



Rio Tinto

Economic Contribution Analysis of Canadian Operations

November 2019

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The estimates presented within this report have been provided to Rio Tinto Canada Management Inc. for the purpose of analyzing the economic contributions of Rio Tinto's operations in Canada, Quebec, Newfoundland and Labrador, British Columbia, and the Northwest Territories.

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1. The reference to "Rio Tinto" in this section refers to all of Rio Tinto's operating entities in Canada.

Introduction and Summary



Purpose of the Study

Within the context described, Deloitte LLP (“Deloitte”) has been engaged by Rio Tinto Canada Management Inc. to assess the economic contributions of Rio Tinto’s operations in Canada, Quebec, Newfoundland and Labrador, British Columbia, and the Northwest Territories over 2018 (i.e., the last year of operation for which data was available). The assessment of economic contributions includes activities performed by Rio Tinto¹ in Canada with respect to the following businesses: aluminum, iron ore, diamond, and ilmenite and titanium. Rio Tinto’s activities in Canada include mining, transformation, exploration, managing a global corporate hub, and related operations.

To undertake this analysis, we carried out the following activities:

- Identified the economic contributions that are likely to occur from Rio Tinto’s expenditures in Canada, Quebec, Newfoundland and Labrador, British Columbia, and the Northwest Territories;
- Analyzed the expenditure data available from Rio Tinto to enable the estimation of economic contributions; and
- Executed a set of simulations to estimate the economic contributions of Rio Tinto’s expenditures to GDP, employment, labour income, and government revenue for the regions under analysis at the direct and indirect levels.²

1. Hereafter, the reference to “Rio Tinto” in this study refers to all of Rio Tinto’s operating entities in Canada.

2. This report does not estimate the induced level of economic contributions of Rio Tinto’s expenditures to the regions under analysis. Induced level contributions are general income effects associated with the spending of salaries and wages – earned as a result of business operations – on consumption.



Definitions of Economic Contributions

Direct Contributions	Direct economic contributions represent the economic value added directly associated with capital investments and associated operations. For example, they include the employment and income of employees and contractors directly involved in business operations, as well as the associated product, production and income taxes paid.
Indirect Contributions	Indirect economic contributions represent the economic value added resulting from the demand for materials and services that business operations generate in supplier industries. They represent, for example, economic activity generated in the manufacturing, wholesale trade, transportation and professional service sectors as a result of demand for materials and services generated by business operations.
Gross Domestic Product (GDP)	Gross Domestic Product ("GDP") is the "total unduplicated value of goods and services produced in the economic territory of a country or region during a given period". ¹ GDP includes household income from current productive activities (wages, salaries and unincorporated business income) as well as profits and other income earned by corporations. In the context of our study, GDP serves as a measure of the total economic value-added resulting from the capital investments and associated operations.
Employment	<p>This study measures employment contributions in terms of full-year equivalent positions for ongoing employment (i.e., employment contribution associated with annual expenditures). Full-year equivalent positions are counted according to their duration and not according to whether they were employed on a full-time or part-time basis. That is, two part-time employees would be counted as one full-year equivalent if the total time they spent on the job adds up to one year. This approach is consistent with standard statistical terminology.</p> <p>At the direct level, Rio Tinto's contributions to employment include its direct employees and Category 1 employees (hereafter referred together as "directly employed employees"). Category 1 employees include relief contractors (i.e., contractors employed to fill authorised positions for a variable period of time expected to be one month or more) and project contractors (i.e., contractors employed to fill authorised positions for a specific project). At the indirect level, Rio Tinto's contributions to employment include the creation and maintenance of jobs arising from the demand for materials and services that its activities generate in supplier industries.</p>
Labour Income	<p>Labour income represents the total earnings of employees (including employees of suppliers to the projects), consisting of wages and salaries as well as supplementary labour income (such as employer's contributions to pension funds, employee welfare funds, the Unemployment Insurance Fund and Workers Compensation Fund).</p> <p>At the direct level, Rio Tinto's contributions to labour income include the wages, salaries, and supplementary labour income paid to its directly employed employees. At the indirect level, Rio Tinto's contributions to labour income include the wages, salaries, and supplementary labour income associated with the jobs created and maintained by the demand for materials and services that Rio Tinto's activities generate in supplier industries.</p>
Government Revenue	<p>This study measures all components of government revenue (across federal, provincial/territorial, and municipal levels) for the provinces/territories under analysis.</p> <p>At the direct level, Rio Tinto's contributions to government revenue include: corporate income taxes; royalties; fees, dividends and other extractive related payments; employee and employer payroll taxes; other taxes and payments; and Deloitte's estimation of taxes on products (e.g., indirect taxes). At the indirect level, Rio Tinto's contributions to government revenue include the product, production, and income taxes associated with the demand for materials and services that its activities generate in supplier industries (estimated using Rio Tinto's expenditures).</p>

Note: For more technical definitions, please refer to: Statistics Canada - Industry Accounts Division, System of National Accounts, 2009.

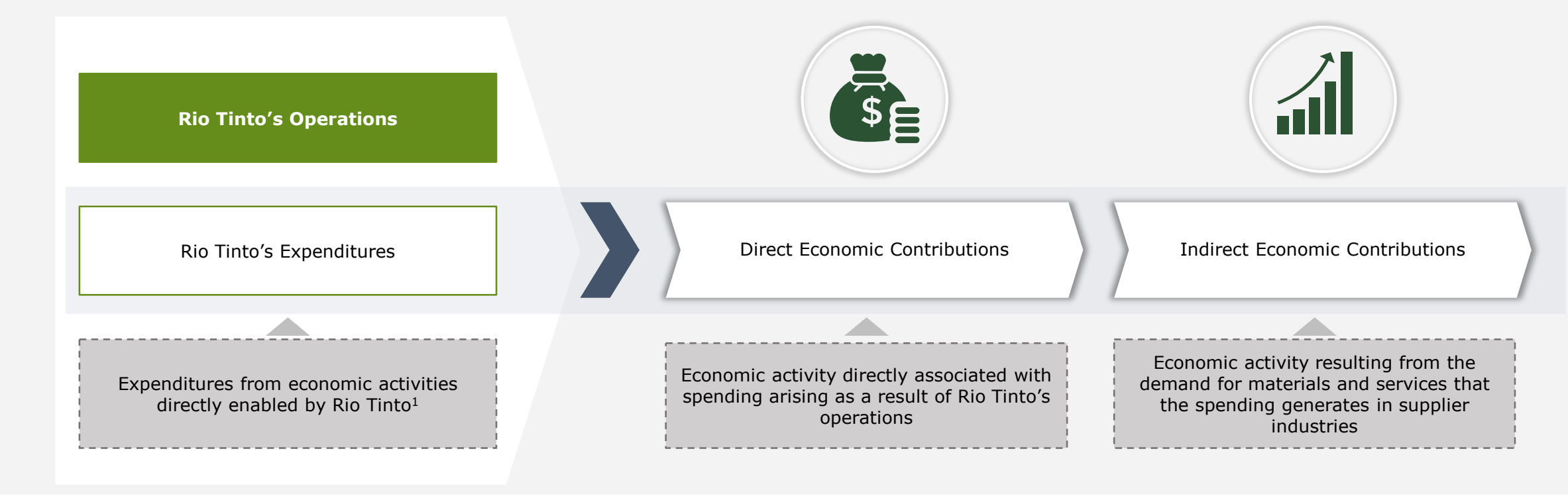
1. Statistics Canada – National Income and Expenditure Accounts (SC 13-001-XPB).

Economic Modelling Approach

To assess the economic contributions of Rio Tinto’s operations to the economies of Canada, Quebec, Newfoundland and Labrador, British Columbia, and the Northwest Territories, an input-output methodology based on Statistics Canada’s provincial/territorial input-output tables and industry multipliers is employed. This study estimates two levels of contributions:

- **Direct contributions** associated with Rio Tinto’s expenditures, government payments and taxes, and directly employed employees; and
- **Indirect contributions** resulting from activities of businesses supplying goods and services to industries associated with the direct expenditures.

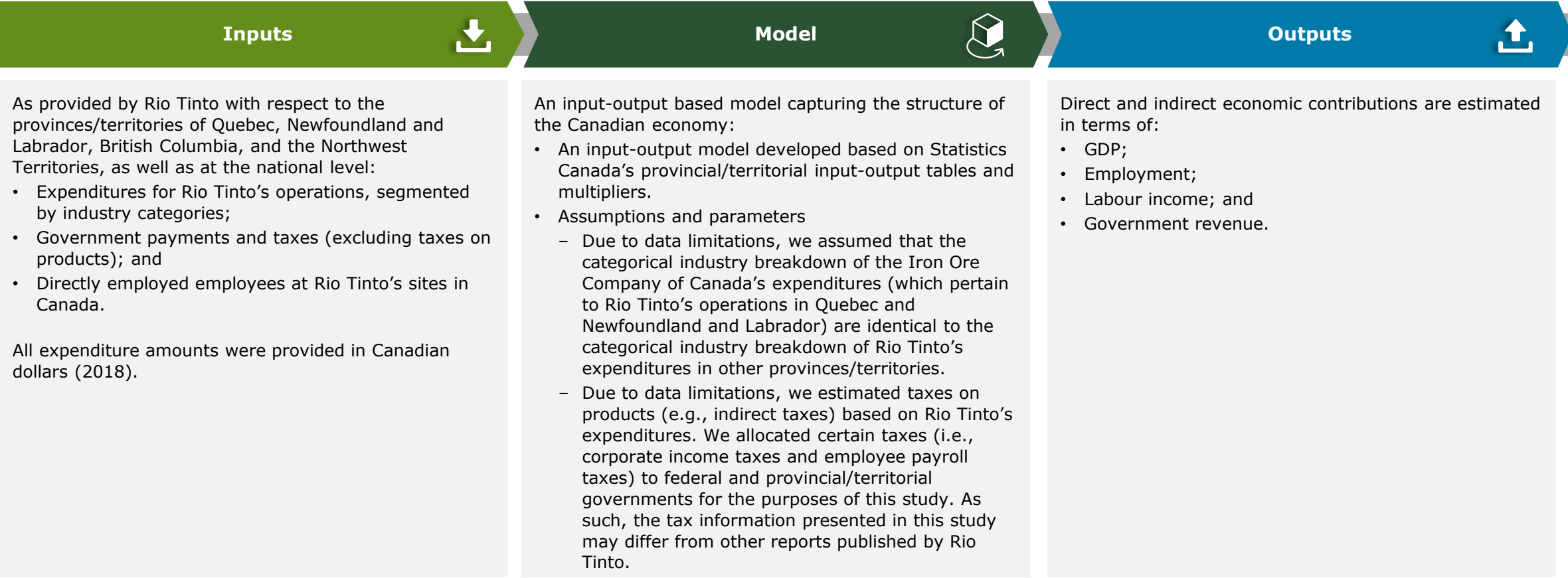
These levels of contributions are illustrated in the following figure.



