039	1.406
M52C0	Depository credit intermediation	1.001	0.505	0.073	1.517
M5F00	Other finance and insurance	0.950	0.514	0.074	1.623
M53D0	Real estate, rental and leasing and rights to non-financial intangible assets	0.930	0.336	0.056	1.581
M53C0	Imputed rental of owner-occupied dwellings	0.981	0.027	0.004	1.161
M541E	Professional services (except software and research and development)	0.996	0.573	0.082	1.675
M5E00	Software	0.981	0.555	0.074	1.570
M5417	Research and development	0.993	0.514	0.067	1.424
M5G00	Administrative and support, head office, waste management and remediation services	1.020	0.578	0.107	1.610
M6100	Education services	1.085	0.678	0.139	1.629
M6200	Health and social assistance services	1.076	0.583	0.115	1.611
M7100	Arts, entertainment and recreation services	0.964	0.593	0.147	1.782
M7200	Accommodation and food services	0.909	0.561	0.162	1.681
M8100	Other services	1.015	0.611	0.121	1.671
M9A00	Sales of other services by Non-Profit Institutions Serving Households	0.978	0.671	0.154	1.831
M9B00	Sales of other government services	1.017	0.684	0.083	1.788
N0000	Services provided by Non-Profit Institutions Serving Households	1.023	0.735	0.169	1.783
G6100	Education services provided by government sector	1.109	0.800	0.124	1.591
G6200	Health services provided by government sector	1.056	0.805	0.098	1.713
G9110	Other federal government services	1.025	0.721	0.087	1.654
G9120	Other provincial and territorial government services	0.939	0.554	0.082	2.104
G9130	Other municipal government services	1.019	0.540	0.072	1.586
G9140	Other aboriginal government services	1.050	0.706	0.044	1.974

Notes: Simple/Total multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change. Simple/Total multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 8: ALBERTA TOTAL MULTIPLIERS (COMMODITIES AT PURCHASER PRICES)

Closed Model - Direct, Indirect and Induced Impacts

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M111B	Grains and other crop products	0.712	0.144	0.035	1.490
M112A	Live animals	0.570	0.303	0.123	2.870
M11D0	Other farm products	0.552	0.293	0.119	2.763
M11E0	Forestry products and services	0.786	0.495	0.063	1.967
M1140	Fish, crustaceans, shellfish and other fishery products	0.613	0.194	0.059	1.379
M1150	Support services related to farming and forestry	0.768	0.397	0.084	2.125
M21B0	Mineral fuels	0.509	0.148	0.015	0.578
M2122	Metal ores and concentrates	0.778	0.218	0.069	1.580
M2123	Non-metallic minerals	0.571	0.220	0.027	0.833
M2130	Mineral support services	0.952	0.561	0.067	1.673
M21A0	Mineral and oil and gas exploration	0.922	0.451	0.046	1.334
M2200	Utilities	0.909	0.431	0.046	1.473
M23A0	Residential construction	0.762	0.395	0.061	1.665
M23B0	Non-residential buildings	0.780	0.431	0.060	1.774
M23C0	Engineering construction	0.823	0.475	0.061	1.877
M23D0	Repair construction services	0.762	0.451	0.065	1.687
M31C0	Food and non-alcoholic beverages	0.442	0.226	0.042	1.667
M312A	Alcoholic beverages and tobacco products	0.526	0.160	0.022	0.925
M31D0	Textile products, clothing, and products of leather and similar materials	0.470	0.289	0.076	0.974
M3210	Wood products	0.567	0.319	0.039	1.326
M3220	Wood pulp, paper and paper products and paper stock	0.589	0.344	0.037	1.627
M3230	Printed products and services	0.467	0.262	0.041	0.896
M3240	Refined petroleum products (except petrochemicals)	0.561	0.084	0.010	2.296
M3250	Chemical products	0.647	0.169	0.020	1.627
M3260	Plastic and rubber products	0.485	0.255	0.033	1.135
M3270	Non-metallic mineral products	0.669	0.317	0.046	1.451
M3310	Primary metallic products	0.452	0.295	0.032	1.532
M3320	Fabricated metallic products	0.629	0.367	0.046	1.364
M3330	Industrial machinery	0.523	0.291	0.036	1.170
M334C	Computers and electronic products	0.487	0.282	0.031	1.037
M3350	Electrical equipment, appliances and components	0.546	0.338	0.038	1.243
M336A	Transportation equipment	0.610	0.370	0.050	1.383
M3363	Motor vehicle parts	0.539	0.348	0.053	1.234
M3370	Furniture and related products	0.478	0.294	0.053	1.047
M3B00	Other manufactured products and custom work	0.631	0.357	0.053	1.284
M4100	Wholesale margins and commissions	0.969	0.520	0.068	1.636

TABLE 8

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M4A00	Retail margins, sales of used goods and commissions	0.416	0.250	0.057	0.700
M4B00	Transportation and related services	0.792	0.397	0.060	1.536
M51D0	Information and cultural services	0.818	0.456	0.071	1.505
M51E0	Published and recorded media products	0.755	0.381	0.060	1.268
M5170	Telecommunications	0.860	0.264	0.038	1.351
M52C0	Depository credit intermediation	0.996	0.502	0.073	1.510
M5F00	Other finance and insurance	0.950	0.514	0.074	1.623
M53D0	Real estate, rental and leasing and rights to non-financial intangible assets	0.910	0.329	0.054	1.547
M53C0	Imputed rental of owner-occupied dwellings	0.981	0.027	0.004	1.161
M541E	Professional services (except software and research and development)	0.964	0.555	0.079	1.622
M5E00	Software	0.980	0.554	0.074	1.568
M5417	Research and development	0.992	0.514	0.067	1.423
M5G00	Administrative and support, head office, waste management and remediation services	1.000	0.567	0.104	1.578
M6100	Education services	1.075	0.672	0.138	1.613
M6200	Health and social assistance services	1.076	0.583	0.115	1.611
M7100	Arts, entertainment and recreation services	0.928	0.571	0.142	1.717
M7200	Accommodation and food services	0.873	0.539	0.156	1.615
M8100	Other services	0.972	0.585	0.116	1.600
M9A00	Sales of other services by Non-Profit Institutions Serving Households	0.978	0.671	0.154	1.831
M9B00	Sales of other government services	1.017	0.684	0.083	1.788
N0000	Services provided by Non-Profit Institutions Serving Households	1.023	0.735	0.169	1.783
G6100	Education services provided by government sector	1.109	0.800	0.124	1.591
G6200	Health services provided by government sector	1.056	0.805	0.098	1.713
G9110	Other federal government services	1.025	0.721	0.087	1.654
G9120	Other provincial and territorial government services	0.939	0.554	0.082	2.104
G9130	Other municipal government services	1.019	0.540	0.072	1.586
G9140	Other aboriginal government services	1.050	0.706	0.044	1.974

Notes: Simple/Total multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change. Simple/Total multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 9: ALBERTA TOTAL MULTIPLIERS (INDUSTRIES)

