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Economic analysis of the 2023 INVENTURE\$ Conference

Alberta Innovates

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Executive summary

Study context and scope

INVENTURE\$ is a Conference staged by Alberta Innovates (AI) that brings together over 3,000 venture capitalists, angel investors, startups, entrepreneurs and thought leaders in Calgary. A key objective of the Conference is to discover and share the latest in innovation and research and provide a platform for capital access and deal-making. The 2023 edition of the Conference took place between May 31 and June 2, 2023.

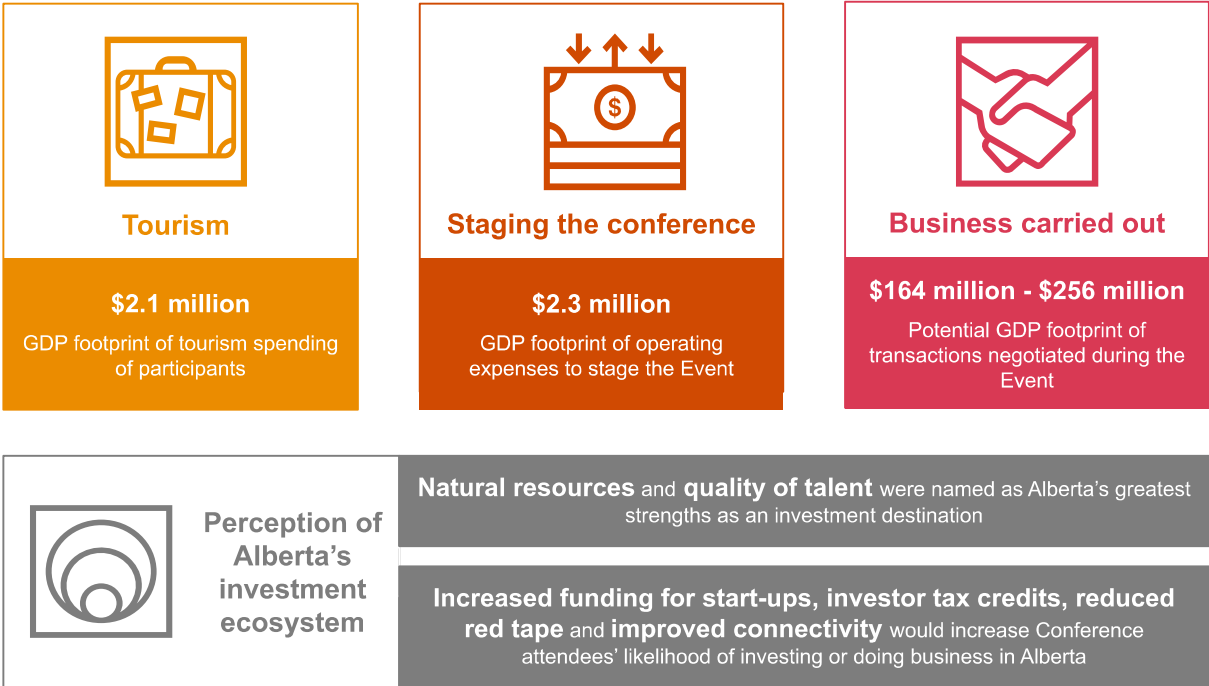
PricewaterhouseCoopers LLP (we, or us) were commissioned by Alberta Innovates to conduct an economic footprint study to help to better understand the overall impact associated with INVENTURE\$ 2023 (“the Conference” or “the Event”). Our analysis included the following four impact channels, which were informed by a survey of conference attendees and expenditure data provided by Alberta Innovates:

- 1. **Impact of the Conference on tourism spending:** Estimating the economic footprint of spending by conference participants who came to Calgary because of the 2023 Conference.
- 2. **Impact of staging the Conference:** The economic footprint associated from staging the Event through operating expenditures by Alberta Innovates.
- 3. **Value of business carried out:** Estimating the economic footprint of sales and investment transactions negotiated during or as a result of the Conference by attendees.
- 4. **Perception of Alberta as an investment destination:** How Conference attendees view Alberta as an investment destination and factors that would increase their likelihood of doing business or investing in Alberta.

Key conference impacts

The snapshot below illustrates the key findings from this research, which are expanded upon below.

Snapshot of key conference impacts



Source: PwC survey (n=385) and analysis

Tourism impacts

We estimate the economic footprint of the Conference includes **\$2.1 million** arising from the GDP footprint on the tourist economy in Alberta due to the INVENTURE\$ 2023 Conference encouraging visitors from outside the province and/or Calgary to visit. This GDP, as well as incremental jobs, labour income and tax revenue is driven by Conference attendees who pay to stay in hotels or other types of accommodations in order to attend the Conference, as well as additional spending impacts on food, souvenirs, entertainment, and/or transportation.

This spending therefore provides incremental benefits to Calgary's tourism economy, as well as the broader Alberta economy by driving spending that would not otherwise have occurred in the absence of the Conference. Furthermore, 60% of respondents stated that their attendance at the Conference increased the likelihood that they will return to Calgary or Alberta as a tourist in the future which is not captured in the figure above.

Value of staging the Conference

We estimate that staging the conference has an economic footprint of **\$2.3 million**. Alberta Innovates spent money on local suppliers (facilities and support services, traveller accommodation, catering, entertainment) in order to stage the Conference which supported economic activity in Alberta and generated GDP, job creation, labour income and tax revenue for the province.