1. This study only considers expenditures from economic activities directly enabled by Rio Tinto, and as such, operational expenditures associated with businesses in which Rio Tinto has a minority stake has not been considered in this study.

Economic Modelling Approach (continued)

The economic contributions of each of the expenditure categories arising from Rio Tinto’s operations is quantified using an input-output based quantitative model.



Economic Modelling Approach (continued)

Introduction to Input-Output Modelling

Input-output models are used to simulate the economic contribution of an expenditure on a given basket of goods and services or the output of one of several industries. Input-output analysis uses data on the flow of goods and services among various sectors of the economy, and attempts to model how an expenditure, increase in demand, or investment ripples through a region's economy. This is done by mapping the production of products and service by each industries, and identifying the intermediate inputs used in the production of each final product or service used by consumers, sold as an export, or purchased by government. The model can then aggregate all of the employment and value added impacts generated in the supply chain as commodities are produced. Input-output models also consider the role of imports, which tie the supply chain to the global economy. This data is combined into a single model of the economy which can be solved to determine how much additional production is generated by a change in the demand for one or more commodities or by a change in the output of an industry.

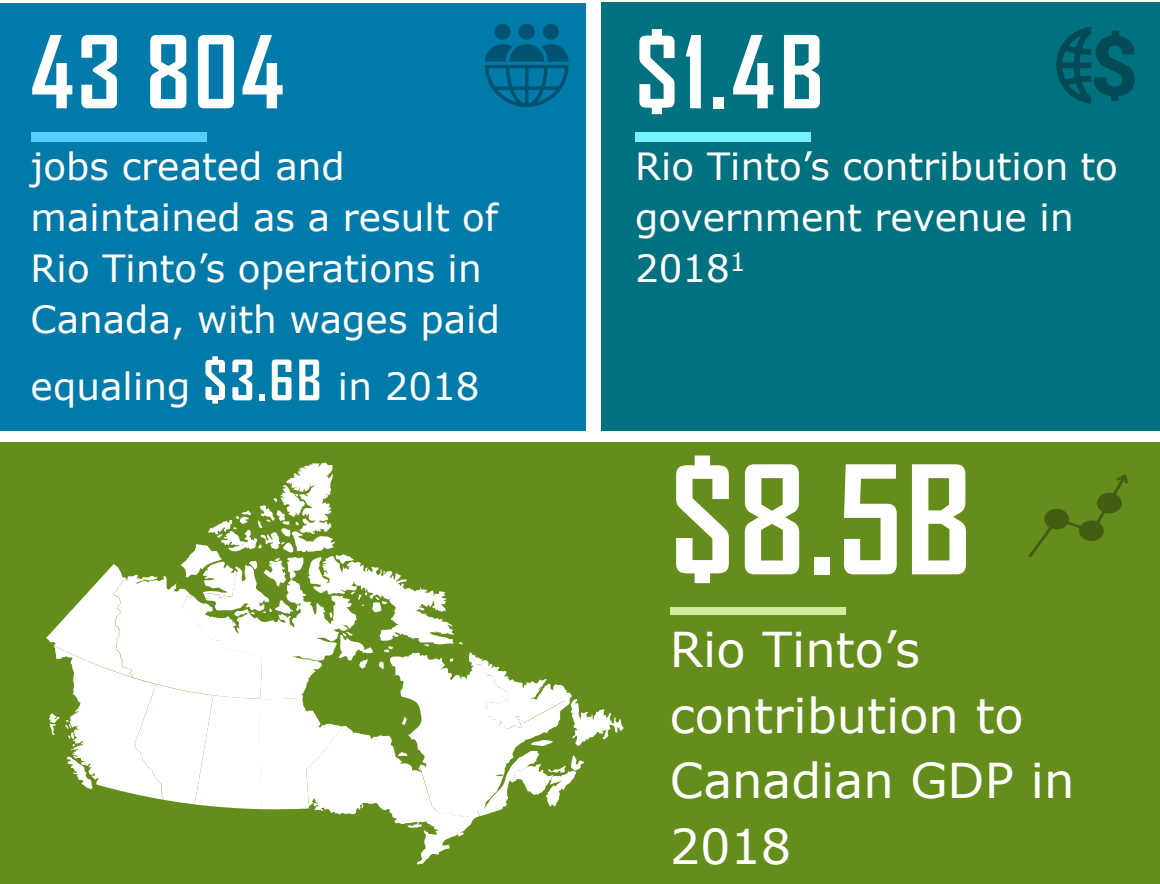
Assumptions and Limitations of the Model

The input-output model is subject to a number of general assumptions and limitations. The model reflects a simplified macroeconomic structure, and does not include some variables of interest for macroeconomic analysis such as interest rates, unemployment rates, or income tax rates. The model assumes that the Canadian economy has the capacity to produce the goods and services stimulated by the economic shock. The model is not able to forecast situations in which demand may outpace the capacity to produce the required goods and services, however it does estimate the portion of goods and services sourced from other provinces/territories in Canada and internationally. The model makes a basic underlying assumption that the number of jobs created maintains a linear relationship with short-term gross output. This approach can be considered sound if the value and quantity measures are for the same year and the analysis is focusing on the structure of the economy for that same year. When used for projecting beyond the input-output model year, the relationship between values and quantities may be impacted by price variations.

Economic Contributions at a Glance

Rio Tinto's Direct and Indirect Economic Contributions in 2018

Rio Tinto's Canadian operations "move the needle" when it comes to the provincial/territorial and national economies: in all provinces/territories where it operates, Rio Tinto accounted for a significant share of job creation and GDP. Rio Tinto contributed to the creation and maintenance of 43 804 jobs, for which the average salary was about 60% higher than the national average salary. Rio Tinto also contributed to \$8.5B of economic activity in terms of GDP and \$1.4B of government revenue.



ALUMINUM
IRON ORE
TITANIUM

Rio Tinto's operations in **Quebec** contributed \$5.3B in GDP and 29 117 jobs to the province.

Equivalent to **1.3% of GDP** and **0.8% of total employment** in Quebec.²



IRON ORE

Rio Tinto's operations in **Newfoundland and Labrador** contributed \$1.3B in GDP and 6 044 jobs to the province.

Equivalent to **4.1% of GDP** and **2.8% of total employment** in Newfoundland and Labrador.



ALUMINUM

Rio Tinto's operations in **British Columbia** contributed \$0.7B in GDP and 4 855 jobs to the province.

Equivalent to **0.2% of GDP** and **0.2% of total employment** in British Columbia.



DIAMONDS

Rio Tinto's operations in the **Northwest Territories** contributed \$0.6B in GDP and 2 725 jobs to the territory.

Equivalent to **12.6% of GDP** and **10.2% of total employment** in the Northwest Territories.



1. At the direct level, Rio Tinto's contributions to government revenue include: corporate income taxes; royalties; fees, dividends and other extractive related payments; employee and employer payroll taxes; other taxes and payments; and estimated indirect taxes. At the indirect level, Rio Tinto's contributions to government revenue include the product, production, and income taxes associated with the demand for materials and services that its activities generate in supplier industries (estimated using Rio Tinto's expenditures).

2. The average salaries used for comparison purposes were sourced from: Statistics Canada - Table 14-10-0204-01 Average Weekly Earnings By Industry, Annual. The total GDP for provinces/territories used for comparison purposes were sourced from: Statistics Canada - Table 36-10-0222-01 Gross Domestic Product, Expenditure-Based, Annual.

Review of Rio Tinto in Canada



Business Overview

Rio Tinto is one of the world's largest mining and metals companies with operations in 35 countries across six continents. In Canada, Rio Tinto has approximately 15 500 people (around 10 500 directly employed and the remainder employed by contractors) that work across more than 35 locations in the country. Rio Tinto has aluminum transformation operations across Quebec and British Columbia, a diamond mining operation in the Northwest Territories, iron ore mining and transformation operations in Newfoundland and Labrador, ilmenite/titanium mining and transformation operations in Quebec, and also performs corporate support and exploration activities throughout the country. Additionally, Canada is the birthplace of notable Rio Tinto innovations, including the world's first sub-Arctic wind farm (at Diavik), the first low-carbon aluminum (RenewAL), and ELYSIS, our joint venture with Alcoa, to develop technology to allow us to produce zero-carbon aluminum. In 2018, Rio Tinto incurred total expenditures of approximately \$5.9B (\$4.4B paid to suppliers and \$1.5B paid to directly employed employees) to support its activities in Canada.

The major businesses of Rio Tinto are aluminum, iron ore, diamond, and ilmenite and titanium, as described below.