Closed Model - Direct , Indirect and Induced Impacts

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS11A00	Crop and animal production	0.657	0.198	0.067	2.034
BS11300	Forestry and logging	0.734	0.485	0.060	1.889
BS11400	Fishing, hunting and trapping	0.965	0.282	0.082	1.439
BS11500	Support activities for agriculture and forestry	0.868	0.480	0.094	1.554
BS21100	Oil and gas extraction	0.832	0.240	0.024	0.870
BS21210	Coal mining	0.861	0.582	0.046	1.657
BS21220	Metal ore mining	0.746	0.205	0.066	1.527
BS21230	Non-metallic mineral mining and quarrying	0.798	0.341	0.039	1.492
BS21300	Support activities for mining and oil and gas extraction	0.884	0.467	0.045	1.434
BS22110	Electric power generation, transmission and distribution	0.913	0.460	0.040	1.518
BS221A0	Natural gas distribution, water, sewage and other systems	0.983	0.392	0.048	1.397
BS23A00	Residential building construction	0.731	0.386	0.059	1.629
BS23B00	Non-residential building construction	0.722	0.409	0.055	1.678
BS23C10	Transportation engineering construction	0.692	0.406	0.065	1.865
BS23C20	Oil and gas engineering construction	0.766	0.465	0.057	1.790
BS23C30	Electric power engineering construction	0.804	0.341	0.035	1.503
BS23C40	Communication engineering construction	0.565	0.321	0.043	1.631
BS23C50	Other engineering construction	0.738	0.437	0.049	1.727
BS23D00	Repair construction	0.731	0.446	0.063	1.654
BS23E00	Other activities of the construction industry	0.836	0.206	0.044	1.467
BS31110	Animal food manufacturing	0.483	0.248	0.039	1.784
BS31130	Sugar and confectionery product manufacturing	0.526	0.234	0.046	1.356
BS31140	Fruit and vegetable preserving and specialty food manufacturing	0.583	0.307	0.048	1.562
BS31150	Dairy product manufacturing	0.771	0.355	0.066	2.769
BS31160	Meat product manufacturing	0.466	0.306	0.064	2.401
BS31170	Seafood product preparation and packaging	0.506	0.229	0.120	1.520
BS311A0	Miscellaneous food manufacturing	0.663	0.248	0.042	2.093
BS31211	Soft drink and ice manufacturing	0.631	0.391	0.051	1.646
BS31212	Breweries	0.811	0.253	0.035	1.360
BS3121A	Wineries and distilleries	0.755	0.203	0.026	1.489
BS31220	Tobacco manufacturing	0.000	0.000	0.000	0.000

TABLE 9

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS31A00	Textile and textile product mills	0.649	0.411	0.111	1.391
BS31B00	Clothing and leather and allied product manufacturing	0.674	0.456	0.135	1.488
BS32100	Wood product manufacturing	0.774	0.443	0.051	1.861
BS32210	Pulp, paper and paperboard mills	0.601	0.352	0.036	1.710
BS32220	Converted paper product manufacturing	0.498	0.355	0.045	1.418
BS32300	Printing and related support activities	0.755	0.438	0.067	1.476
BS32400	Petroleum and coal product manufacturing	0.801	0.114	0.013	3.361
BS32510	Basic chemical manufacturing	0.768	0.155	0.017	1.718
BS32530	Pesticide, fertilizer and other agricultural chemical manufacturing	0.708	0.194	0.023	1.938
BS32540	Pharmaceutical and medicine manufacturing	0.656	0.262	0.030	1.616
BS325C0	Miscellaneous chemical product manufacturing	0.607	0.424	0.063	1.465
BS32610	Plastic product manufacturing	0.611	0.326	0.042	1.470
BS32620	Rubber product manufacturing	0.631	0.387	0.046	1.475
BS327A0	Non-metallic mineral product manufacturing (except cement and concrete products)	0.694	0.354	0.051	1.548
BS32730	Cement and concrete product manufacturing	0.737	0.345	0.048	1.620
BS33100	Primary metal manufacturing	0.388	0.267	0.028	1.481
BS33200	Fabricated metal product manufacturing	0.687	0.413	0.050	1.498
BS33300	Machinery manufacturing	0.625	0.354	0.043	1.441
BS33410	Computer and peripheral equipment manufacturing	0.674	0.467	0.058	1.407
BS334B0	Electronic product manufacturing	0.609	0.355	0.036	1.318
BS335A0	Electrical equipment and component manufacturing	0.606	0.387	0.042	1.411
BS33520	Household appliance manufacturing	0.676	0.483	0.063	1.766
BS33610	Motor vehicle manufacturing	1.523	0.391	0.115	1.578
BS33620	Motor vehicle body and trailer manufacturing	0.588	0.368	0.060	1.403
BS33630	Motor vehicle parts manufacturing	0.557	0.383	0.062	1.441
BS33640	Aerospace product and parts manufacturing	0.613	0.386	0.033	1.323
BS33650	Railroad rolling stock manufacturing	0.802	0.419	0.152	1.653
BS33660	Ship and boat building	0.548	0.356	0.082	1.390
BS33690	Other transportation equipment manufacturing	0.556	0.359	0.054	1.529
BS33700	Furniture and related product manufacturing	0.687	0.444	0.080	1.545
BS33900	Miscellaneous manufacturing	0.734	0.435	0.058	1.486

TABLE 9

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS41000	Wholesale trade	0.912	0.500	0.063	1.526
BS4A000	Retail trade	0.951	0.596	0.137	1.599
BS48100	Air transportation	0.643	0.405	0.060	1.778
BS48200	Rail transportation	0.935	0.496	0.053	1.597
BS48300	Water transportation	0.811	0.394	0.053	1.470
BS48400	Truck transportation	0.772	0.426	0.062	1.782
BS48B00	Transit, ground passenger and scenic and sightseeing transportation, taxi and limousine service and support activities for transportation	0.951	0.610	0.110	1.650
BS48600	Pipeline transportation	0.946	0.222	0.018	1.342
BS49A00	Postal service, couriers and messengers	0.900	0.598	0.128	1.617
BS49300	Warehousing and storage	0.938	0.612	0.106	1.419
BS51200	Motion picture and sound recording industries	0.717	0.299	0.105	1.467
BS51510	Radio and television broadcasting	0.735	0.452	0.074	1.390
BS51B00	Publishing, pay/specialty services, telecommunications and other information services	0.856	0.288	0.039	1.360
BS52B00	Depository credit intermediation and monetary authorities	0.917	0.471	0.068	1.452
BS52410	Insurance carriers	0.797	0.374	0.055	2.032
BS53110	Lessors of real estate	0.884	0.233	0.043	1.475
BS5311A	Owner-occupied dwellings	0.978	0.025	0.004	1.156
BS53B00	Rental and leasing services and lessors of non-financial intangible assets (except copyrighted works)	0.872	0.398	0.054	1.501
BS5A000	Other finance, insurance and real estate services and management of companies and enterprises	0.853	0.535	0.088	1.936
BS541C0	Legal, accounting and architectural, engineering and related services	0.928	0.553	0.073	1.540
BS541D0	Computer systems design and other professional, scientific and technical services	0.954	0.609	0.081	1.579
BS54180	Advertising, public relations, and related services	0.875	0.528	0.091	1.684
BS56100	Administrative and support services	0.955	0.613	0.119	1.511
BS56200	Waste management and remediation services	0.958	0.358	0.052	1.341
BS61000	Educational services	0.991	0.583	0.211	1.674
BS62000	Health care and social assistance	0.999	0.508	0.107	1.454
BS71000	Arts, entertainment and recreation	0.868	0.561	0.161	1.662

TABLE 9

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS72000	Accommodation and food services	0.810	0.523	0.155	1.520
BS81100	Repair and maintenance	0.905	0.550	0.091	1.502
BS81A00	Personal services and private households	0.782	0.405	0.143	1.284
BS81300	Professional and similar organizations	0.845	0.918	0.165	1.721
NP61000	Educational services	0.979	0.783	0.157	1.405
NP62400	Social assistance	1.009	0.835	0.204	1.459
NP71000	Arts, entertainment and recreation	0.822	0.573	0.164	1.658
NP81310	Religious organizations	0.883	0.652	0.162	1.604
NPA0000	Miscellaneous non-profit institutions serving households	0.865	0.636	0.141	1.643
GS611B0	Educational services (except universities)	1.011	0.808	0.124	1.439
GS61130	Universities	0.988	0.565	0.081	1.345
GS62200	Hospitals	0.964	0.762	0.088	1.588
GS62300	Nursing and residential care facilities	1.063	0.854	0.117	1.522
GS91100	Other federal government services	0.975	0.719	0.079	1.569
GS91200	Other provincial and territorial government services	1.015	0.565	0.082	2.030
GS91300	Other municipal government services	0.911	0.515	0.067	1.480
GS91400	Other aboriginal government services	0.938	0.662	0.034	1.787

Notes: Simple/Total multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change. Simple/Total multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 10: ALBERTA TYPE II MULTIPLIERS (INDUSTRIES)