Business carried out

By far the most critical impact of the INVENTURE\$ Conference is bringing entrepreneurs, business people and investors together, encouraging positive connections and ultimately catalyzing new business activity. According to our survey, almost one in three participants (35%) taking part in INVENTURE\$ 2023 carried out new business activity that resulted or would result in revenues or investments due to their participation in the Event. Survey respondents reported that almost **\$110 million** of sales and investments were either agreed or under discussion at the Conference.

Based on assumptions about the likelihood that deals in discussion will reach fruition and estimating the impacts from attendees who did not respond to the survey, we estimate the total value of business carried out at the Conference could eventually reach between **\$256 million to \$400 million**. Factoring in the location of these deals, the business carried out could support **\$164 million to \$256 million** in GDP footprint in Alberta could be facilitated by the business transactions agreed or under negotiation at the 2023 Conference.

Perception of Alberta as an investment destination

Surveyed conference attendees were asked about their perception of Alberta as an investment destination, both with respect to its strengths and what changes would significantly increase the likelihood of investing or doing business in the province. Respondents indicated that **natural resources, quality of talent, and access to research and intellectual property** are the province's top strengths as an investment destination. When asked what changes may increase the likelihood of doing business in Alberta, multiple respondents listed **increased start-up investment support, preferential tax credits for investors, and reduced red tape** as what would make the province a more attractive destination for investment. In addition, several attendees noted that **improved flight and transit connectivity** between Edmonton and Calgary, across the province and with the rest of the country would increase the likelihood of doing business in Alberta.

Study limitations

The most significant result from our research is the estimated impact of business transactions negotiated at the Conference. This relies on inferring the value of deals reported in our survey across the entire population of the Conference's participants, along with assumptions about the share of deals under negotiation that will successfully be concluded. Whilst this inference approach is commonly used when analyzing the results from surveys, it is important to highlight several key assumptions underpinning it, including:¹

¹ Note the key assumption we have employed in this estimate is that the deals reported by the survey respondents can be generalised across the whole population. Therefore those not answering the survey were assumed to have conducted the same level of transactions as those who did complete the survey. There is no way of testing whether this assumption is correct without gathering data from the whole population, however our comparisons of the survey respondents to the entire population show no reason to suggest that the sample is not representative.

- That there is no sampling error in the survey responses. Therefore survey respondents represent a random sample of the population and do not overrepresent or underrepresent certain groups. Given the limited information about the population characteristics we have not been able to perform a detailed test of this assumption.²
- That there is no coverage error in the survey responses (i.e. it was sent to all Conference attendees and did not miss any groups). Given the survey was sent to all people who registered for the Conference we are reasonably confident that any coverage error is low.

We also undertook several checks on the reasonableness of the results from this question, including a comparison of the reported deal values to typical deal values published in other independent research such as the PwC Moneytree Venture Capital report and data from Statistics Canada. This comparison showed that the largest deals reported by survey respondents were generally in-line with the average Venture Capital deal values for Alberta.³

A follow up survey is planned six to ten months after the Conference which will allow us to better test the extent to which the deals under negotiation are successfully completed and provide stronger conclusions on possible measurement error.

² Information reviewed on geographical location showed the sample distribution closely matched the population distribution.

³ See for example <https://www.wd-deo.gc.ca/eng/19494.asp> and <https://www.pwc.com/ca/en/industries/technology/money-tree.html>

1. Introduction

1.1 Study background

Alberta Innovates (AI) commissioned PricewaterhouseCoopers, LLP (PwC, us, or we) to conduct a study that will assist AI in better understanding the overall economic footprint associated with the INVENTURE\$ 2023 (“the Conference” or “the Event”), and especially those at the local level in Alberta.

INVENTURE\$ is staged by AI to bring together venture capitalists, angel investors, startups, entrepreneurs and thought leaders in Calgary to discover and share the latest in innovation, research, capital access and deal-making. The 2023 edition of INVENTURE\$ took place between May 31 and June 2, 2023 and attracted over 3,000 attendees.

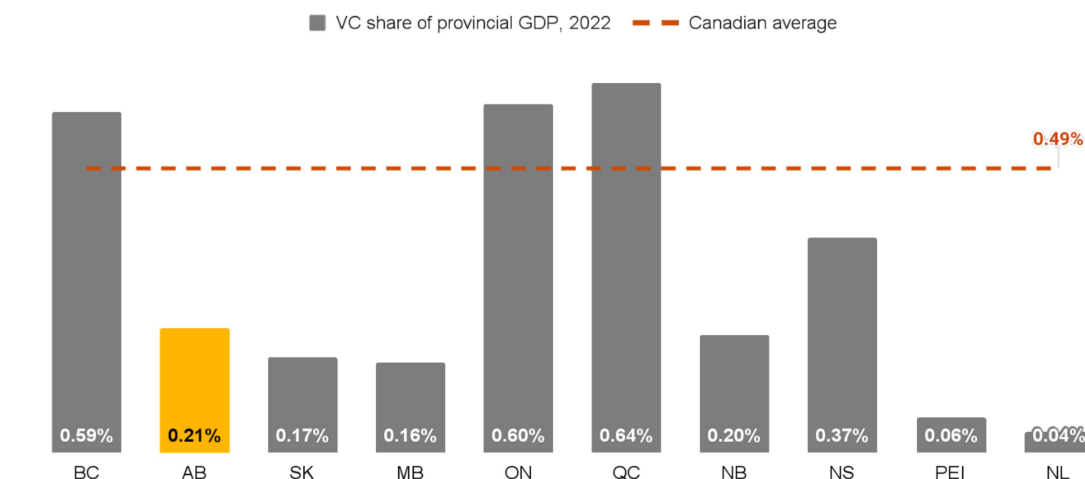
The objective of this study is to provide an assessment of the 2023 Conference’s economic impacts including the direct economic value generated through the Conference’s operating expenditures; tourism impacts, and the value of investment raised at the conference. We also assessed the impact of the conference on the perception of Alberta as an investment destination. Our analysis is primarily informed by a survey distributed to participants and data gathered from Alberta Innovates. A follow-up assessment six to ten months after the Event will also be used to determine the extent to which further impacts materialized after the Conference finished.