Aluminum

Rio Tinto is a global leader in the aluminum business, one of the world's most widely used metals, with over 110 years of experience and expertise in Canada. Headquartered in Montreal, Rio Tinto Aluminium ("RTA") oversees its large-scale alumina refinery and some of the world's most technically advanced aluminum smelters located across Quebec and British Columbia. With its hydropower generation capacity and its AP technology, RTA produces among the lowest carbon footprint aluminum in the world. RTA's Arvida Research & Development Centre and R&D teams in Quebec support the entire Rio Tinto aluminum smelter network throughout the world. Rio Tinto also offers independently certified responsibly produced aluminum from all of its Canadian operations, with its Aluminum Stewardship Initiative ("ASI") Chain of Custody certification. Rio Tinto operates a network of seven hydropower plants to fulfill the electricity requirements of its aluminum operations, as well as port facilities in Kitimat and the Saguenay, along with the Roberval Saguenay Railway - a 142 kilometre railway system that serve its local plants in the Saguenay Lac-St Jean region.

Iron Ore

Rio Tinto's iron ore business in Canada operates under the subsidiary Iron Ore Company of Canada ("IOC"). IOC is a leading producer of iron ore concentrate and iron ore pellets that serves customers worldwide, featuring the capacity to produce approximately 23M tonnes of iron ore concentrate per year. The company operates a mine, a concentrator, and a pelletizing plant in Labrador City, Newfoundland and Labrador, as well as port facilities in Sept-Îles, Quebec. It also operates a 418 kilometre railroad that links the mine to the port. IOC is operated by Rio Tinto and is a joint venture between Rio Tinto (58.7% ownership), Mitsubishi Corporation (26.2% ownership), and Labrador Iron Ore Royalty Income Corporation (15.1% ownership).

Note: The business descriptions presented on this slide are sourced from materials provided by Rio Tinto to Deloitte.



Business Overview (continued)

Diamond

Rio Tinto's diamond business in Canada operates under the subsidiary Diavik Diamond Mine (2012) Inc. Located 300 kilometres northeast of Yellowknife, Northwest Territories, Rio Tinto's Diavik Diamond Mine ("Diavik") began production in 2003 and became an integrated surface and underground mining operation in 2012. The mine produces 6-7M carats of diamonds annually, which are predominantly gem-quality diamonds destined for high-end jewelry in all major consumer markets around the world. Diavik is operated by Rio Tinto and is owned by a joint venture between Rio Tinto (60% ownership) and Dominion Diamond Corporation (40% ownership).

Ilmenite and Titanium

Rio Tinto's ilmenite and titanium business operates under the subsidiary Rio Tinto Fer et Titane ("RTFT"), which is operated and fully-owned by Rio Tinto, with more than 65 years of operations in Quebec. Its headquarters in Montreal serve as the global headquarters for the ilmenite and titanium operations. RTFT has pioneered the process of removing iron from ilmenite, and is one of the leading manufacturers of raw materials for the titanium dioxide industry and a producer of high quality cast iron, steel and metal powders. RTFT operates a mining facility at Havre-Saint-Pierre, where its open-pit mine sits on the largest massive rock ilmenite deposit in the world, and a metallurgical complex in Sorel-Tracy, where the ore is processed to produce titanium dioxide feedstock and iron, or transported to plants for steel and metal powders for further processing. To support its local plants, RTFT operates port facilities in Havre St-Pierre and Sorel-Tracy, as well as a rail connection in Havre St-Pierre.

Other notable activities performed by Rio Tinto include exploration and evaluation, as well as managing a global corporate hub in Montreal that acts as a Centre of Excellence for processing activities.

Exploration

Canada is an important part of Rio Tinto Exploration's global portfolio of high quality exploration projects, with active programs in several provinces/territories, and across several minerals, including iron, copper, nickel, titanium, and diamonds. It is currently exploring and evaluating eleven mineral deposits across Canada, reflecting both greenfield and brownfield projects. A recent example of an advanced-stage brownfield project is Rio Tinto's evaluation of a diamond deposit in the Fort à la Corne forest of central Saskatchewan.

Global Corporate Hub

Rio Tinto's Montreal office, the headquarters of its industry-leading aluminum business, is a global hub that supports the Rio Tinto Group's global operations. It is also designated as the Centre of Excellence for processing activities.

Note: The business descriptions presented on this slide are sourced from materials provided by Rio Tinto to Deloitte.

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Business Overview (continued)

Aluminum

Atlantic operations

- 1 Saguenay-Lac-Saint-Jean Operations
 - Alma - Aluminum smelter
 - AP60 - Aluminum smelter
 - Laterrière - Aluminum smelter
 - Grande-Baie - Aluminum smelter
 - Small Ingots Saguenay - Casting centre
 - Aluminum Operations Centre
 - Arvida - Aluminum smelter
 - Vaudreuil - Alumina refinery
 - Spent Potlining Treatment Plant
 - Railroad Facilities
 - Port Facilities
 - Strathcona - Production support facility

- 1 Power division
 - Chute-a-Caron - Power station
 - Chute-a-la-Savane - Power station
 - Chute-des-Passes - Power station
 - Isle-Maligne - Power station
 - Shipshaw - Power station
 - Chute-du-Diable - Power station

- 4 Arvida Research and Development Centre

- 2 ABI (Becancour) (Rio Tinto: 25.1%)
 - Aluminum smelter

- 3 Alouette (Rio Tinto: 40%)
 - Aluminum smelter

- 4 Kitimat - Aluminum smelter

- 4 Kemano - Power station

Rio Tinto Corporate Support Offices

- 1 Vancouver - Exploration
- 2 Ottawa - Corporate Relations
- 3 Montreal hub - CoE for Processing

Copper & Diamonds

- 1 Diavik (60%) - Diamond operating site

Energy & Minerals

- 1 Iron Ore Company of Canada (Labrador City) (58.7%) - Iron ore operating site
- 2 Iron Ore Company of Canada (Sept-Iles) (58.7%) - Iron ore shipping facility
- 3 Rio Tinto Fer et Titane (Havre-Saint-Pierre) - Titanium dioxide feedstock operating site and technology centre
- 4 Rio Tinto Fer et Titane (Sorel-Tracy) - Titanium dioxide feedstock operating site and technology centre
- 5 Potash Saskatchewan (32%) - Potash project

Growth & Innovation

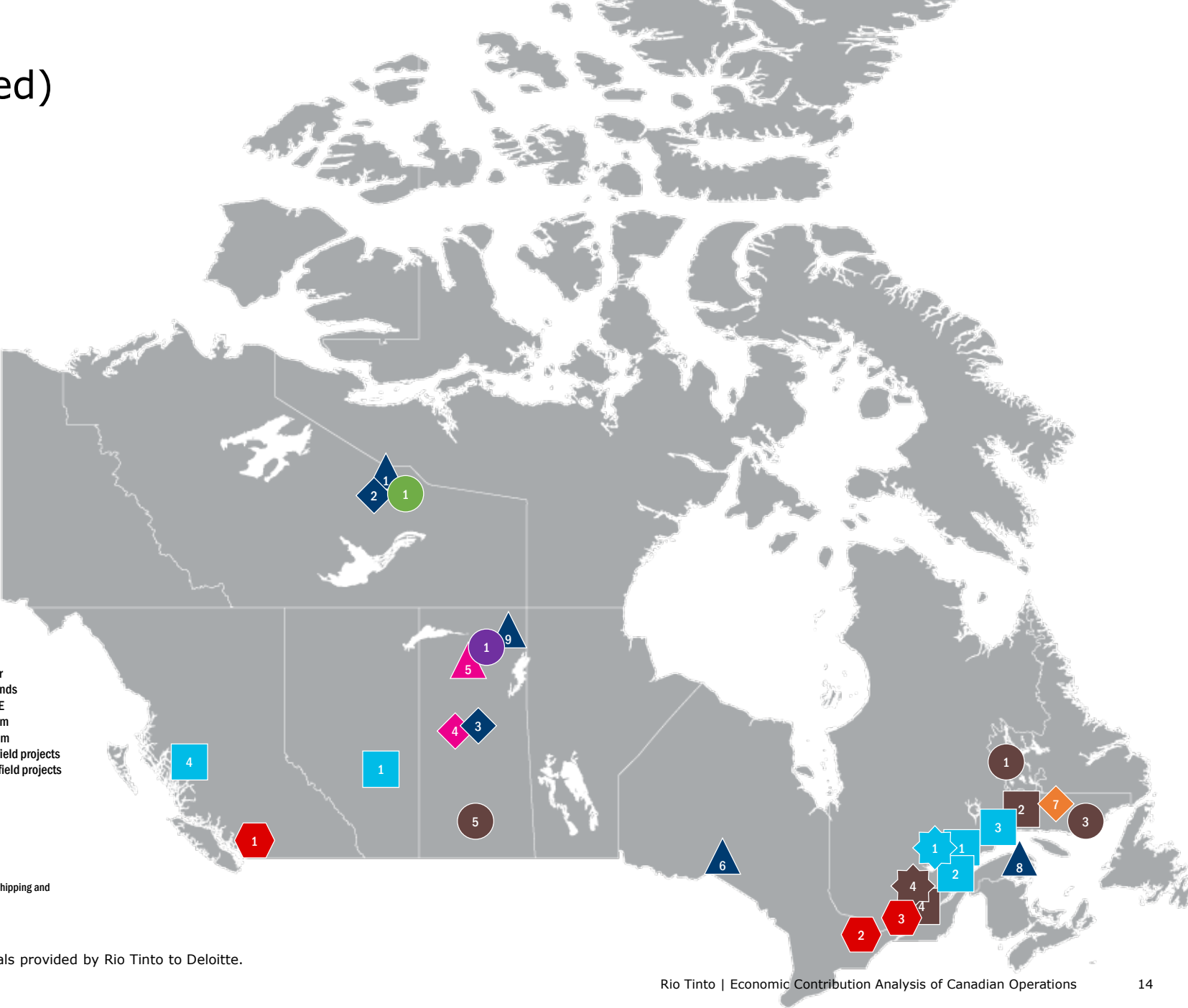
- 1 Rio Tinto Uranium Canada (100%) - Uranium project

Exploration across Canada

- ▲ Diamond Spear
- Diavik
- FalCon
- ◆ Roughrider
- ▲ Russell Lake
- ▲ Mid-continent Nickel
- ◆ Grader West
- ▲ Popelogan
- ▲ Janice Lake
- Copper
- Diamonds
- Ni/PGE
- Uranium
- Titanium
- △ Greenfield projects
- ◇ Brownfield projects

Key

- Mines and mining projects
- Smelters, refineries, processing, plants, port, rail, shipping and power facilities remote from mine
- ★ Technology and Innovation centres
- Offices






Note: The business descriptions presented on this slide are sourced from materials provided by Rio Tinto to Deloitte.