Closed Model with Safety Net - Direct , Indirect and Induced Impacts

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS11A00	Crop and animal production	2.015	4.162	2.204	2.034
BS11300	Forestry and logging	2.348	1.872	2.275	1.889
BS11400	Fishing, hunting and trapping	1.343	1.718	1.308	1.439
BS11500	Support activities for agriculture and forestry	1.478	1.397	1.326	1.554
BS21100	Oil and gas extraction	1.458	1.975	3.370	0.870
BS21210	Coal mining	1.705	1.371	2.176	1.657
BS21220	Metal ore mining	1.599	3.030	1.500	1.527
BS21230	Non-metallic mineral mining and quarrying	1.466	1.543	1.833	1.492
BS21300	Support activities for mining and oil and gas extraction	1.351	1.284	1.577	1.434
BS22110	Electric power generation, transmission and distribution	1.475	1.386	1.871	1.518
BS221A0	Natural gas distribution, water, sewage and other systems	1.301	1.316	1.463	1.397
BS23A00	Residential building construction	1.728	1.669	1.689	1.629
BS23B00	Non-residential building construction	1.856	1.708	1.870	1.678
BS23C10	Transportation engineering construction	2.427	2.100	1.872	1.865
BS23C20	Oil and gas engineering construction	2.059	1.669	1.817	1.790
BS23C30	Electric power engineering construction	1.451	1.574	2.170	1.503
BS23C40	Communication engineering construction	2.222	1.976	2.237	1.631
BS23C50	Other engineering construction	1.910	1.698	2.142	1.727
BS23D00	Repair construction	1.791	1.576	1.681	1.654
BS23E00	Other activities of the construction industry	1.427	2.309	1.786	1.467
BS31110	Animal food manufacturing	2.536	2.211	3.542	1.784
BS31130	Sugar and confectionery product manufacturing	1.457	1.570	1.637	1.356
BS31140	Fruit and vegetable preserving and specialty food manufacturing	1.891	1.858	2.383	1.562
BS31150	Dairy product manufacturing	3.308	3.426	3.311	2.769
BS31160	Meat product manufacturing	3.295	2.750	3.425	2.401
BS31170	Seafood product preparation and packaging	2.414	2.133	1.184	1.520
BS311A0	Miscellaneous food manufacturing	2.163	2.229	2.302	2.093
BS31211	Soft drink and ice manufacturing	1.916	1.628	2.145	1.646
BS31212	Breweries	1.274	1.487	1.706	1.360
BS3121A	Wineries and distilleries	1.346	1.664	2.059	1.489
BS31220	Tobacco manufacturing	0.000	0.000	0.000	0.000

TABLE 10

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS31A00	Textile and textile product mills	1.473	1.333	1.191	1.391
BS31B00	Clothing and leather and allied product manufacturing	1.634	1.393	1.205	1.488
BS32100	Wood product manufacturing	2.013	1.831	2.203	1.861
BS32210	Pulp, paper and paperboard mills	2.182	1.788	2.514	1.710
BS32220	Converted paper product manufacturing	1.705	1.395	1.567	1.418
BS32300	Printing and related support activities	1.494	1.395	1.427	1.476
BS32400	Petroleum and coal product manufacturing	3.716	6.587	9.789	3.361
BS32510	Basic chemical manufacturing	1.676	2.929	5.587	1.718
BS32530	Pesticide, fertilizer and other agricultural chemical manufacturing	2.232	2.767	3.534	1.938
BS32540	Pharmaceutical and medicine manufacturing	1.860	1.961	2.680	1.616
BS325C0	Miscellaneous chemical product manufacturing	1.627	1.354	1.375	1.465
BS32610	Plastic product manufacturing	1.597	1.524	1.704	1.470
BS32620	Rubber product manufacturing	1.590	1.445	1.630	1.475
BS327A0	Non-metallic mineral product manufacturing (except cement and concrete products)	1.646	1.579	1.649	1.548
BS32730	Cement and concrete product manufacturing	1.672	1.722	1.787	1.620
BS33100	Primary metal manufacturing	2.309	1.740	2.308	1.481
BS33200	Fabricated metal product manufacturing	1.564	1.419	1.605	1.498
BS33300	Machinery manufacturing	1.564	1.430	1.596	1.441
BS33410	Computer and peripheral equipment manufacturing	1.483	1.285	1.446	1.407
BS334B0	Electronic product manufacturing	1.388	1.292	1.601	1.318
BS335A0	Electrical equipment and component manufacturing	1.527	1.354	1.628	1.411
BS33520	Household appliance manufacturing	2.286	1.659	1.855	1.766
BS33610	Motor vehicle manufacturing	1.219	1.527	1.211	1.578
BS33620	Motor vehicle body and trailer manufacturing	1.524	1.372	1.367	1.403
BS33630	Motor vehicle parts manufacturing	1.687	1.406	1.408	1.441
BS33640	Aerospace product and parts manufacturing	1.403	1.258	1.657	1.323
BS33650	Railroad rolling stock manufacturing	1.815	1.591	1.229	1.653
BS33660	Ship and boat building	1.555	1.368	1.231	1.390
BS33690	Other transportation equipment manufacturing	2.007	1.541	1.477	1.529
BS33700	Furniture and related product manufacturing	1.655	1.458	1.394	1.545
BS33900	Miscellaneous manufacturing	1.523	1.400	1.532	1.486

TABLE 10

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS41000	Wholesale trade	1.456	1.374	1.570	1.526
BS4A000	Retail trade	1.535	1.376	1.270	1.599
BS48100	Air transportation	2.090	1.853	1.918	1.778
BS48200	Rail transportation	1.543	1.424	1.743	1.597
BS48300	Water transportation	1.473	1.442	1.617	1.470
BS48400	Truck transportation	1.994	1.789	1.877	1.782
BS48B00	Transit, ground passenger and scenic and sightseeing transportation, taxi and limousine service and support activities for transportation	1.571	1.371	1.333	1.650
BS48600	Pipeline transportation	1.253	1.574	3.534	1.342
BS49A00	Postal service, couriers and messengers	1.565	1.375	1.286	1.617
BS49300	Warehousing and storage	1.328	1.215	1.212	1.419
BS51200	Motion picture and sound recording industries	1.550	1.758	1.304	1.467
BS51510	Radio and television broadcasting	1.417	1.311	1.353	1.390
BS51B00	Publishing, pay/specialty services, telecommunications and other information services	1.306	1.511	1.716	1.360
BS52B00	Depository credit intermediation and monetary authorities	1.370	1.342	1.417	1.452
BS52410	Insurance carriers	2.449	2.609	2.902	2.032
BS53110	Lessors of real estate	1.426	2.038	1.797	1.475
BS5311A	Owner-occupied dwellings	1.121	0.000	0.000	1.156
BS53B00	Rental and leasing services and lessors of non-financial intangible assets (except copyrighted works)	1.445	1.485	1.681	1.501
BS5A000	Other finance, insurance and real estate services and management of companies and enterprises	2.149	1.797	1.764	1.936
BS541C0	Legal, accounting and architectural, engineering and related services	1.476	1.349	1.516	1.540
BS541D0	Computer systems design and other professional, scientific and technical services	1.511	1.336	1.473	1.579
BS54180	Advertising, public relations, and related services	1.775	1.562	1.560	1.684
BS56100	Administrative and support services	1.426	1.283	1.249	1.511
BS56200	Waste management and remediation services	1.241	1.327	1.404	1.341
BS61000	Educational services	1.624	1.465	1.198	1.674
BS62000	Health care and social assistance	1.344	1.308	1.260	1.454
BS71000	Arts, entertainment and recreation	1.729	1.511	1.298	1.662

TABLE 10

"Link 1961" Industry Code	Industry Title	GDP at Basic Prices	Labour Income*	Employment	Output
BS72000	Accommodation and food services	1.516	1.370	1.232	1.520
BS81100	Repair and maintenance	1.439	1.318	1.343	1.502
BS81A00	Personal services and private households	1.466	1.419	1.181	1.541
BS81300	Professional and similar organizations	1.907	1.271	1.258	1.721
NP61000	Educational services	1.305	1.147	1.134	1.405
NP62400	Social assistance	1.343	1.167	1.122	1.459
NP71000	Arts, entertainment and recreation	1.790	1.491	1.274	1.658
NP81310	Religious organizations	1.596	1.324	1.208	1.604
NPA0000	Miscellaneous non-profit institutions serving households	1.689	1.379	1.273	1.643
GS611B0	Educational services (except universities)	1.335	1.179	1.211	1.439
GS61130	Universities	1.246	1.185	1.242	1.345
GS62200	Hospitals	1.523	1.321	1.473	1.588
GS62300	Nursing and residential care facilities	1.380	1.195	1.259	1.522
GS91100	Other federal government services	1.483	1.276	1.494	1.569
GS91200	Other provincial and territorial government services	2.428	2.012	2.131	2.030
GS91300	Other municipal government services	1.324	1.315	1.430	1.480
GS91400	Other aboriginal government services	1.820	1.531	0.000	1.787

Notes: Type I/II multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change.