1.2 Venture capital trends in Alberta

The following section provides background information on trends in Alberta’s venture capital market. Access to investment funds is critical to enable startups to grow, and continue to innovate, attract and develop highly skilled workers, and ultimately diversify the provincial economy.

The latest data from Canadian Venture Capital and Private Equity Association (CVCA) shows that Alberta still lags behind some other provinces when assessing venture capital investment relative to the size of the economy, as shown in Figure 1. In 2022 Alberta attracted \$729 million in venture capital across 85 deals corresponding to 0.21% of provincial GDP. Three provinces, BC, Ontario and Quebec, all boasted venture capital activity at around three times the level of Alberta relative to GDP. Nova Scotia also had a higher intensity level. The top sectors for Alberta by the number of venture capital deals in 2022 were information and communication technologies (ICT) (39%) and life sciences (21%).⁴

Figure 1: Venture capital investment as a percentage of provincial GDP by province, 2022

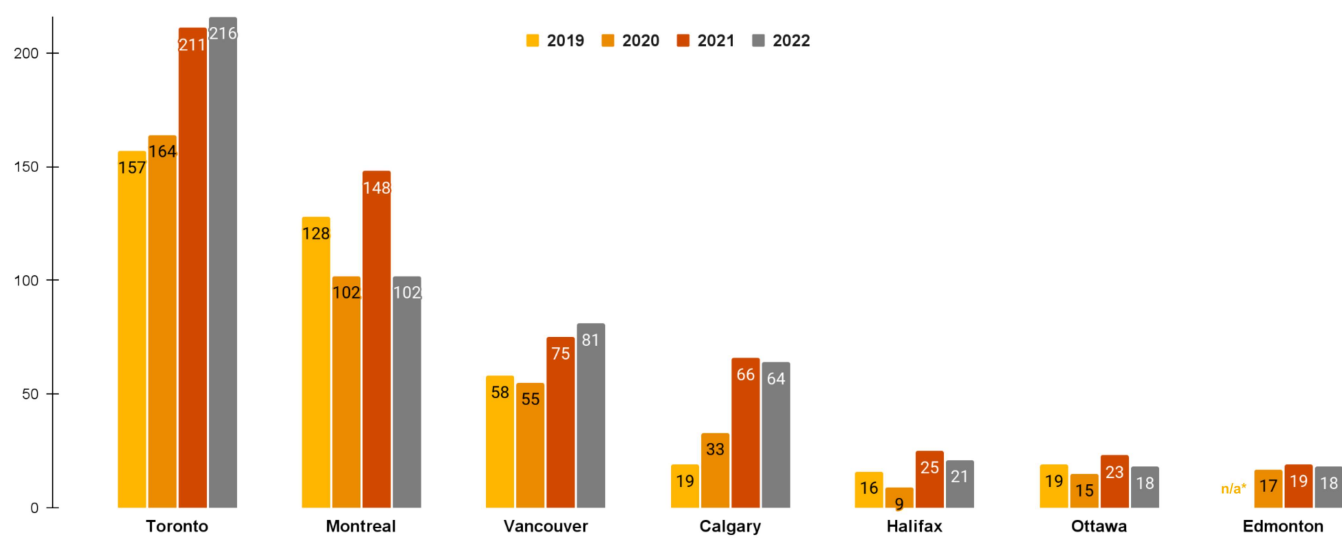


Sources: Canadian Venture Capital Market Overview 2022 Year in Review. CVCA Intelligence, Statistics Canada. Table 36-10-0402-01 Gross domestic product (GDP) at basic prices, by industry, provinces and territories (x 1,000,000)

Reviewing data at a city-level and over time in Figure 2 shows that Calgary and Edmonton have been among the top cities for venture capital deals in Canada in recent years but continue to lag significantly behind Toronto and Montreal.

⁴ Canadian Venture Capital Market Overview 2022 Year in Review, CVCA Intelligence.

Figure 2: Top markets in Canada (2022) by number of venture capital deals, 2019-2022⁵

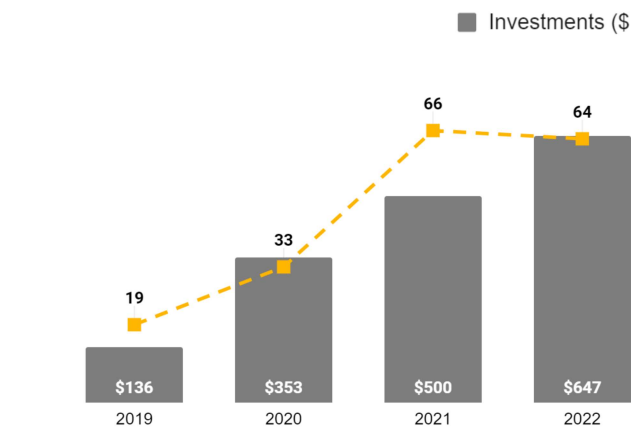


*n/a = not available, as city was not among markets in number of annual deals (CVCA)