Summary of Rio Tinto's Operational Data

The economic contributions of Rio Tinto's operations in Canada are driven by the associated expenditures, government payments and taxes, and number of full-time equivalent ("FTE") employees at the provincial/territorial levels of Quebec, Newfoundland and Labrador, British Columbia, and the Northwest Territories, as well as at the national level.

Rio Tinto's Expenditures, Government Taxes and Payments, and Employees

The provinces/territories under analysis – Quebec, Newfoundland and Labrador, British Columbia, and the Northwest Territories – account for about 99% of Rio Tinto's expenditures in Canada. The table below presents a summary of Rio Tinto's expenditures, government taxes and payments, and directly employed full-time employees by province/territory in 2018.

Region	 Expenditures (2018)	 Government payments and taxes (2018) ¹	 Directly employed FTE employees (2018) ²
Quebec	\$3 801M	\$631M	6 884
Newfoundland and Labrador	\$981M	\$224M	1 813
British Columbia	\$600M	\$109M	1 110
Northwest Territories	\$529M	\$66M	658
Rest of Canada	\$31.3M	\$3.5M	50
Canada	\$5 942M	\$1 033M	10 515

Note: Differences in totals are due to rounding.

1. The government payments and taxes summarized here include the following information provided by Rio Tinto: corporate income taxes; royalties; fees, dividends and other extractive related payments; employee and employer payroll taxes; and other taxes and payments. These amounts exclude Deloitte's estimations of taxes on products (e.g., indirect taxes).

2. This column only reflects Rio Tinto's directly employed employees (i.e., direct employees and Category 1 employees), and as such, excludes the other approximate 5000 hired contractors supporting Rio Tinto in Canada.

Rio Tinto's Operations in Quebec

Rio Tinto's operations in **Quebec** directly employ 6 884 people, which are on average paid about three times the average salary in the province.¹ Rio Tinto's operations in Quebec support its aluminum, iron ore, and ilmenite and titanium business lines. The province is also home to the Global Corporate Hub (Montreal), research and development centres, a titanium greenfield project, four port facilities, and two rail connections.

QUEBEC



- Global corporate hub to support Rio Tinto's operations and Centre of Excellence for Processing
- Alumina refinery and network of aluminum smelters
- Network of hydropower stations, treatment plants, casting centres, and production support facilities
- Mining facility and metallurgical complex for ilmenite/titanium operations
- Two research and development centres: Arvida Research & Development Centre and technology centre supporting RTFT
- Four port facilities and three rail connections
- Titanium brownfield project

Rio Tinto's operations in **Quebec** directly employed

6 884

people,
with wages paid equaling

\$1 012M

Average wage of
\$147K/annum

Rio Tinto's activities in the **Quebec** incurred other expenditures of





\$2 789M

and

\$631M

government payments and taxes² of

The expenditures incurred to support Rio Tinto's activities in Quebec generates spillover effects on a range of supplier industries. A summary of the spending in Quebec is presented below.

	Salaries and wages	\$1 012M	(27%)
	Manufacturing	\$971M	(26%)
	Transportation and warehousing	\$541M	(14%)
	Professional, scientific and technical services	\$518M	(14%)
	Construction, repair and maintenance	\$200M	(5%)
	Utilities	\$180M	(5%)
	Administrative and support services	\$110M	(3%)
	Other ³	\$268M	(7%)
	Total Expenditures	\$3 801M	(100%)

Note: Differences in totals are due to rounding.

1. The average salaries used for comparison purposes were sourced from: Statistics Canada - Table 14-10-0204-01 Average Weekly Earnings By Industry, Annual.

2. The amount presented for government payments and taxes excludes Deloitte's estimation of taxes on products (e.g., indirect taxes).

3. Other expenditures incurred to support Rio Tinto's activities in Quebec include the following industry classifications: financial and insurance services, mining and oil and gas extraction, accommodation and food services, educational services, health care and social assistance, telecommunications, and other services from governments or non-profit institutions.

Rio Tinto's Operations in Newfoundland and Labrador

Rio Tinto's operations in **Newfoundland and Labrador** directly employ 1 813 people, which are on average paid about four times the average salary in the province.¹ Rio Tinto's operations in Newfoundland and Labrador support its iron ore business and the province is home to IOC's integrated facility (mine and processing plant) in Labrador City, Newfoundland and Labrador and the 418-kilometre railway that connects the integrated facility to IOC's port and stockpile in Sept-Îles, Quebec.

NEWFOUNDLAND AND LABRADOR



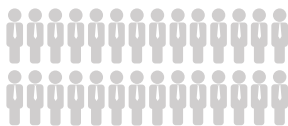
- Mining facility, concentrator, and pelletizing plant for iron operations
- 418 kilometre railroad that links the integrated facility to the port in Sept-Îles, Quebec

Rio Tinto's operations in **Newfoundland and Labrador** directly employed

1 813

people,
with wages paid equaling

\$279M



Average wage of
\$173K/annum⁴

Rio Tinto's activities in **Newfoundland and Labrador** incurred other expenditures of

\$702M

and

government payments and taxes² of



\$224M



The expenditures incurred to support Rio Tinto's activities in Newfoundland and Labrador generates spillover effects on a range of supplier industries. A summary of the spending in Newfoundland and Labrador is presented below.

	Salaries and wages	\$279M	(28%)
	Manufacturing	\$194M	(20%)
	Professional, scientific and technical services	\$128M	(13%)
	Transportation and warehousing	\$102M	(10%)
	Construction, repair and maintenance	\$41M	(4%)
	Utilities	\$32M	(3%)
	Administrative and support services	\$23M	(2%)
	Other ³	\$182M	(19%)
	Total Expenditures	\$981M	(100%)

Note: Differences in totals are due to rounding.

1. The average salaries used for comparison purposes were sourced from: Statistics Canada - Table 14-10-0204-01 Average Weekly Earnings By Industry, Annual.
2. The amount presented for government payments and taxes excludes Deloitte's estimation of taxes on products (e.g., indirect taxes).
3. Other expenditures incurred to support Rio Tinto's activities in Quebec include the following industry classifications: financial and insurance services, mining and oil and gas extraction, private royalty payments, accommodation and food services, educational services, health care and social assistance, telecommunications, and other services from governments or non-profit institutions.
4. The average salary computed for comparison purposes does not take into account about 200 of Rio Tinto's direct employees (associated with Rio Tinto's operations in Newfoundland and Labrador) that were on strike in 2018.

Rio Tinto's Operations in British Columbia

Rio Tinto's operations in **British Columbia** directly employ 1 110 people which are on average paid about 2.6 times the average salary in the province.¹ Rio Tinto's operations in British Columbia support its aluminum business and provide corporate office support for its exploration activities. The Kitimat aluminum smelter in British Columbia – powered by the Kemano Powerhouse (the largest high-pressure hydro generation facility in North America) – is one of the most efficient, greenest, and lowest-cost smelters in the world.

BRITISH COLUMBIA



- Corporate support office for exploration (Vancouver)
- Aluminum smelter (Kitimat)
- Hydropower facility (Kemano)

Rio Tinto's operations in **British Columbia** directly employed

1 110

people,
with wages paid equaling

\$145M

Average wage of
\$131K/annum

Rio Tinto's activities in **British Columbia** incurred other expenditures of

\$455M

and



\$109M

government payments and taxes² of



The expenditures incurred to support Rio Tinto's activities in British Columbia generates spillover effects on a range of supplier industries. A summary of the spending in British Columbia is presented below.

	Salaries and wages	\$145M	(24%)
	Professional, scientific and technical services	\$210M	(35%)
	Manufacturing	\$127M	(21%)
	Construction, repair and maintenance	\$37M	(6%)
	Transportation and warehousing	\$31M	(5%)
	Administrative and support services	\$21M	(4%)
	Mining, oil and gas extraction	\$14M	(2%)
	Other ³	\$15M	(3%)
	Total Expenditures	\$600M	(100%)

Note: Differences in totals are due to rounding.

1. The average salaries used for comparison purposes were sourced from: Statistics Canada - Table 14-10-0204-01 Average Weekly Earnings By Industry, Annual.

2. The amount presented for government payments and taxes excludes Deloitte's estimation of taxes on products (e.g., indirect taxes).

3. Other expenditures incurred to support Rio Tinto's activities in British Columbia include the following industry classifications: financial and insurance services, utilities, accommodation and food services, educational services, health care and social assistance, telecommunications, and other services from governments or non-profit institutions.

Rio Tinto's Operations in the Northwest Territories

Rio Tinto's operations in **Northwest Territories** directly employ 658 people which are on average paid about 1.4 times the average salary in the territory.¹ Rio Tinto's operations in the Northwest Territories support its diamond business and exploration activities for diamond deposits.