Type I/II multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 11: ALBERTA TOTAL MULTIPLIERS (COMMODITIES AT BASIC PRICES)

Closed Model with Safety Net - Direct, Indirect and Induced Impacts

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M111B	Grains and other crop products	0.729	0.142	0.034	1.534
M112A	Live animals	0.536	0.292	0.123	2.871
M11D0	Other farm products	0.538	0.292	0.122	2.865
M11E0	Forestry products and services	0.731	0.475	0.058	1.880
M1140	Fish, crustaceans, shellfish and other fishery products	0.708	0.221	0.069	1.616
M1150	Support services related to farming and forestry	0.711	0.375	0.079	2.029
M21B0	Mineral fuels	0.832	0.239	0.024	0.932
M2122	Metal ores and concentrates	0.746	0.205	0.066	1.527
M2123	Non-metallic minerals	0.813	0.313	0.037	1.176
M2130	Mineral support services	0.880	0.533	0.061	1.553
M21A0	Mineral and oil and gas exploration	0.876	0.433	0.042	1.256
M2200	Utilities	0.922	0.441	0.045	1.491
M23A0	Residential construction	0.731	0.386	0.059	1.629
M23B0	Non-residential buildings	0.722	0.409	0.055	1.678
M23C0	Engineering construction	0.761	0.451	0.056	1.774
M23D0	Repair construction services	0.731	0.446	0.063	1.654
M31C0	Food and non-alcoholic beverages	0.562	0.293	0.055	2.224
M312A	Alcoholic beverages and tobacco products	0.794	0.238	0.032	1.398
M31D0	Textile products, clothing, and products of leather and similar materials	0.689	0.442	0.118	1.461
M3210	Wood products	0.776	0.446	0.052	1.850
M3220	Wood pulp, paper and paper products and paper stock	0.591	0.352	0.037	1.675
M3230	Printed products and services	0.761	0.439	0.068	1.478
M3240	Refined petroleum products (except petrochemicals)	0.800	0.116	0.013	3.311
M3250	Chemical products	0.731	0.188	0.022	1.856
M3260	Plastic and rubber products	0.620	0.332	0.042	1.482
M3270	Non-metallic mineral products	0.725	0.348	0.049	1.601
M3310	Primary metallic products	0.426	0.285	0.030	1.492
M3320	Fabricated metallic products	0.678	0.406	0.050	1.495
M3330	Industrial machinery	0.633	0.361	0.043	1.445
M334C	Computers and electronic products	0.622	0.368	0.038	1.342
M3350	Electrical equipment, appliances and components	0.611	0.387	0.042	1.415
M336A	Transportation equipment	0.598	0.373	0.049	1.387
M3363	Motor vehicle parts	0.622	0.416	0.062	1.461
M3370	Furniture and related products	0.686	0.439	0.079	1.542
M3B00	Other manufactured products and custom work	0.737	0.427	0.062	1.520
M4100	Wholesale margins and commissions	0.904	0.495	0.063	1.527

TABLE 11

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M4A00	Retail margins, sales of used goods and commissions	0.946	0.589	0.136	1.594
M4B00	Transportation and related services	0.839	0.427	0.063	1.644
M51D0	Information and cultural services	0.783	0.445	0.068	1.450
M51E0	Published and recorded media products	0.890	0.457	0.071	1.495
M5170	Telecommunications	0.859	0.260	0.036	1.346
M52C0	Depository credit intermediation	0.937	0.479	0.068	1.410
M5F00	Other finance and insurance	0.885	0.488	0.069	1.515
M53D0	Real estate, rental and leasing and rights to non-financial intangible assets	0.882	0.318	0.052	1.501
M53C0	Imputed rental of owner-occupied dwellings	0.978	0.025	0.004	1.156
M541E	Professional services (except software and research and development)	0.925	0.545	0.076	1.557
M5E00	Software	0.920	0.531	0.069	1.468
M5417	Research and development	0.938	0.493	0.063	1.333
M5G00	Administrative and support, head office, waste management and remediation services	0.937	0.545	0.100	1.471
M6100	Education services	1.000	0.645	0.132	1.485
M6200	Health and social assistance services	0.996	0.551	0.108	1.477
M7100	Arts, entertainment and recreation services	0.874	0.558	0.140	1.632
M7200	Accommodation and food services	0.814	0.524	0.154	1.523
M8100	Other services	0.921	0.574	0.113	1.513
M9A00	Sales of other services by Non-Profit Institutions Serving Households	0.864	0.626	0.145	1.641
M9B00	Sales of other government services	0.963	0.663	0.079	1.699
N0000	Services provided by Non-Profit Institutions Serving Households	0.902	0.687	0.159	1.579
G6100	Education services provided by government sector	1.005	0.760	0.116	1.418
G6200	Health services provided by government sector	0.976	0.773	0.091	1.580
G9110	Other federal government services	0.952	0.692	0.081	1.532
G9120	Other provincial and territorial government services	0.939	0.554	0.082	2.103
G9130	Other municipal government services	0.955	0.515	0.067	1.480
G9140	Other aboriginal government services	0.938	0.662	0.034	1.787

Notes: Simple/Total multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change. Simple/Total multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 12: ALBERTA TOTAL MULTIPLIERS (COMMODITIES AT PURCHASER PRICES)

Closed Model with Safety Net - Direct, Indirect and Induced Impacts

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M111B	Grains and other crop products	0.688	0.134	0.033	1.448
M112A	Live animals	0.520	0.284	0.119	2.786
M11D0	Other farm products	0.503	0.273	0.115	2.682
M11E0	Forestry products and services	0.725	0.471	0.058	1.865
M1140	Fish, crustaceans, shellfish and other fishery products	0.580	0.181	0.057	1.323
M1150	Support services related to farming and forestry	0.711	0.375	0.079	2.029
M21B0	Mineral fuels	0.495	0.143	0.014	0.555
M2122	Metal ores and concentrates	0.746	0.205	0.066	1.527
M2123	Non-metallic minerals	0.545	0.210	0.025	0.788
M2130	Mineral support services	0.880	0.533	0.061	1.553
M21A0	Mineral and oil and gas exploration	0.876	0.433	0.042	1.256
M2200	Utilities	0.869	0.415	0.042	1.405
M23A0	Residential construction	0.700	0.370	0.056	1.561
M23B0	Non-residential buildings	0.719	0.407	0.055	1.672
M23C0	Engineering construction	0.761	0.451	0.056	1.774
M23D0	Repair construction services	0.699	0.426	0.060	1.581
M31C0	Food and non-alcoholic beverages	0.406	0.212	0.039	1.607
M312A	Alcoholic beverages and tobacco products	0.506	0.152	0.021	0.890
M31D0	Textile products, clothing, and products of leather and similar materials	0.419	0.269	0.072	0.888
M3210	Wood products	0.530	0.305	0.035	1.264
M3220	Wood pulp, paper and paper products and paper stock	0.554	0.330	0.035	1.569
M3230	Printed products and services	0.426	0.246	0.038	0.827
M3240	Refined petroleum products (except petrochemicals)	0.551	0.080	0.009	2.281
M3250	Chemical products	0.629	0.162	0.019	1.597
M3260	Plastic and rubber products	0.452	0.242	0.031	1.081
M3270	Non-metallic mineral products	0.621	0.298	0.042	1.372
M3310	Primary metallic products	0.424	0.284	0.030	1.485
M3320	Fabricated metallic products	0.584	0.350	0.043	1.289
M3330	Industrial machinery	0.486	0.277	0.033	1.109
M334C	Computers and electronic products	0.460	0.272	0.028	0.992
M3350	Electrical equipment, appliances and components	0.511	0.324	0.035	1.184
M336A	Transportation equipment	0.561	0.350	0.046	1.301
M3363	Motor vehicle parts	0.492	0.329	0.049	1.155
M3370	Furniture and related products	0.427	0.274	0.049	0.961
M3B00	Other manufactured products and custom work	0.584	0.338	0.049	1.205
M4100	Wholesale margins and commissions	0.904	0.495	0.063	1.527