Source: CVCA Intelligence Annual Year End Venture Capital Reports 2019 - 2022

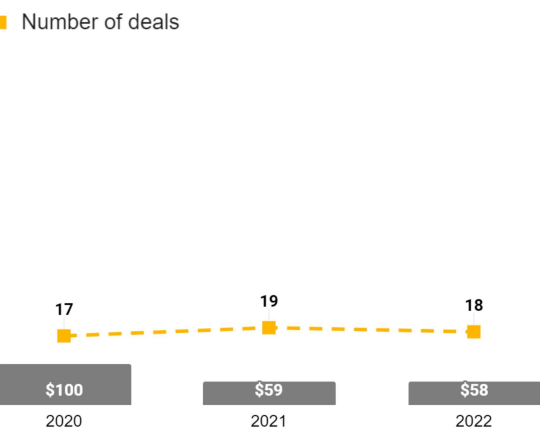
Figure 3a shows that the Calgary market for venture capital increased in value between 2019 and 2022, reaching \$647 million in 2022, up from \$136 million in 2019. The number of deals has also been on an upward trend since 2019, increasing from 19 deals to 64 in 2022. The number of venture capital deals done in Edmonton remained fairly consistent between 2020 and 2022, but overall value saw a decrease from \$100 million to \$59 million between 2020 and 2021.

Figure 3-a: Venture capital financing trends in Calgary, 2019 - 2022



Source: CVCA Intelligence Annual Year End Venture Capital Reports 2019 - 2022

Figure 3-b: Venture capital financing trends in Edmonton, 2020-2022⁶



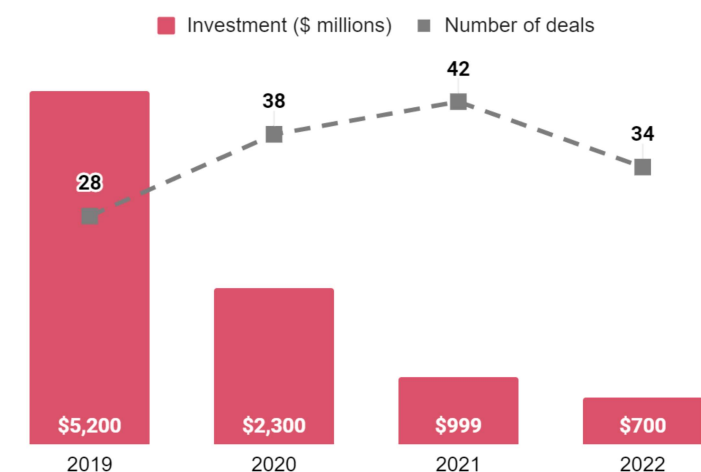
⁵ Data not available for Edmonton in 2019 in CVCA VC market report.
⁶ 2019 data not available for Edmonton in CVCA annual report.

1.3 Private equity trends in Alberta

As identified in its Technology and Innovation Strategy (ATIS), Alberta aims to attract more private capital into the technology and innovation ecosystem to continue to support businesses as they grow and further research and development in the province.

Since 2019, Alberta has faced a downward trend of funds raised through private equity, falling over 86% from \$5.2 billion to \$700 million in 2022. However, the significant private equity value in 2019 was largely driven by the \$5 billion purchase of Calgary's WestJet Airlines by Onex Corporation, which comprised 96% of the province's annual private equity investments in that year.⁷ Over the same time period, Canada has also experienced a decline in the total value of private equity deals, dropping from \$19 billion in 2019 to \$10 billion in 2022.

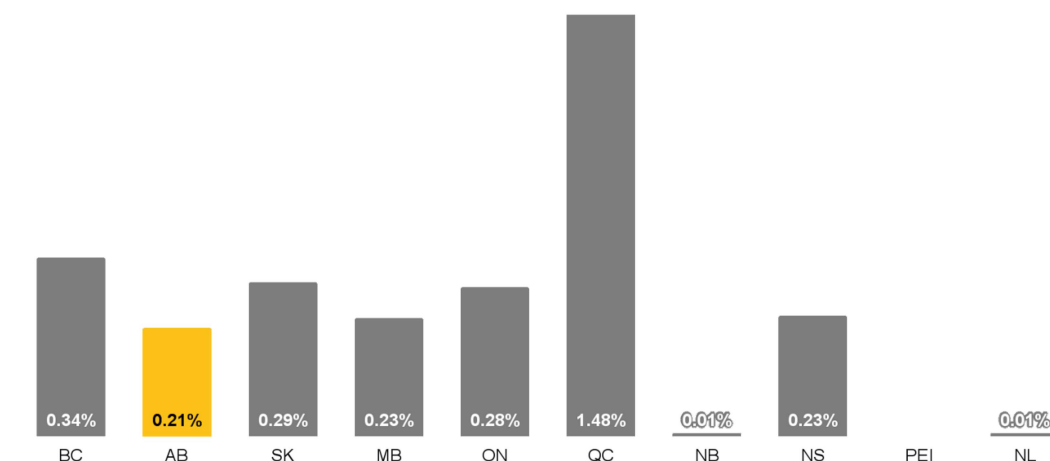
Figure 4: Private equity trends in Alberta, 2019 - 2022



Source: CVCA Intelligence Annual Year End Private Equity Reports 2019 - 2022

Relative to other provinces Alberta's Private Equity investment levels relative to GDP are around the median. In 2022, Alberta recorded 34 private equity deals valued at approximately \$700 million, with top sectors being oil and gas/power (29% of deals), industrial and manufacturing (21%) and ICT (15%). In Q1 2023, Alberta had \$88 million invested into 9 private equity deals. The province of Québec stands out on this metric as it is consistently ranked as the top province for private equity deals in Canada, particularly relative to its provincial GDP. This is driven by strong private equity markets in Montréal, Québec City and Montérégie.