NORTHWEST TERRITORIES



- Diamond operating site (Diavik)
- Diamond greenfield and brownfield projects

Rio Tinto's operations in the **Northwest Territories** directly employed

658

people,
with wages paid equaling

\$66M

Average wage of
\$100K/annum

Rio Tinto's activities in the **Northwest Territories** incurred other expenditures of

\$463M

and



\$66M

government payments and taxes² of



The expenditures incurred to support Rio Tinto's activities in Northwest Territories generates spillover effects on a range of supplier industries. A summary of the spending in Northwest Territories is presented below.

	Salaries and wages	\$66M	(13%)
	Mining, oil and gas extraction	\$180M	(34%)
	Manufacturing	\$97M	(18%)
	Professional, scientific and technical services	\$74M	(14%)
	Construction, repair and maintenance	\$59M	(11%)
	Utilities	\$35M	(7%)
	Administrative and support services	\$8M	(2%)
	Other ³	\$9M	(2%)
	Total Expenditures	\$529M	(100%)

Note: Differences in totals are due to rounding.

1. The average salaries used for comparison purposes were sourced from: Statistics Canada - Table 14-10-0204-01 Average Weekly Earnings By Industry, Annual.

2. The amount presented for government payments and taxes excludes Deloitte's estimation of taxes on products (e.g., indirect taxes).

3. Other expenditures incurred to support Rio Tinto's activities in the Northwest Territories include the following industry classifications: accommodation and food services, educational services, health care and social assistance, telecommunications, private royalty payments, and other services from governments or non-profit institutions.

Rio Tinto's Operations in the Rest of Canada

Rio Tinto's operations in the **rest of Canada** support a variety of activities, including: (i) exploration and evaluation projects for various metals and minerals and (ii) corporate office in Ottawa to support corporate relations.

REST OF CANADA



- Rio Tinto Uranium Canada (Saskatchewan)
- Potash Saskatchewan (Saskatchewan)
- Uranium and copper greenfield projects (Saskatchewan)
- Uranium and diamond brownfield projects (Saskatchewan)
- Petroleum coke calcining plant (Alberta)
- Nickel greenfield project (Ontario)
- Ottawa corporate relations office (Ontario)
- Copper greenfield project (New Brunswick)

Rio Tinto's operations in the **rest of Canada** directly employed

50

people,
with wages paid equaling



\$4.8M

Average wage of
\$96K/annum

Rio Tinto's activities in the **rest of Canada** incurred other expenditures of

\$26.5M

and

government payments and taxes¹ of



\$3.5M



The expenditures incurred to support Rio Tinto's activities in the rest of Canada are summarized below. The categories are based on the industry categorization of Rio Tinto's suppliers.

	Salaries and wages	\$4.8M	(15%)
	Transportation and warehousing	\$12.1M	(39%)
	Manufacturing	\$10.9M	(35%)
	Professional, scientific and technical services	\$1.6M	(5%)
	Mining, oil and gas extraction	\$1.4M	(4%)
	Other ²	\$0.4M	(1%)
	Total Expenditures	\$31.3M	(100%)

Note: Differences in totals are due to rounding.

1. The amount presented for government payments and taxes excludes Deloitte's estimation of taxes on products (e.g., indirect taxes).

2. Other expenditures incurred to support Rio Tinto's activities in the rest of Canada include the following industry classifications: administrative and support services, construction, repair and maintenance, telecommunications, and other services from governments or non-profit institutions.

Rio Tinto's Economic Contributions



Summary of Economic Contributions

Rio Tinto brings significant support to the country and provincial/territorial economies in which it operates. Nationally, Rio Tinto contributed to the creation and maintenance of 43 804 jobs (direct and indirect), with an average salary about 60% higher than the national average salary in 2018.¹ Accounting for direct and indirect contributions, Rio Tinto supported the Canadian economy with \$8 493M of GDP and its activities in the country gave rise to \$1 366M of government revenue.



Canada: Direct and Indirect Contributions

Economic Indicators	Canada
GDP	\$8 493M
Labour Income	\$3 629M
Employment (FTEs)	43 804 <i>(of which Rio Tinto directly employs 10 515)</i>
Government Revenue	\$1 366M



Note: The average salaries used for comparison purposes were sourced from: Statistics Canada - Table 14-10-0204-01 Average Weekly Earnings By Industry, Annual.
1. The average salary computed for comparison purposes does not take into account about 200 of Rio Tinto’s direct employees (associated with Rio Tinto’s operations in Newfoundland and Labrador) that were on strike in 2018.

Summary of Economic Contributions (continued)

Rio Tinto’s activities in **Quebec** contributed to the creation and maintenance of 29 117 jobs (direct and indirect), with an average salary about 61% higher than the provincial average in 2018. Accounting for direct and indirect contributions, Rio Tinto supported the Quebec economy with \$5 325M of GDP and its activities in the province gave rise to \$764M of government revenue.



Key Activities Performed in Quebec

- Global corporate hub to support Rio Tinto’s operations and Centre of Excellence for Processing
- Alumina refinery and network of aluminum smelters
- Network of hydropower stations, treatment plants, casting centres, and production support facilities
- Mining facility and metallurgical complex for ilmenite/titanium operations
- Two research and development centres: Arvida Research & Development Centre and technology centre for RTFT
- Four port facilities and three rail connections
- Titanium greenfield project

Quebec: Direct and Indirect Economic Contributions

Economic Indicators	Quebec
GDP	\$5 325M
Labour Income	\$2 270M
Employment (FTEs)	29 117 <i>(of which Rio Tinto directly employs 6 884)</i>
Government Revenue	\$764M

Rio Tinto’s activities in **Newfoundland and Labrador** contributed to the creation and maintenance of 6 044 jobs (direct and indirect), with an average salary about 122% higher than the provincial average in 2018.¹ Accounting for direct and indirect contributions, Rio Tinto supported the Newfoundland and Labrador economy with \$1 348M of GDP and its activities in the province gave rise to \$251M of government revenue.



Key Activities Performed in Newfoundland and Labrador

- Mining facility, concentrator, and pelletizing plant for iron operations
- 418 kilometre railroad that links the integrated facility to the port in Sept-Îles, Quebec

Newfoundland and Labrador: Direct and Indirect Contributions

Economic Indicators	Newfoundland and Labrador
GDP	\$1 348M
Labour Income	\$565M
Employment (FTEs)	6 044 <i>(of which Rio Tinto directly employs 1 813)</i>
Government Revenue	\$251M

Note: The average salaries used for comparison purposes were sourced from: Statistics Canada - Table 14-10-0204-01 Average Weekly Earnings By Industry, Annual.
1. The average salary computed for comparison purposes does not take into account about 200 of Rio Tinto’s direct employees (associated with Rio Tinto’s operations in Newfoundland and Labrador) that were on strike in 2018.

Summary of Economic Contributions (continued)

Rio Tinto’s activities in **British Columbia** contributed to the creation and maintenance of 4 855 jobs (direct and indirect), with an average salary about 50% higher than the provincial average in 2018. Accounting for direct and indirect contributions, Rio Tinto supported the British Columbia economy with \$698M of GDP and its activities in the province gave rise to \$131M of government revenue.



Key Activities Performed in British Columbia

- Corporate support office for exploration (Vancouver)
- Aluminum smelter (Kitimat)
- Hydropower facility (Kemano)
- Copper greenfield project

British Columbia: Direct and Indirect Contributions

Economic Indicators	British Columbia
GDP	\$698M
Labour Income	\$366M
Employment (FTEs)	4 855 <i>(of which Rio Tinto directly employs 1 110)</i>
Government Revenue	\$131M

Rio Tinto’s activities in the **Northwest Territories** contributed to the creation and maintenance of 2 725 jobs (direct and indirect), with an average salary about 2% higher than the territorial average in 2018. Accounting for direct and indirect contributions, Rio Tinto supported the Northwest Territories economy with \$614M of GDP and its activities in the territory gave rise to \$82M of government revenue.



Key Activities Performed in Northwest Territories

- Diamond operating site (Diavik)
- Diamond greenfield and brownfield projects

Northwest Territories: Direct and Indirect Contributions

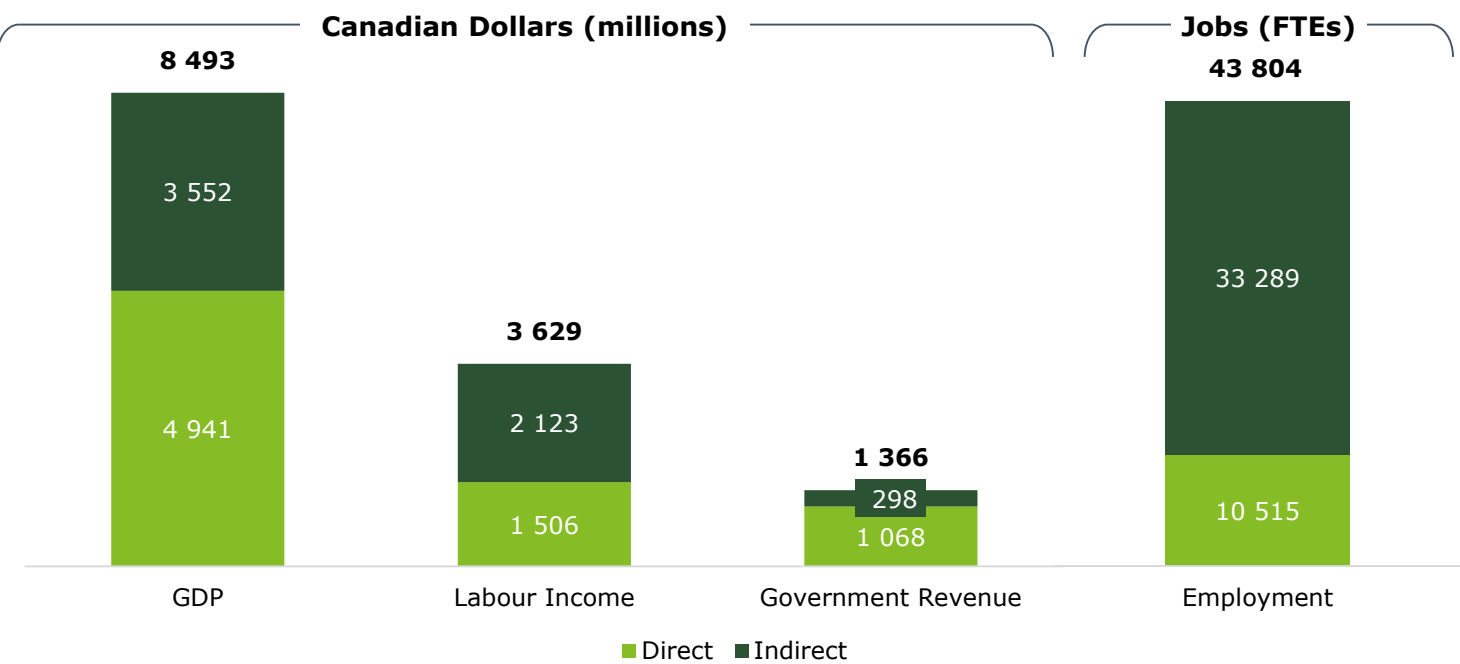
Economic Indicators	Northwest Territories
GDP	\$614M
Labour Income	\$205M
Employment (FTEs)	2 725 <i>(of which Rio Tinto directly employs 658)</i>
Government Revenue	\$82M