TABLE 12

"Summary" Commodity Code	Commodity Title	GDP at Basic Prices	Labour Income*	Employment	Output
M4A00	Retail margins, sales of used goods and commissions	0.377	0.235	0.054	0.636
M4B00	Transportation and related services	0.737	0.375	0.056	1.444
M51D0	Information and cultural services	0.761	0.433	0.066	1.410
M51E0	Published and recorded media products	0.700	0.359	0.056	1.175
M5170	Telecommunications	0.825	0.250	0.035	1.293
M52C0	Depository credit intermediation	0.933	0.477	0.068	1.403
M5F00	Other finance and insurance	0.885	0.488	0.069	1.515
M53D0	Real estate, rental and leasing and rights to non-financial intangible assets	0.863	0.311	0.051	1.469
M53C0	Imputed rental of owner-occupied dwellings	0.978	0.025	0.004	1.156
M541E	Professional services (except software and research and development)	0.896	0.527	0.073	1.507
M5E00	Software	0.919	0.530	0.069	1.466
M5417	Research and development	0.938	0.493	0.063	1.332
M5G00	Administrative and support, head office, waste management and remediation services	0.919	0.535	0.098	1.442
M6100	Education services	0.990	0.638	0.131	1.471
M6200	Health and social assistance services	0.996	0.551	0.108	1.477
M7100	Arts, entertainment and recreation services	0.842	0.537	0.135	1.572
M7200	Accommodation and food services	0.782	0.503	0.148	1.463
M8100	Other services	0.882	0.550	0.109	1.449
M9A00	Sales of other services by Non-Profit Institutions Serving Households	0.864	0.626	0.145	1.641
M9B00	Sales of other government services	0.963	0.663	0.079	1.699
N0000	Services provided by Non-Profit Institutions Serving Households	0.902	0.687	0.159	1.579
G6100	Education services provided by government sector	1.005	0.760	0.116	1.418
G6200	Health services provided by government sector	0.976	0.773	0.091	1.580
G9110	Other federal government services	0.952	0.692	0.081	1.532
G9120	Other provincial and territorial government services	0.939	0.554	0.082	2.103
G9130	Other municipal government services	0.955	0.515	0.067	1.480
G9140	Other aboriginal government services	0.938	0.662	0.034	1.787

Notes: Simple/Total multipliers for GDP, Labour Income and Output expressed as total impact per dollar of output change. Simple/Total multipliers for employment expressed as total number of jobs required per \$10,000 of output change.

* Please note that all employment impacts are measured in person-years.

* Includes labour income of the unincorporated sector.

TABLE 13: ALBERTA COMMODITY SUPPLY RATIOS

Percent

"Summary" Commodity Code	Commodity Title	Alberta	Rest of Canada	Rest of World	Total Supply
M111B	Grains and other crop products	71.5	11.5	17.1	100.0
M112A	Live animals	71.1	28.1	0.7	100.0
M11D0	Other farm products	96.9	2.9	0.1	100.0
M11E0	Forestry products and services	80.5	18.9	0.6	100.0
M1140	Fish, crustaceans, shellfish and other fishery products	1.9	95.8	2.3	100.0
M1150	Support services related to farming and forestry	88.0	12.0	0.0	100.0
M21B0	Mineral fuels	79.2	11.1	9.7	100.0
M2122	Metal ores and concentrates	0.0	0.0	100.0	100.0
M2123	Non-metallic minerals	61.3	30.5	8.2	100.0
M2130	Mineral support services	32.7	67.3	0.0	100.0
M21A0	Mineral and oil and gas exploration	97.4	2.4	0.2	100.0
M2200	Utilities	95.7	4.2	0.1	100.0
M23A0	Residential construction	100.0	0.0	0.0	100.0
M23B0	Non-residential buildings	100.0	0.0	0.0	100.0
M23C0	Engineering construction	100.0	0.0	0.0	100.0
M23D0	Repair construction services	100.0	0.0	0.0	100.0
M31C0	Food and non-alcoholic beverages	22.9	51.2	25.8	100.0
M312A	Alcoholic beverages and tobacco products	12.1	39.2	48.6	100.0
M31D0	Textile products, clothing, and products of leather and similar materials	1.6	2.0	96.4	100.0
M3210	Wood products	56.4	33.1	10.5	100.0
M3220	Wood pulp, paper and paper products and paper stock	15.1	26.0	59.0	100.0
M3230	Printed products and services	57.5	23.9	18.6	100.0
M3240	Refined petroleum products (except petrochemicals)	70.8	10.1	19.1	100.0
M3250	Chemical products	41.1	17.2	41.6	100.0
M3260	Plastic and rubber products	27.9	30.5	41.6	100.0
M3270	Non-metallic mineral products	50.4	16.1	33.4	100.0
M3310	Primary metallic products	18.5	32.4	49.1	100.0
M3320	Fabricated metallic products	43.7	18.0	38.3	100.0
M3330	Industrial machinery	27.6	10.8	61.6	100.0
M334C	Computers and electronic products	2.8	1.2	96.0	100.0
M3350	Electrical equipment, appliances and components	5.1	20.3	74.7	100.0
M336A	Transportation equipment	1.4	15.9	82.7	100.0
M3363	Motor vehicle parts	1.3	5.6	93.1	100.0
M3370	Furniture and related products	18.1	36.0	45.8	100.0
M3B00	Other manufactured products and custom work	29.5	11.7	58.8	100.0
M4100	Wholesale margins and commissions	64.7	35.0	0.4	100.0

TABLE 13

"Summary" Commodity Code	Commodity Title	Alberta	Rest of Canada	Rest of World	Total Supply
M4A00	Retail margins, sales of used goods and commissions	93.9	5.2	0.9	100.0
M4B00	Transportation and related services	72.1	25.3	2.7	100.0
M51D0	Information and cultural services	49.4	39.0	11.6	100.0
M51E0	Published and recorded media products	32.1	20.5	47.4	100.0
M5170	Telecommunications	76.7	19.0	4.3	100.0
M52C0	Depository credit intermediation	89.2	4.5	6.4	100.0
M5F00	Other finance and insurance	64.5	32.0	3.4	100.0
M53D0	Real estate, rental and leasing and rights to non-financial intangible assets	93.2	2.6	4.2	100.0
M53C0	Imputed rental of owner-occupied dwellings	100.0	0.0	0.0	100.0
M541E	Professional services (except software and research and development)	74.7	17.2	8.1	100.0
M5E00	Software	67.7	16.1	16.2	100.0
M5417	Research and development	98.0	0.1	1.9	100.0
M5G00	Administrative and support, head office, waste management and remediation services	66.6	20.4	13.0	100.0
M6100	Education services	93.2	5.7	1.1	100.0
M6200	Health and social assistance services	97.6	2.4	0.0	100.0
M7100	Arts, entertainment and recreation services	84.7	13.0	2.3	100.0
M7200	Accommodation and food services	89.1	7.7	3.2	100.0
M8100	Other services	93.4	5.8	0.8	100.0
M9A00	Sales of other services by Non-Profit Institutions Serving Households	100.0	0.0	0.0	100.0
M9B00	Sales of other government services	99.7	0.0	0.3	100.0
N0000	Services provided by Non-Profit Institutions Serving Households	100.0	0.0	0.0	100.0
G6100	Education services provided by government sector	100.0	0.0	0.0	100.0
G6200	Health services provided by government sector	100.0	0.0	0.0	100.0
G9110	Other federal government services	100.0	0.0	0.0	100.0
G9120	Other provincial and territorial government services	100.0	0.0	0.0	100.0
G9130	Other municipal government services	100.0	0.0	0.0	100.0
G9140	Other aboriginal government services	100.0	0.0	0.0	100.0