Figure 5: Private equity investment as a percentage of provincial GDP by province, 2022

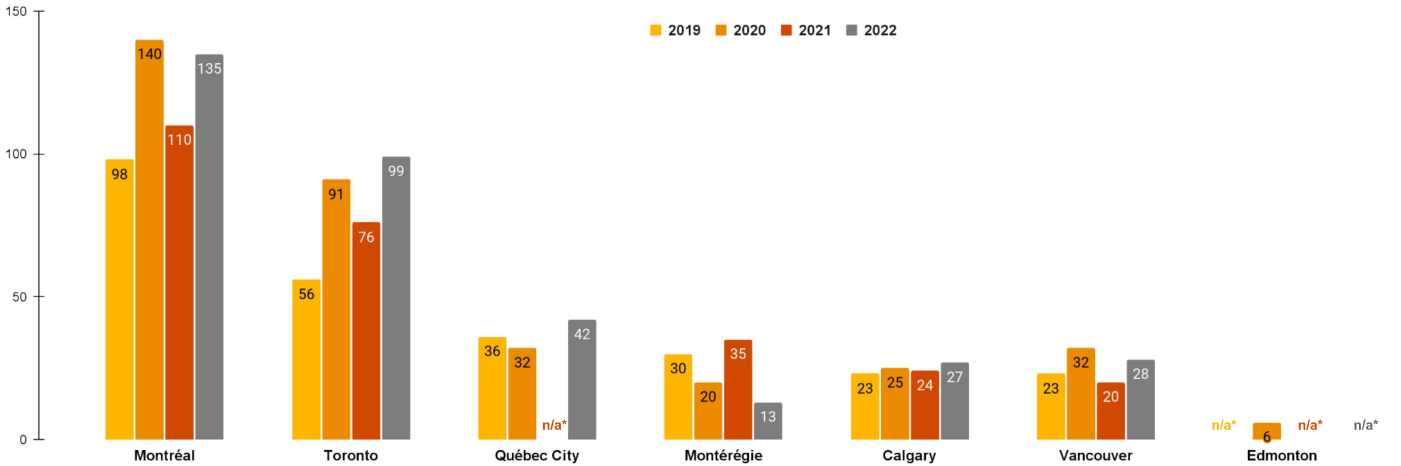


Source: CVCA Intelligence Annual Year End Private Equity Reports 2019 - 2022

⁷ CVCA Intelligence Annual Year End Private Equity Report 2019

The City of Calgary is the location for the majority of the private equity deals within the province of Alberta. As shown in the figure below, the number of deals has remained relatively steady over the past four years, but has been increasing slightly since 2019. Edmonton was among the top cities in terms of overall funding through private equity deals in 2020, reaching \$203 million in funding through 6 deals, but has since fallen behind other cities so is only reported in this data set in 2020, with no data available for other years. During Q1 2023, Calgary reached \$80 million across 3 private equity deals, while Edmonton reached \$8 million across 3 deals. Nearly 100% of the value of these deals (\$88 million total) were minority investments, as opposed to buyouts or add-ons.⁸

Figure 6: Top markets in Canada (2022) by number private equity deals, 2019-2022⁹



*n/a = not available, as city was not among top markets in number of annual deals (CVCA)

Source: CVCA Intelligence Annual Year End Private Equity Reports 2019 - 2022

⁸ Q1 2023 Canadian Private Equity Market Overview. CVCA Intelligence
⁹ Edmonton was only among the top 10 cities in 2020 and therefore PE data was not available in CVCA annual reports for other years. CVCA data also not available for Quebec City in 2021.

2. Impact of the 2023 Conference

This section summarizes our approach and presents the key findings of the study.

2.1 Our approach

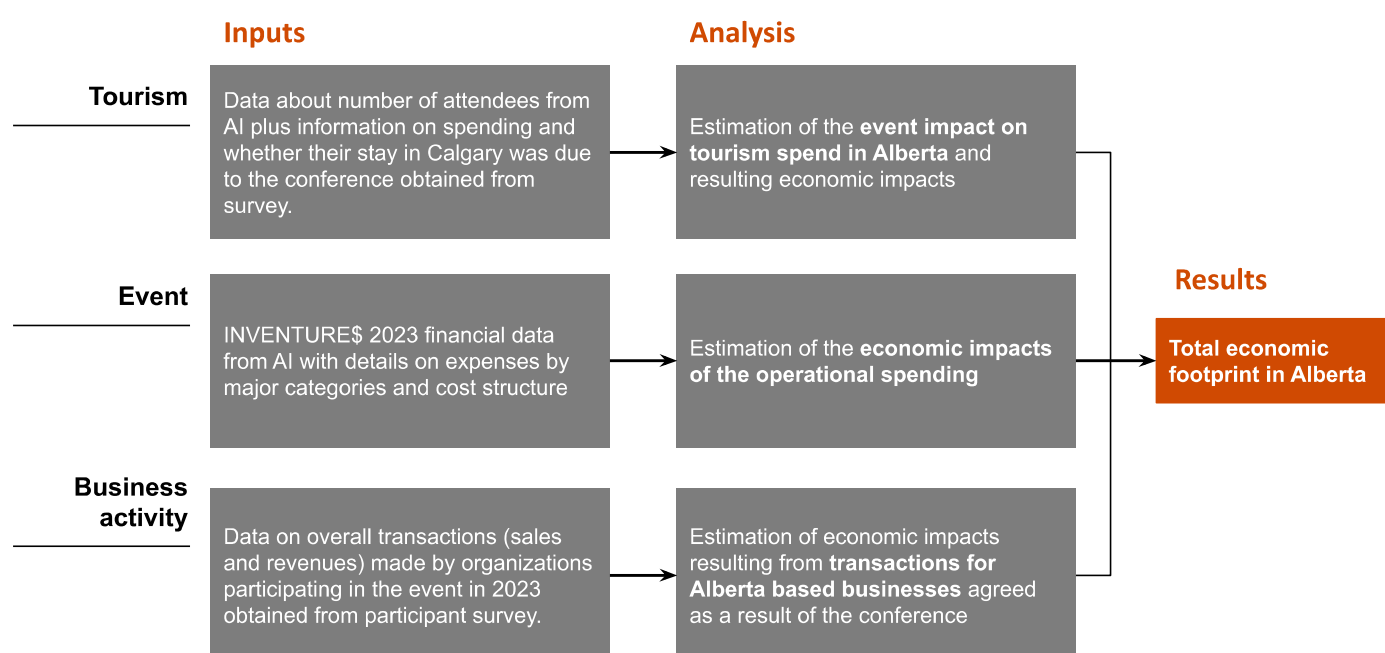
In assessing the tourism and business activity impacts of the Conference, we have relied on data collected through a survey of the participants that was distributed to all attendees immediately after the Event. The data for the assessment of staging the Conference is based on data provided by Alberta Innovates on operating expenditures. In all cases, the data collected on spending, revenue and investment were converted to GDP and then the wider impacts across the Alberta economy were estimated using input-output multipliers.