Note: The average salaries used for comparison purposes were sourced from: Statistics Canada - Table 14-10-0204-01 Average Weekly Earnings By Industry, Annual.

Economic Contributions in Canada

Accounting for the direct and indirect economic contributions, we estimate that Rio Tinto’s activities in Canada are anticipated to contribute \$8 493M to Canada’s GDP annually, of which \$3 629M is labour income, contributing to the creation and maintenance of 43 804 jobs in the country. Rio Tinto’s activities in Canada are also estimated to contribute approximately \$1 366M to government revenue at the direct and indirect levels.

Economic Contributions from Rio Tinto’s Operations in Canada

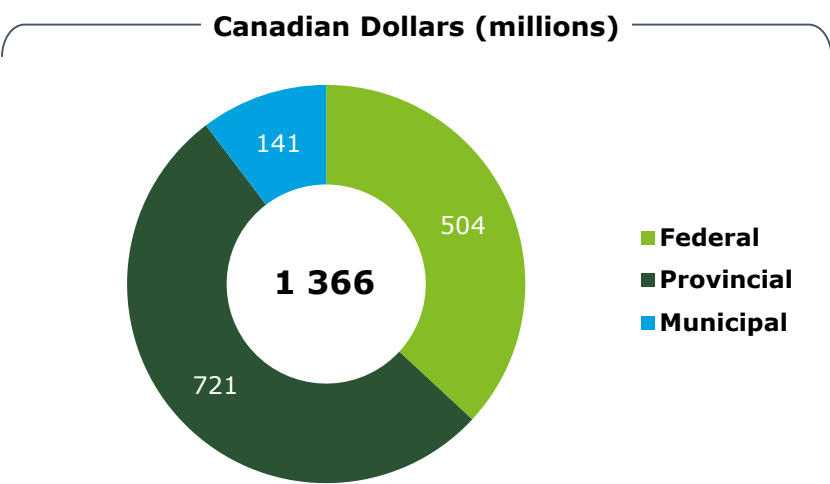


Note: Differences in totals are due to rounding.

We estimate that every dollar spend by Rio Tinto in Canada will support **\$1.43 in GDP contribution** at direct and indirect levels to the economy of Canada.

Each million dollars spend by Rio Tinto to support its operations in Canada is estimated to contribute to the creation and maintenance of approximately **7 FTEs** at direct and indirect levels in Canada.

Breakdown of Government Revenue Components

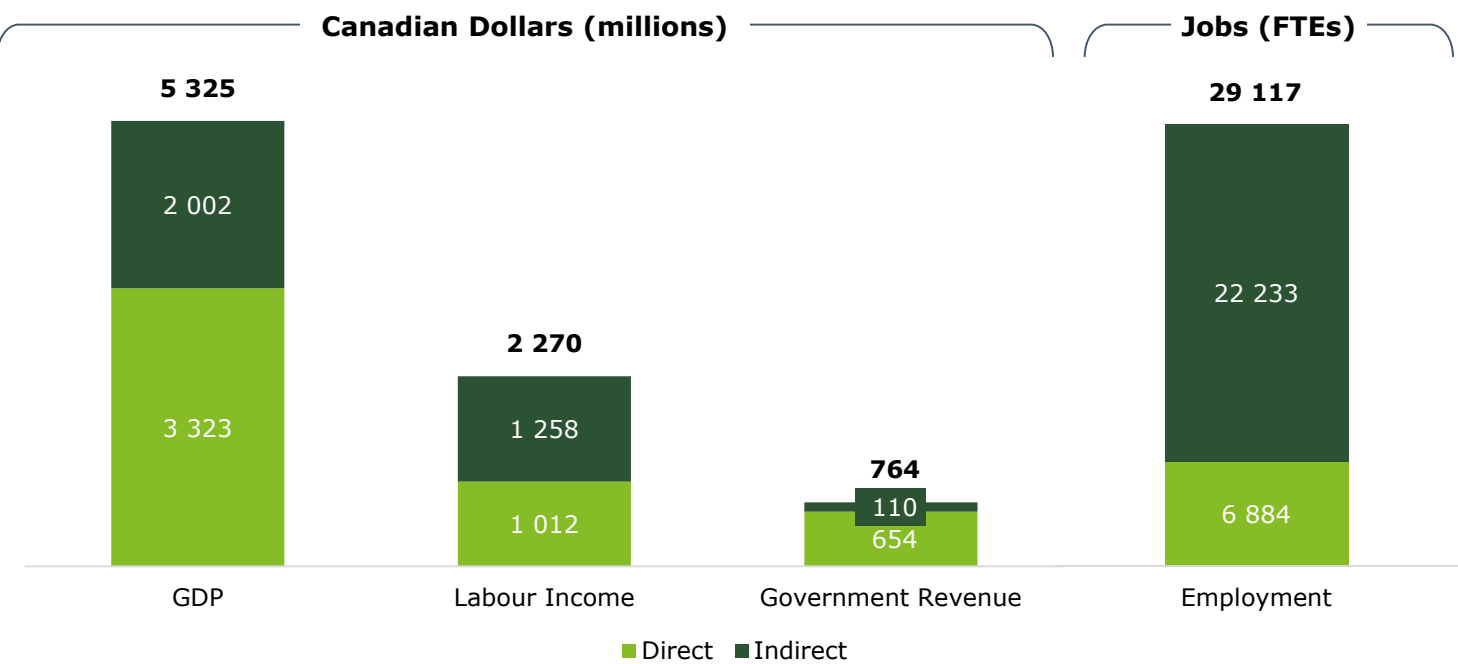


Note: The above diagram reflects both direct and indirect contributions to government revenue. At the direct level, Rio Tinto’s contributions to government revenue include: corporate income taxes; royalties; fees, dividends and other extractive related payments; employee and employer payroll taxes; other taxes and payments; and estimated indirect taxes. At the indirect level, Rio Tinto’s contributions to government revenue include the product, production, and income taxes associated with the demand for materials and services that its activities generate in supplier industries (estimated using Rio Tinto’s expenditures).

Economic Contributions in Quebec

Accounting for the direct and indirect economic contributions, we estimate that Rio Tinto’s activities in Quebec are anticipated to contribute \$5 325M to Quebec’s GDP annually, of which \$2 270M is labour income, contributing to the creation and maintenance of 29 117 jobs in the province. Rio Tinto’s activities in Quebec are also estimated to contribute approximately \$764M to government revenue at the direct and indirect levels.

Economic Contributions from Rio Tinto’s Operations in Quebec



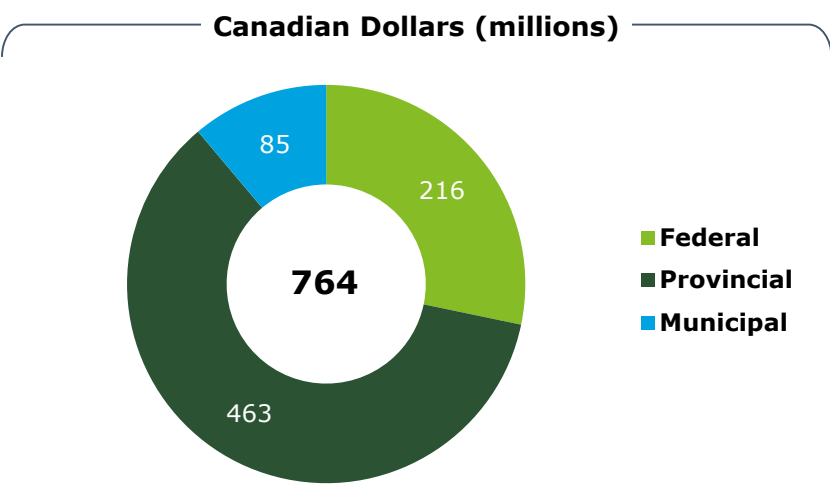
Note: Differences in totals are due to rounding.

We estimate that every dollar spend by Rio Tinto in Quebec will support **\$1.40 in GDP contribution** at direct and indirect levels to the economy of Quebec.

Each million dollars spend by Rio Tinto to support its operations in Quebec is estimated to contribute to the creation and maintenance of approximately **8 FTEs** at direct and indirect levels in Quebec.