APPENDIX 1:

Industry Concordance: “Link 1961” ↔ “Detailed”

"Link 1961" Industry Title	"Link 1961" Codes	"Detailed" Industry Codes
Crop and animal production	BS11A00	BS111A00, BS111400, BS112A00, BS112B00
Forestry and logging	BS11300	BS113000
Fishing, hunting and trapping	BS11400	BS114000
Support activities for agriculture and forestry	BS11500	BS115A00, BS115300
Oil and gas extraction	BS21100	BS211113, BS211114
Coal mining	BS21210	BS212100
Metal ore mining	BS21220	BS212210, BS212220, BS212230, BS212290
Non-metal mineral mining and quarrying	BS21230	BS212310, BS212320, BS212392, BS21239A, BS212396
Support activities for mining and oil and gas extraction	BS21300	BS21311A, BS21311B
Electric power generation, transmission and distribution	BS22110	BS221100
Natural gas distribution, water, sewage and other systems	BS221A0	BS221200, BS221300
Residential building construction	BS23A00	BS23A000
Non-residential building construction	BS23B00	BS23B000
Transportation engineering construction	BS23C10	BS23C100
Oil and gas engineering construction	BS23C20	BS23C200
Electric power engineering construction	BS23C30	BS23C300
Communication engineering construction	BS23C40	BS23C400
Other engineering construction	BS23C50	BS23C500
Repair construction	BS23D00	BS23D000
Other activities of the construction industry	BS23E00	BS23E000
Animal food manufacturing	BS31110	BS311100
Sugar and confectionery product manufacturing	BS31130	BS311300
Fruit and vegetable preserving and specialty food manufacturing	BS31140	BS311400
Dairy product manufacturing	BS31150	BS311500
Meat product manufacturing	BS31160	BS311600
Seafood product preparation and packaging	BS31170	BS311700
Miscellaneous food manufacturing	BS311A0	BS311200, BS311700, BS311800
Soft drink and ice manufacturing	BS31211	BS312110
Breweries	BS31212	BS312120
Wineries and distilleries	BS3121A	BS3121A0
Tobacco manufacturing	BS31220	BS312200

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"Link 1961" Industry Title	"Link 1961" Codes	"Detailed" Industry Codes
Textile and textile product mills	BS31A00	BS31A000
Clothing and leather and allied product manufacturing	BS31B00	BS31B000
Wood product manufacturing	BS32100	BS321100, BS321200, BS321900
Pulp, paper and paperboard mills	BS32210	BS322100
Converted paper product manufacturing	BS32220	BS322200
Printing and related support activities	BS32300	BS323000
Petroleum and coal products manufacturing	BS32400	BS324110, BS3241A0
Basic chemical manufacturing	BS32510	BS325100
Pesticides, fertilizer and other agricultural chemical manufacturing	BS32530	BS325300
Pharmaceutical and medicine manufacturing	BS32540	BS325400
Miscellaneous chemical product manufacturing	BS325A0	BS325200, BS325500, BS325600, BS325900
Plastic product manufacturing	BS32610	BS326100
Rubber product manufacturing	BS32620	BS326200
Non-metallic mineral product manufacturing (except cement and concrete products)	BS327A0	BS327A00
Cement and concrete product manufacturing	BS32730	BS327300
Primary metal manufacturing	BS33100	BS332100, BS331200, BS331300, BS331400, BS331500
Fabricated metal product manufacturing	BS33200	BS332A00, BS332300, BS332400, BS332500, BS332600, BS332700, BS332800
Machinery manufacturing	BS33300	BS333100, BS333200, BS333300, BS333400, BS333500, BS333600, BS333900
Computer and peripheral equipment manufacturing	BS33410	BS334100
Electronic product manufacturing	BS334B0	BS334200, BS334A00, BS334400
Electrical equipment and component manufacturing	BS335A0	BS335100, BS335300, BS335900
Household appliance manufacturing	BS33520	BS335200
Motor vehicle manufacturing	BS33610	BS336110, BS336120
Motor vehicle body and trailer manufacturing	BS33620	BS336200
Other motor vehicle parts manufacturing	BS33630	BS336310, BS336320, BS336330, BS336340, BS336350, BS336360, BS336370, BS336390
Aerospace product and parts manufacturing	BS33640	BS336400
Railroad rolling stock manufacturing	BS33650	BS336500
Ship and boat building	BS33660	BS336600
Other transportation equipment manufacturing	BS33690	BS336900

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"Link 1961" Industry Title	"Link 1961" Codes	"Detailed" Industry Codes
Furniture and related product manufacturing	BS33700	BS337100, BS337200, BS337900
Miscellaneous manufacturing	BS33900	BS339100, BS339900
Wholesale trade	BS41000	BS411000, BS412000, BS413000, BS414000, BS415000, BS416000, BS417000, BS418000, BS419000
Retail trade	BS4A000	BS441000, BS442000, BS443000, BS444000, BS445000, BS446000, BS447000, BS448000, BS451000, BS452000, BS453000, BS454000
Air transportation	BS48100	BS481000
Rail transportation	BS48200	BS482000
Water transportation	BS48300	BS483000
Truck transportation	BS48400	BS484000
Transit, ground passenger and scenic and sightseeing transportation, taxi and limousine service and support activities for transportation	BS48B00	BS485100, BS48A000, BS485300, BS488000
Pipeline transportation	BS48600	BS486A00, BS486200
Postal service and couriers and messengers	BS49A00	BS491000, BS492000
Warehousing and storage	BS49300	BS493000
Motion picture and sound recording industries	BS51200	BS5121A0, BS512130, BS512200
Radio and television broadcasting	BS51510	BS515100
Publishing, pay/specialty services, telecommunications and other information services	BS51B00	BS511110, BS5111A0, BS511200, BS515200, BS517000, BS518000, BS519000
Depository credit intermediation and monetary authorities	BS52B00	BS521000, BS5221A0, BS522130
Insurance carriers	BS52410	BS524100
Lessors of real estate	BS53110	BS531100
Owner-occupied dwellings	BS5311A	BS5311A0
Rental and leasing services and lessors of non-financial intangible assets (except copyrighted works)	BS53B00	BS532100, BS532A00, BS533000
Other finance, insurance and real estate services and management of companies and enterprises	BS5A000	BS522200, BS524200, BS24A000
Legal, accounting and architectural, engineering and related services	BS541C0	BS541100, BS541200, BS541300, BS541400
Computer systems design and other professional, scientific and technical services	BS541D0	BS541500, BS541600, BS541700, BS541900, BS551113
Advertising, public relations and related services	BS54180	BS541800
Administrative and support services	BS56100	BS561100, BS561A00, BS561300, BS561400, BS561500, BS561600, BS561700

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"Link 1961" Industry Title	"Link 1961" Codes	"Detailed" Industry Codes
Waste management and remediation services	BS56200	BS562000
Educational services	BS61000	BS610000
Health care services and social assistance	BS62000	BS621100, BS621200, BS621A00, BS623000, BS624000
Arts, entertainment and recreation	BS71000	BS71A000, BS713A00, BS713200
Accommodation and food services	BS72000	BS721100, BS721A00, BS722000
Repair and maintenance	BS81100	BS811100, BS811A00
Personal services and private households	BS81A00	BS812A00, BS812200, BS812300, BS814000
Professional and similar organisations	BS81300	BS813000
Repair and maintenance	FC11000	FC110000
Operating supplies	FC12000	FC120000
Office supplies	FC13000	FC130000
Advertising, promotion, meals, entertainment, travel, meeting and convention expenses	FC20000	FC210000, FC220000
Transportation margins	FC30000	FC300000
Non-profit education services	NP61000	NP610000
Non-profit social assistance	NP62400	NP624000
Non-profit arts, entertainment and recreation	NP71000	NP710000
Religious organizations	NP81310	NP813100
Miscellaneous non-profit institutions serving households	NPA0000	NP621000, NP813A00, NP999999
Educational services	GS611B0	GS611100, GS611200, GS611A00
Universities	GS61130	GS611300
Hospitals	GS62200	GS622000
Nursing and residential care facilities	GS62300	GS623000
Other federal government services (including defence)	GS91100	GS911100, GS911A00
Other provincial and territorial government services	GS91200	GS912000
Other municipal government services	GS91300	GS913000
Other aboriginal government services	GS91400	GS914000