The economic footprint was therefore estimated at the direct, indirect and induced levels:

- **Direct impacts** result from direct spending related to or facilitated by the Conference.
- **Indirect impacts** arise from the activities of the firms in the supply chain of businesses affected by direct impacts.
- **Induced impacts** are the result of consumer spending by employees of the businesses stimulated by direct and indirect expenditures.
- The **total economic footprint** equals the sum of the direct, indirect, and induced economic impacts.

The key steps in our analysis are also illustrated below. **Appendix A** provides additional details on the approach.

Figure 7: Summary of approach



2.2 Overview of survey and findings

A survey was used to collect key data points from Conference attendees. The survey included questions on:

1. **Organisational characteristics**: including the type of organisation, size and sector of operation;
2. **Tourism**: Importance of the Event in attendees decision to visit Calgary and likelihood of returning in the future as a result of attendance;
3. **Business activity**: Business conducted at the conference or facilitated by the Conference; and

4. **Perception of Alberta as an investment destination:** Likelihood of investing or doing business in Alberta based on conditions such as market access, taxes, and quality of talent.

The survey was distributed to over 3,000 Conference goers and achieved 385 responses, resulting in an overall response rate of 12.4%¹⁰. Other data used in our study was provided directly by Alberta Innovates. The key additional data was a breakdown of procurement spending related to staging the Conference and associated events and the number of Conference attendees. We have limited information available to compare the representativeness of the sample to that of the overall population surveyed. We did compare the distribution of registrant country of origin to the distribution of country of origin for companies survey respondents worked for and these distributions are very similar.

The following are key findings from the survey of Conference attendees:

- 44% of respondents described themselves as **founders or startup owners**. The next largest groups of attendees were potential investors (10%) and employees in a mature business (10%).
- 55% of respondents indicated their company has annual sales, with a median value of **\$500,000** per year.¹¹
- The most common **business size among respondents was between 3 and 10 employees** (39%).
- 77% of respondents indicated their **headquarters are located in Alberta**, with 44% located in Calgary.
- 6% of respondents identified having **headquarters in the USA**, and 5% reported being located **outside of North America**.¹²
- 25% of all respondents stated their business **operates in the health sector**. This was likely driven by a high number of respondents representing startups, who were more likely to operate in the health sector (29%)^{13,14}
 - In contrast, only 18% of mature businesses respondents stated they work in the health sector. **Energy** was the largest sector among mature businesses (41%), while only 12% of startups reported working in energy.
 - After health, the business sectors that most respondents reported working in were **marketing** (19%), **finance** (14%) and **product manufacturing** (14%)
- 18% of survey respondents report **concluding sales and/or investments** for their company during the Conference.
- 60% of respondents stated that their attendance at the Conference increased the likelihood that they will **return to Calgary or Alberta** as a tourist in the future.

Survey recipients were also asked to rank factors they consider to be Alberta's greatest strengths and weaknesses as an investment destination from 1 (significant weakness) to 10 (great strength). The respondent averages for each factor are shown in the figure below.

¹⁰ Given a population of 3,096, the sample size of 385 achieves a confidence interval (also called margin of error) of 4.7% at 95% confidence level.