At the direct and indirect levels, Rio Tinto’s contribution to GDP is estimated to reflect approximately **1.3% of Quebec’s GDP**. Similarly, Rio Tinto’s contribution to employment at the direct and indirect levels is estimated to reflect approximately **0.8% of Quebec’s aggregate employment**.

Breakdown of Government Revenue Components

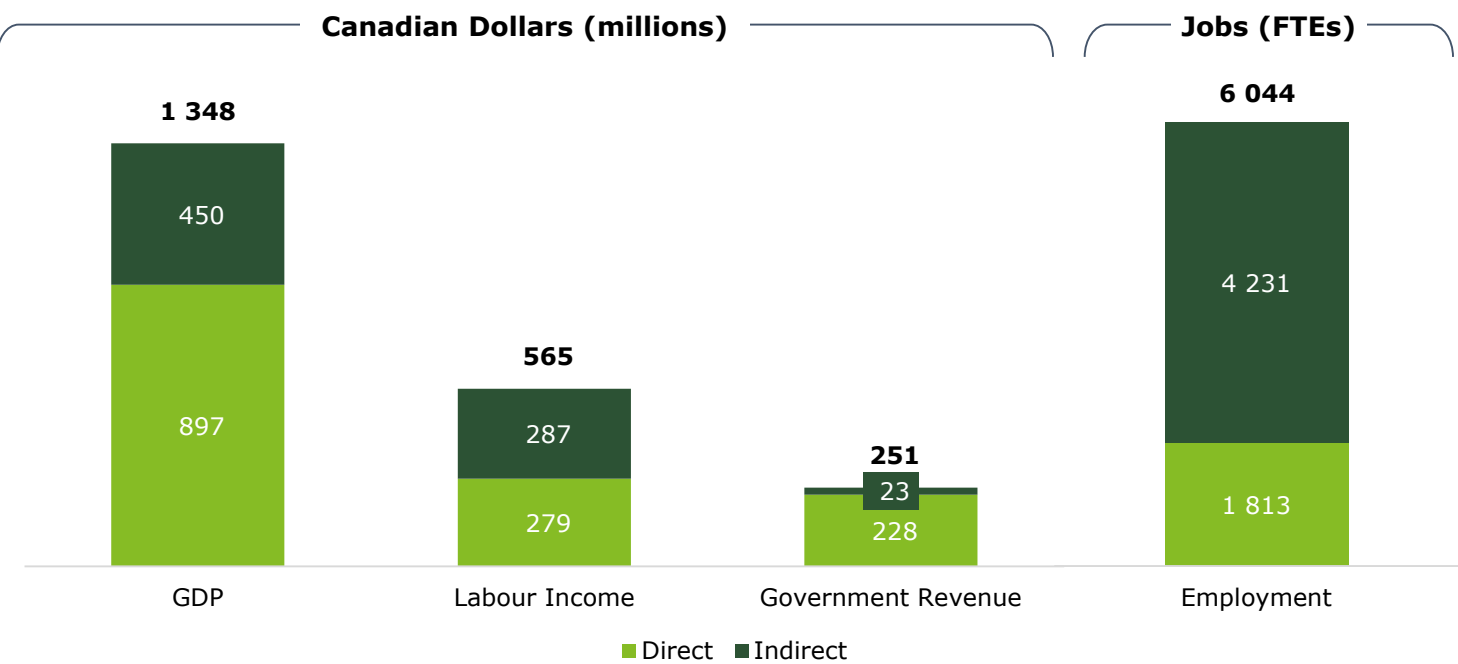


Note: The above diagram reflects both direct and indirect contributions to government revenue. At the direct level, Rio Tinto’s contributions to government revenue include: corporate income taxes; royalties; fees, dividends and other extractive related payments; employee and employer payroll taxes; other taxes and payments; and estimated indirect taxes. At the indirect level, Rio Tinto’s contributions to government revenue include the product, production, and income taxes associated with the demand for materials and services that its activities generate in supplier industries (estimated using Rio Tinto’s expenditures).

Economic Contributions in Newfoundland and Labrador

Accounting for direct and indirect economic contributions, we estimate that Rio Tinto’s activities in Newfoundland and Labrador are anticipated to contribute \$1 348M to Newfoundland and Labrador’s GDP annually, of which \$565M is labour income, contributing to the creation and maintenance of 6 044 jobs in the province. Rio Tinto’s activities in Newfoundland and Labrador are also estimated to contribute approximately \$251M to government revenue at the direct and indirect levels.

Economic Contributions from Rio Tinto’s Operations in Newfoundland and Labrador

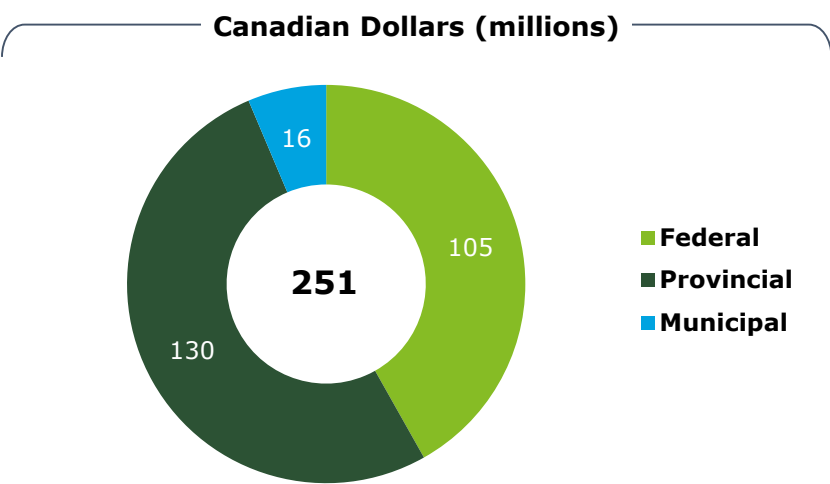


Note: Differences in totals are due to rounding.

We estimate that every dollar spend by Rio Tinto in Newfoundland and Labrador will support **\$1.37 in GDP contribution** at direct and indirect levels to the economy of Newfoundland and Labrador.

Each million dollars spend by Rio Tinto to support its operations in Newfoundland and Labrador is estimated to contribute to the creation and maintenance of approximately **6 FTEs** at direct and indirect levels in Newfoundland and Labrador.

Breakdown of Government Revenue Components



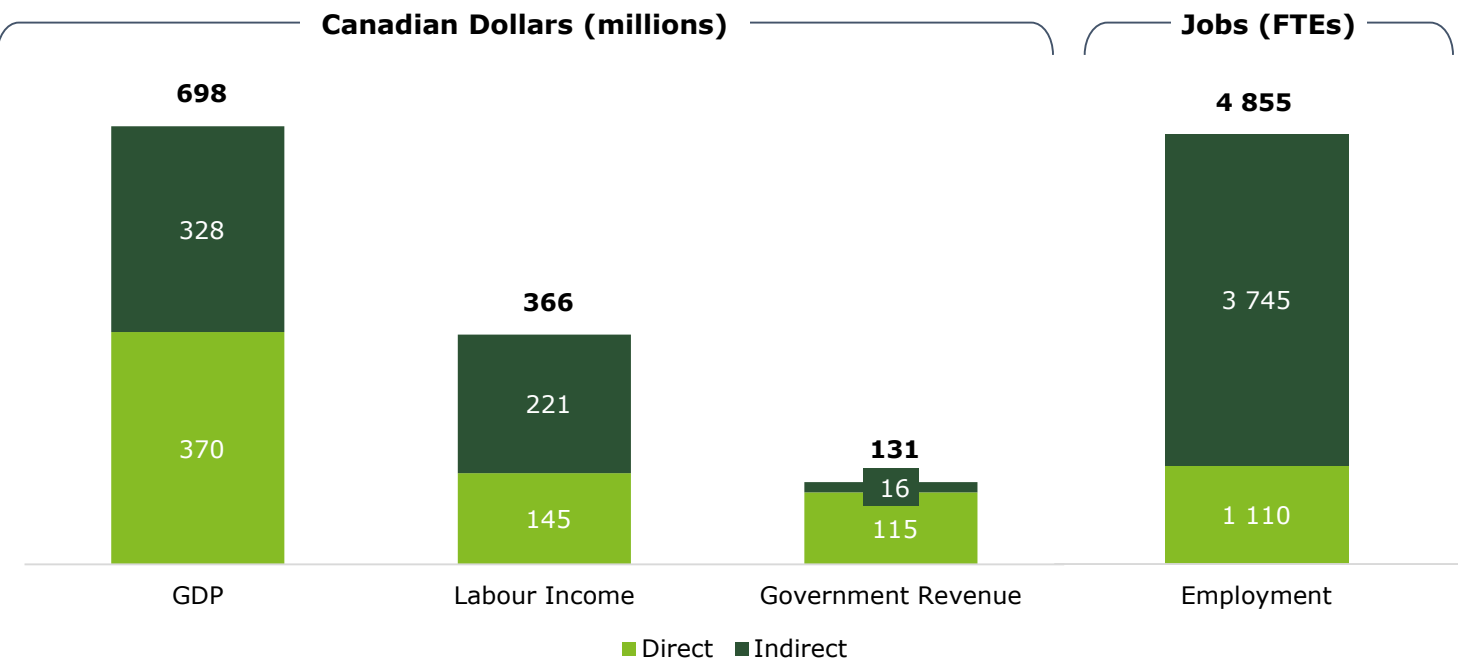
Note: The above diagram reflects both direct and indirect contributions to government revenue. At the direct level, Rio Tinto’s contributions to government revenue include: corporate income taxes; royalties; fees, dividends and other extractive related payments; employee and employer payroll taxes; other taxes and payments; and estimated indirect taxes. At the indirect level, Rio Tinto’s contributions to government revenue include the product, production, and income taxes associated with the demand for materials and services that its activities generate in supplier industries (estimated using Rio Tinto’s expenditures).