APPENDIX 2:

Industry Codes: “Detailed” ↔ North American Industry Classification System (NAICS)

"Detailed" Industry Codes	"Detailed" Industry Title	NAICS 2007 Definition	NAICS 2017 Definition
BS111A00	Crop production (except greenhouse, nursery and floriculture production)	111 excl. 1114	111 excl. 1114
BS111400	Greenhouse, nursery and floriculture production	1114	1114
BS112000	Animal production (except aquaculture)	112 excl. 1125	112
BS112500	Aquaculture	1125	1125
BS113000	Forestry and logging	113	113
BS114000	Fishing, hunting and trapping	114	114
BS115A00	Support activities for crop and animal production	1151, 1152	1151, 1152
BS115300	Support activities for forestry	1153	1153
BS211113	Conventional oil and gas extraction	211113	211113
BS211114	Non-conventional oil extraction	211114	211114
BS212100	Coal mining	2121	2121
BS212210	Iron ore mining	21221	21221
BS212220	Gold and silver ore mining	21222	21222
BS212230	Copper, nickel, lead and zinc ore mining	21223	21223
BS212290	Other metal ore mining	21229	21229
BS212310	Stone mining and quarrying	21231	21231
BS212320	Sand, gravel, clay, and ceramic and refractory minerals mining and quarrying	21232	21232
BS212392	Diamond mining	212392	212392
BS21239A	Other non-metallic mineral mining and quarrying (except diamond and potash)	212394, 212395, 212397, 212398	212394, 212395, 212398, 212397, 212398
BS212396	Potash mining	212396	212396
BS21311A	Support activities for oil and gas extraction	213111, 213118	213111, 213118
BS21311B	Support activities for mining	213117, 213119	213117, 213119
BS221100	Electric power generation, transmission and distribution	2211	2211
BS221200	Natural gas distribution	2212	2212
BS221300	Water, sewage and other systems	2213	2213
BS23A000	Residential building construction	ND	ND
BS23B000	Non-residential building construction	ND	ND
BS23C100	Transportation engineering construction	ND	ND
BS23C200	Oil and gas engineering construction	ND	ND
BS23C300	Electric power engineering construction	ND	ND
BS23C400	Communication engineering construction	ND	ND
BS23C500	Other engineering construction	ND	ND
BS23D000	Repair construction	ND	ND

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"Detailed" Industry Codes	"Detailed" Industry Title	NAICS 2007 Definition	NAICS 2017 Definition
BS23E000	Other activities of the construction industry	ND	ND
BS311100	Animal food manufacturing	3111	3111
BS311200	Grain and oilseed milling	3112	3112
BS311300	Sugar and confectionery product manufacturing	3113	3113
BS311400	Fruit and vegetable preserving and specialty food manufacturing	3114	3114
BS311500	Dairy product manufacturing	3115	3115
BS311600	Meat product manufacturing	3116	3116
BS311700	Seafood product preparation and packaging	3117	3117
BS311800	Bakeries and tortilla manufacturing	3118	3118
BS311900	Other food manufacturing	3119	3119
BS312110	Soft drink and ice manufacturing	31211	31211
BS312120	Breweries	31212	31212
BS3121A0	Wineries and distilleries	31213, 31214	31213, 31214
BS312200	Tobacco manufacturing	3122	3122
BS31A000	Textile and textile product mills	313, 314	313, 314
BS31B000	Clothing and leather and allied product manufacturing	315, 316	315, 316
BS321100	Sawmills and wood preservation	3211	3211
BS321200	Veneer, plywood and engineered wood product manufacturing	3212	3212
BS321900	Other wood product manufacturing	3219	3219
BS322100	Pulp, paper and paperboard mills	3221	3221
BS322200	Converted paper product manufacturing	3222	3222
BS323000	Printing and related support activities	323	323
BS324110	Petroleum refineries	32411	32411
BS3241A0	Petroleum and coal products manufacturing (except petroleum refineries)	324 excl. 32411	324 excl. 32411
BS325100	Basic chemical manufacturing	3251	3251
BS325200	Resin, synthetic rubber, and artificial and synthetic fibres and filaments manufacturing	3252	3252
BS325300	Pesticides, fertilizer and other agricultural chemical manufacturing	3253	3253
BS325400	Pharmaceutical and medicine manufacturing	3254	3254
BS325500	Paint, coating and adhesive manufacturing	3255	3255
BS325600	Soap, cleaning compound and toilet preparation manufacturing	3256	3256
BS325900	Other chemical product manufacturing	3259	3259

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"Detailed" Industry Codes	"Detailed" Industry Title	NAICS 2007 Definition	NAICS 2017 Definition
BS326100	Plastic product manufacturing	3261	3261
BS326200	Rubber product manufacturing	3262	3262
BS327A00	Non-metallic mineral product manufacturing (except cement and concrete products)	327 excl. 3273	327 excl. 3273
BS327300	Cement and concrete product manufacturing	3273	3273
BS331100	Iron and steel mills and ferro-alloy manufacturing	3311	3311
BS331200	Steel product manufacturing from purchased steel	3312	3312
BS331300	Alumina and aluminum production and processing	3313	3313
BS331400	Non-ferrous metal (except aluminum) production and processing	3314	3314
BS331500	Foundries	3315	3315
BS332100	Forging and stamping	3321	3321
BS332A00	Cutlery, hand tools and other fabricated metal product manufacturing	3322, 3329	3322, 3329
BS332300	Architectural and structural metals manufacturing	3323	3323
BS332400	Boiler, tank and shipping container manufacturing	3324	3324
BS332500	Hardware manufacturing	3325	3325
BS332600	Spring and wire product manufacturing	3326	3326
BS332700	Machine shops, turned product and screw, nut and bolt manufacturing	3327	3327
BS332800	Coating, engraving, heat treating and allied activities	3328	3328
BS333100	Agriculture, construction and mining machinery manufacturing	3331	3331
BS333200	Industrial machinery manufacturing	3332	3332
BS333300	Commercial and service industry machinery manufacturing	3333	3333
BS333400	Ventilation, heating, air-conditioning and commercial refrigeration equipment manufacturing	3334	3334
BS333500	Metalworking machinery manufacturing	3335	3335
BS333600	Engine, turbine and power transmission equipment manufacturing	3336	3336
BS333900	Other general-purpose machinery manufacturing	3339	3339
BS334100	Computer and peripheral equipment manufacturing	3341	3341
BS334200	Communications equipment manufacturing	3342	3342
BS334A00	Other electronic product manufacturing	3343, 3345, 3346	3343, 3345, 3346
BS334400	Semiconductor and other electronic component manufacturing	3344	3344
BS335100	Electric lighting equipment manufacturing	3351	3351
BS335200	Household appliance manufacturing	3352	3352
BS335300	Electrical equipment manufacturing	3353	3353
BS335900	Other electrical equipment and component manufacturing	3359	3359
BS336110	Automobile and light-duty motor vehicle manufacturing	33611	33611