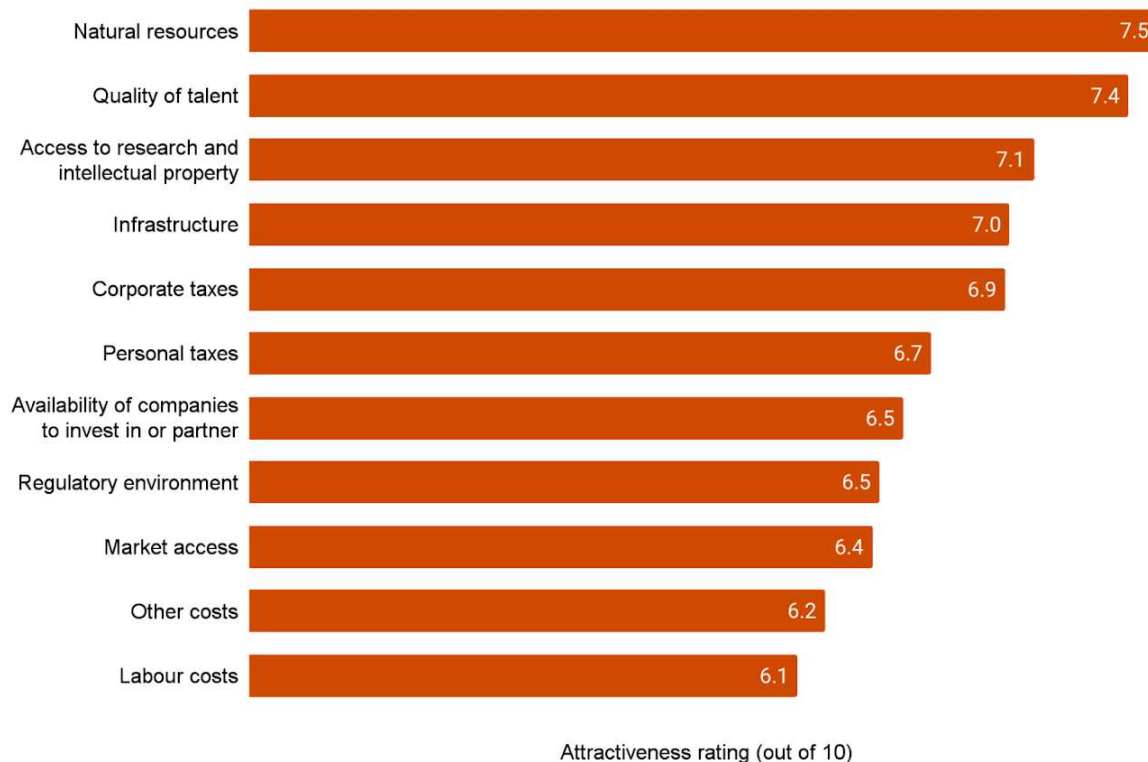
¹¹ Out of respondents who gave a value of \$0 or greater than \$0 to the following question: *If your company has sales, please enter the approximate annual value in Canadian dollars (Enter 0 if you have no sales)*. Excludes those who didn't answer the question. PwC survey, n=337

¹² PwC survey, n=352

¹³ Note that respondents were able to select multiple sectors.

¹⁴ Mature business respondents or startup respondents represent founders or employees of mature businesses or startups, respectively. Source: PwC survey, n=249

Figure 8: Alberta's greatest strengths and weakness as an investment destination



Source: PwC survey, n=385

In free text responses in the survey, several other themes were highlighted by respondents.

- **Start-up investment support:** Increased funding for small start-up ventures, particularly from the federal government, in the form of grants and direct, flexible financing. In addition, hands-on start-up mentoring, and more guidance on how to easily and quickly apply for grants.
- **Investor tax credits:** Return of the Investor Tax Credit program, and reduction of capital gains tax.
- **Reduced red tape:** Improved process for grant review and acceptance, as well as bureaucratic processes (tax code, digital process adoption, business services, etc.) to make it easier to do business in Alberta.
- **Connectivity:** Improved flight and transit connectivity between Edmonton and Calgary, across the province and with the rest of the country.

2.3 Estimated economic footprint of tourism

The importance of the tourism sector was highlighted during the COVID-19 pandemic, when travel was halted and many economies and individual livelihoods suffered as a result of decreased tourism demand and spending, exports and employment.¹⁵ The tourism economy facilitates spending on several areas which can generate economic impacts. These may include:

- **Transportation:** Including passenger services via air, rail, and boat, as well as interurban, charter and tour busses and vehicle rental
- **Accommodations:** Including hotels, inns, hostels, camping and rental properties
- **Food and beverage:** Restaurants and licensed establishments, as well as food service provided by accommodations
- **Meetings and events:** Conventions and business meetings, as well as major events and festivals
- **Attractions:** Recreation and entertainment activities, as well as cultural, natural and historical attractions

¹⁵ Report on the Canadian Tourism Industry. Tourism Industry Association of Canada (TIAC), HLT Advisory and VISA Canada.

We calculate that the 2023 Conference supported \$2.1 million in local GDP via tourism effects, \$1.2 million in labour income and 28 person years of employment as a result of those who came to stay in Calgary due to the Conference, as shown in Figure 9 below.

Figure 9: Economic footprint in Alberta of tourism spending among INVENTURE\$ 2023 participants

	GDP (thousands)	Taxes on products and production (thousands)	Labour income (thousands)	Jobs (full-time equivalent per year)
Direct	\$1,209	\$54	\$755	21
Indirect	\$514	\$18	\$260	4
Induced	\$414	\$52	\$154	3
Total	\$2,138	\$123	\$1,169	27

Source: PwC survey, n=382

Many INVENTURE\$ 2023 participants are based outside of Calgary (57% of survey respondents) and we included questions in the survey to understand both whether they had come to Calgary because of the Conference and whether their visit had increased the likelihood they would return in the future as tourists. Both of these effects provide an incremental benefit to Calgary's tourism economy by driving spending that would not otherwise have occurred in the absence of the Conference.

60% of survey respondents also indicated that their attendance at the 2023 Conference increased the likelihood that they would return to Calgary or Alberta as a tourist in the future. We estimate return tourism spending from these survey respondents has the potential to generate an additional \$1.3 million in direct GDP impacts in the future which is not captured in the table above.¹⁶ More details related to the approach taken for the tourism footprint is provided in **Appendix C**.