At the direct and indirect levels, Rio Tinto’s contribution to GDP is estimated to reflect approximately **4.1% of Newfoundland and Labrador’s GDP**. Similarly, Rio Tinto’s contribution to employment at the direct and indirect levels is estimated to reflect approximately **2.8% of Newfoundland and Labrador’s aggregate employment**.

Economic Contributions in British Columbia

Accounting for the direct and indirect economic contributions, we estimate that Rio Tinto’s activities in British Columbia are anticipated to contribute \$698M to British Columbia’s GDP annually, of which \$366M is labour income, contributing to the creation and maintenance of 4 855 jobs in the province. Rio Tinto’s activities in British Columbia are also estimated to contribute approximately \$131M to government revenue at the direct and indirect levels.

Economic Contributions from Rio Tinto’s Operations in British Columbia

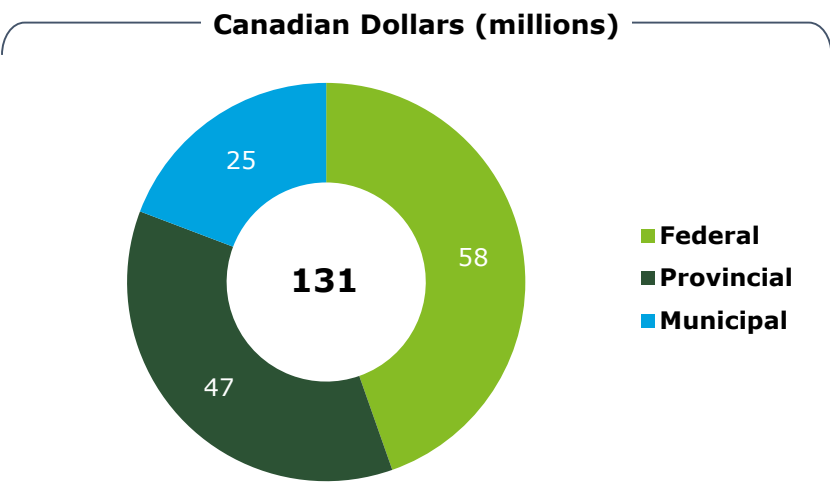


Note: Differences in totals are due to rounding.

We estimate that every dollar spend by Rio Tinto in British Columbia will support **\$1.16 in GDP contribution** at direct and indirect levels to the economy of British Columbia.

Each million dollars spend by Rio Tinto to support its operations in British Columbia is estimated to contribute to the creation and maintenance of approximately **8 FTEs** at direct and indirect levels in British Columbia.

Breakdown of Government Revenue Components



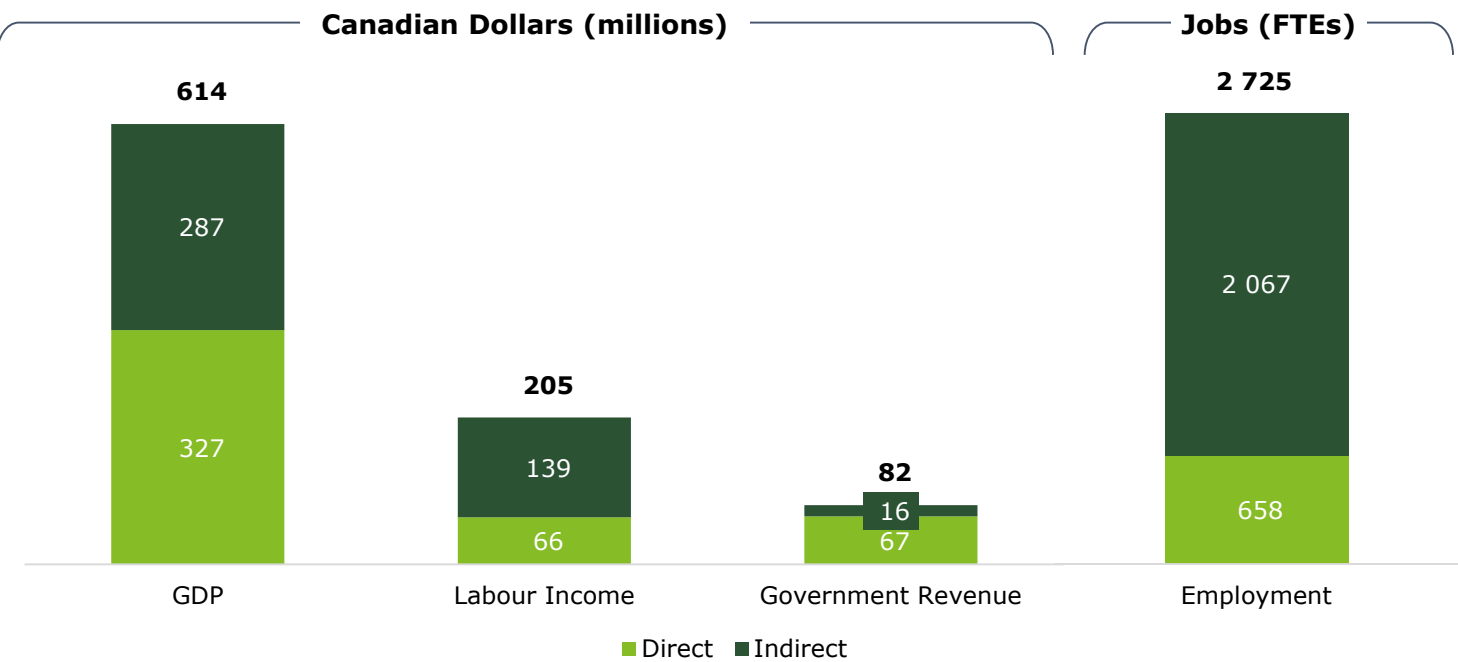
Note: The above diagram reflects both direct and indirect contributions to government revenue. At the direct level, Rio Tinto’s contributions to government revenue include: corporate income taxes; royalties; fees, dividends and other extractive related payments; employee and employer payroll taxes; other taxes and payments; and estimated indirect taxes. At the indirect level, Rio Tinto’s contributions to government revenue include the product, production, and income taxes associated with the demand for materials and services that its activities generate in supplier industries (estimated using Rio Tinto’s expenditures).

At the direct and indirect levels, Rio Tinto’s contribution to GDP is estimated to reflect approximately **0.2% of British Columbia’s GDP**. Similarly, Rio Tinto’s contribution to employment at the direct and indirect levels is estimated to reflect approximately **0.2% of British Columbia’s aggregate employment**.

Economic Contributions in the Northwest Territories

Accounting for the direct and indirect economic contributions, we estimate that Rio Tinto’s activities in the Northwest Territories are anticipated to contribute \$614M to the Northwest Territories’ GDP annually, of which \$205M is labour income, contributing to the creation and maintenance of 2 725 jobs in the territory. Rio Tinto’s activities in the Northwest Territories are also estimated to contribute approximately \$82M to government revenue at the direct and indirect levels.

Economic Contributions from Rio Tinto’s Operations in the Northwest Territories

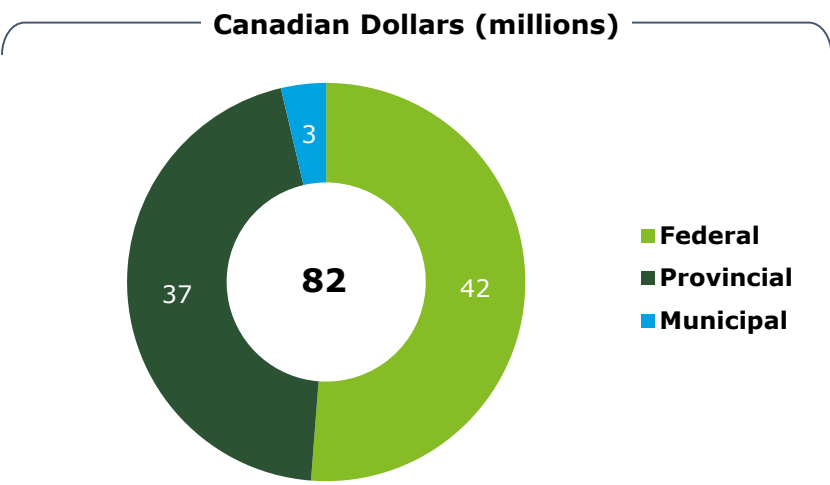


Note: Differences in totals are due to rounding.

We estimate that every dollar spend by Rio Tinto in the Northwest Territories will support **\$1.16 in GDP contribution** at direct and indirect levels to the economy of the Northwest Territories.

Each million dollars spend by Rio Tinto to support its operations in the Northwest Territories is estimated to contribute to the creation and maintenance of approximately **5 FTEs** at direct and indirect levels in the Northwest Territories.

Breakdown of Government Revenue Components



Note: The above diagram reflects both direct and indirect contributions to government revenue. At the direct level, Rio Tinto’s contributions to government revenue include: corporate income taxes; royalties; fees, dividends and other extractive related payments; employee and employer payroll taxes; other taxes and payments; and estimated indirect taxes. At the indirect level, Rio Tinto’s contributions to government revenue include the product, production, and income taxes associated with the demand for materials and services that its activities generate in supplier industries (estimated using Rio Tinto’s expenditures).

At the direct and indirect levels, Rio Tinto’s contribution to GDP is estimated to reflect approximately **12.6% of the Northwest Territories’ GDP**. Similarly, Rio Tinto’s contribution to employment at the direct and indirect levels is estimated to reflect approximately **10.2% of the Northwest Territories’ aggregate employment**.¹

1. The total GDP and employment in the Northwest Territories is relatively small across all industries (compared to the other regions under analysis), and as such, Rio Tinto’s contributions to GDP and employment at the direct and indirect levels reflects a relatively high proportion of the Northwest Territories’ total GDP and employment.



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