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"Detailed" Industry Codes	"Detailed" Industry Title	NAICS 2007 Definition	NAICS 2017 Definition
BS336120	Heavy-duty truck manufacturing	33612	33612
BS336200	Motor vehicle body and trailer manufacturing	3362	3362
BS336310	Motor vehicle gasoline engine and engine parts manufacturing	33631	33631
BS336320	Motor vehicle electrical and electronic equipment manufacturing	33632	33632
BS336330	Motor vehicle steering and suspension components (except spring) manufacturing	33633	33633
BS336340	Motor vehicle brake system manufacturing	33634	33634
BS336350	Motor vehicle transmission and power train parts manufacturing	33635	33635
BS336360	Motor vehicle seating and interior trim manufacturing	33636	33636
BS336370	Motor vehicle metal stamping manufacturing	33637	33637
BS336390	Other motor vehicle parts manufacturing	33639	33639
BS336400	Aerospace product and parts manufacturing	3364	3364
BS336500	Railroad rolling stock manufacturing	3365	3365
BS336600	Ship and boat building	3366	3366
BS336900	Other transportation equipment manufacturing	3369	3369
BS337100	Household and institutional furniture and kitchen cabinet manufacturing	3371	3371
BS337200	Office furniture (including fixtures) manufacturing	3372	3372
BS337900	Other furniture-related product manufacturing	3379	3379
BS339100	Medical equipment and supplies manufacturing	3391	3391
BS339900	Other miscellaneous manufacturing	3399	3399
BS411000	Farm product wholesaler-distributors	411	411
BS412000	Petroleum product wholesaler-distributors	412	412
BS413000	Food, beverage and tobacco wholesaler-distributors	413	413
BS414000	Personal and household goods wholesaler-distributors	414	414
BS415000	Motor vehicle and parts wholesaler-distributors	415	415
BS416000	Building materials and supplies wholesaler-distributors	416	416
BS417000	Machinery, equipment and supplies wholesaler-distributors	417	417
BS418000	Miscellaneous wholesaler-distributors	418	418
BS419000	Wholesale electronic Purchasers and agents and brokers	419	419
BS441000	Motor vehicle parts dealers	441	441
BS442000	Furniture and home furnishings stores	442	442
BS443000	Electronics and appliance stores	443	443
BS444000	Building materials and garden equipment and supplies dealers	444	444
BS445000	Food and beverage stores	445	445
BS446000	Health and personal care stores	446	446
BS447000	Gasoline stations	447	447
BS448000	Clothing and clothing accessories stores	448	448
BS451000	Sporting goods, hobby, book and musical instruments stores	451	451

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"Detailed" Industry Codes	"Detailed" Industry Title	NAICS 2007 Definition	NAICS 2017 Definition
BS452000	General merchandise stores	452	452
BS453000	Miscellaneous stores retailers	453	453
BS454000	Non-store retailers	454	454
BS481000	Air transportation	481	481
BS482000	Rail transportation	482	482
BS483000	Water transportation	483	483
BS484000	Truck transportation	484	484
BS485100	Urban transit systems	4851	4851
BS48A000	Other transit and ground passenger transportation and scenic and sightseeing transportation	4852, 4854, 4855, 4859, 487	4852, 4854, 4855, 4859, 487
BS485300	Taxi and limousine service	4853	4853
BS486A00	Crude oil and other pipeline transportation	4861, 4869	4861, 4869
BS486200	Pipeline transportation of natural gas	4862	4862
BS488000	Support activities for transportation	488	488
BS491000	Postal service	491	491
BS492000	Couriers and messengers	492	492
BS493000	Warehousing and storage	493	493
BS511110	Newspaper publishers	51111	51111
BS5111A0	Periodical, book and directory publishers	51112, 51113, 51114, 51119	51112, 51113, 51114, 51119
BS511200	Software publishers	5112	5112
BS5121A0	Motion picture and video industries (except exhibition)	51211, 51212, 51219	51211, 51212, 51219
BS512130	Motion picture and video exhibition	51213	51213
BS512200	Sound recording industries	5122	5122
BS515100	Radio and television broadcasting	5151	5151
BS515200	Pay and specialty television	5152	5152
BS517000	Telecommunications	517	517
BS518000	Data processing, hosting, and related services	518	518
BS519000	Other information services	519	519
BS521000	Monetary authorities - central bank	521	521
BS5221A0	Banking and other depository credit intermediation	52211, 52219	52211, 52219
BS522130	Local credit unions	52213	52213
BS522200	Non-depository credit intermediation	5222	5222
BS522300	Activities related to credit intermediation	5223	5223
BS52A000	Financial investment services, funds and other financial vehicles	523, 526	523, 526
BS524100	Insurance carriers	5241	5241
BS524200	Agencies, brokerages and other insurance related activities	5242	5242

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"Detailed" Industry Codes	"Detailed" Industry Title	NAICS 2007 Definition	NAICS 2017 Definition
BS531100	Lessors of real estate	5311	5311
BS531A00	Offices of real estate agents and brokers and activities related to real estate	5312, 5313	5312, 5313
BS5311A0	Owner-occupied dwellings	ND	ND
BS532100	Automotive equipment rental and leasing	5321	5321
BS532A00	Rental and leasing services (except automotive equipment)	532, excl. 5321	532, excl. 5321
BS533000	Lessors of non-financial intangible assets (except copyrighted works)	533	533
BS541100	Legal services	5411	5411
BS541200	Accounting, tax preparation, bookkeeping and payroll services	5412	5412
BS541300	Architectural, engineering and related services	5413	5413
BS541400	Specialized design services	5414	5414
BS541500	Computer systems design and related services	5415	5415
BS541600	Management, scientific and technical consulting services	5416	5416
BS541700	Scientific research and development services	5417	5417
BS541800	Advertising, public relations, and related services	5418	5418
BS541900	Other professional, scientific and technical services	5419	5419
BS551113	Holding companies	NA	NA
BS561100	Office administrative services	5611	5611
BS561A00	Facilities and other support services	5612, 5619	5612, 5619
BS561300	Employment services	5613	5613
BS561400	Business support services	5614	5614
BS561500	Travel arrangement and reservation services	5615	5615
BS561600	Investigation and security services	5616	5616
BS561700	Services to buildings and dwellings	5617	5617
BS562000	Waste management and remediation services	562	562
BS610000	Educational services	61	61
BS621100	Offices of physicians	6211	6211
BS621200	Offices of dentists	6212	6212
BS621A00	Miscellaneous ambulatory health care services	6213, 6214, 6215, 6216, 6219	6213, 6214, 6215, 6216, 6219
BS623000	Nursing and residential care facilities	623	623
BS624000	Social assistance	624	624
BS71A000	Performing arts, spectator sports and related industries, and heritage institutions	711, 712	711, 712
BS713A00	Amusement and recreation industries	7131, 7139	7131, 7139
BS713200	Gambling industries	7132	7132

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"Detailed" Industry Codes	"Detailed" Industry Title	NAICS 2007 Definition	NAICS 2017 Definition
BS721100	Traveller accommodation	7211	7211
BS721A00	RV (recreational vehicle) parks, recreational camps, and rooming and boarding houses	7212, 7213	7212, 7213
BS722000	Food services and drinking places	722	722
BS811100	Automotive repair and maintenance	8111	8111
BS811A00	Repair and maintenance (except automotive)	8112, 8113, 8114	8112, 8113, 8114
BS812A00	Personal care services and other personal services	8121, 8129	8121, 8124
BS812200	Funeral services	8122	8122
BS812300	Dry cleaning and laundry services	8123	8123
BS813000	Professional and similar organizations	813	813
BS814000	Private households	814	814
FC110000	Repair and maintenance	811	811
FC120000	Operating supplies	Fictive	Fictive
FC130000	Office supplies	Fictive	Fictive
FC210000	Advertising, promotion, meals and entertainment	Fictive	Fictive
FC220000	Travel, meeting and convention expenses	Fictive	Fictive
FC300000	Transportation margins	Fictive	Fictive
NP610000	Educational services	61	61
NP621000	Ambulatory health care services	621	621
NP624000	Social assistance	624	624
NP710000	Arts, entertainment and recreation	71	71
NP813100	Religious organizations	8131	8131
NP813A00	Grant-making, civic, and professional and similar organizations	813 excl. 8131	813 excl. 8131
NP999999	Other non-profit institutions serving households	NA	NA
GS611100	Elementary and secondary schools	6111	6111
GS611200	Community colleges and C.E.G.E.P.s	6112	6112
GS611300	Universities	6113	6113
GS611A00	Other educational services	6114-6117	6114-6117
GS622000	Hospitals	622	622
GS623000	Nursing and residential care facilities	623	623
GS911100	Defence services	9111	9111
GS911A00	Other federal government services	911 excl. 9111	911 excl. 9111
GS912000	Other provincial and territorial government services	912	912
GS913000	Other municipal government services	913	913
GS914000	Other aboriginal government services	914	914

Notes: NA: Not Available
 ND: Not Described in NAICS