2.4 The economic impact of staging the Conference

Spending on local suppliers to stage the Conference also supports economic activity in Alberta, such as spending on the venue, catering, and speaker travel. We calculate that these impacts supported a further \$2.3M in local economic footprint through direct, indirect and induced impacts. This is summarized in the figure below.¹⁷

Figure 10: Economic footprint in Alberta of INVENTURE\$ 2023 direct spending

	GDP (thousands)	Taxes on products and production (thousands)	Labour income (thousands)	Jobs (full-time equivalent per year)
Direct	\$1,414	\$24	\$654	12
Indirect	\$488	\$21	\$272	4
Induced	\$376	\$61	\$140	3
Total	\$2,278	\$106	\$1,065	19

Source: Alberta Innovates, PwC analysis

¹⁶ The potential economic impact of tourism is based on the assumption that those who answered "yes", that the Conference increased the likelihood that they will return to Calgary or Alberta as a tourist, will return as a tourist once in the future.

¹⁷ Totals may not sum due to rounding.

2.5 Business carried out

The most important function of the Conference is to bring entrepreneurs, business people and investors together, encouraging positive connections and ultimately catalyse new business activity. In that context, we calculated the economic footprint associated with sales and investments agreed upon at the Conference or as a result of the Conference.

Over 35% of all survey respondents indicated that they have concluded or are in discussions regarding investments and/or sales as a result of their attendance at the Conference. The figure below presents the total value of sales and investment activity reported by these survey respondents.¹⁸

These values are significant, with \$25.4 million of agreed or potential sales and \$88.5 million of agreed or potential investments reported across the various categories.¹⁹ The largest category reported in the survey was one-time investments under discussion, which amounted to \$69.5 million. The value of investments concluded as a result of the Conference was found to be far lower than those under negotiations, but this was in-line with our expectations, given the short duration of the Event and the timing of the survey.

Figure 11: Reported value of business carried out during the Conference by survey respondents

Type of business	Sum of values reported by survey respondents
Sales	
Concluded one-time	\$1.8M
Concluded recurring annually	\$9.4M
In discussion one-time	\$4.3M
In discussion recurring annually	\$9.9M
Total	\$25.4M
Investments	
Concluded one-time	\$7.8M
Concluded recurring annually	\$1.5M
In discussion one-time	\$69.5M
In discussion recurring annually	\$9.7M
Total	\$88.5M

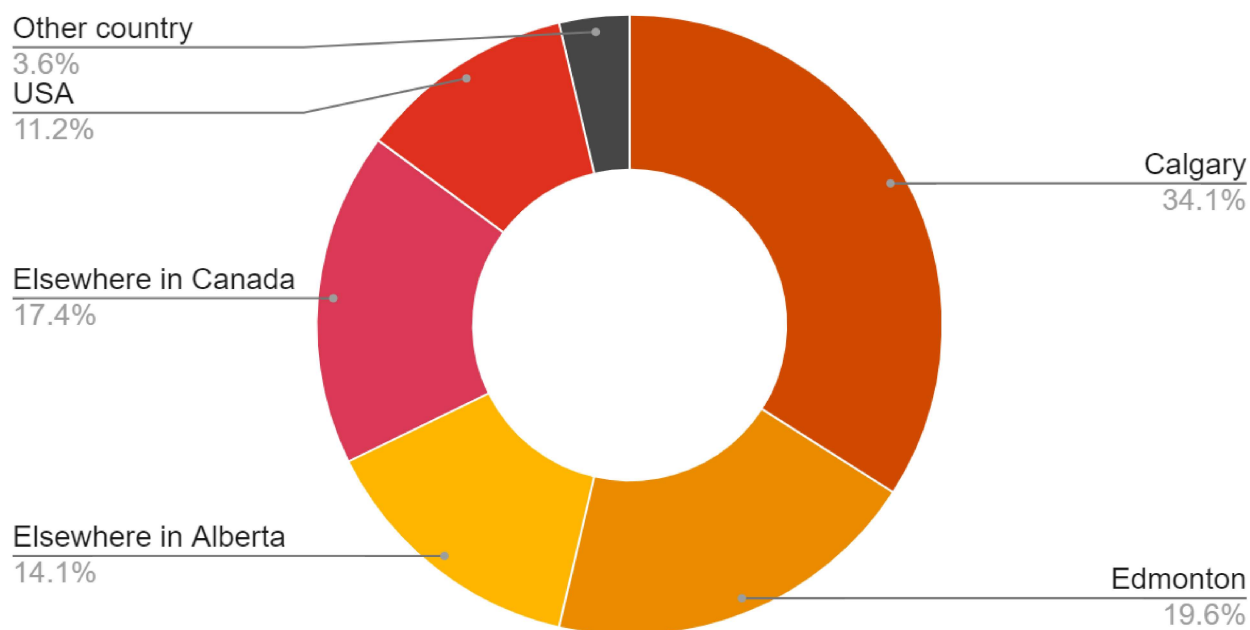
Source: PwC survey, n=136

It should be noted that the majority (68%) of sales and investment transactions reported are expected to take place within Alberta. The remainder of sales and investment transactions are expected to take place outside of the province or outside of Canada. The geographical breakdown is shown in Figure 12 below.

¹⁸ These two responses are independent, i.e. a respondent who indicated having conducted business resulting in sales may have or may have not also conducted investment dealings.

¹⁹ Note these totals only count recurring sales or investments once.

Figure 12: Locations of sales and investment agreements made at the Conference



Source: PwC survey, n=133

The figures reported above only correspond to those attendees who responded to the survey. There may also have been additional deals concluded by non-responders. Consequently, we have produced a range of estimates for total business deals by inferring survey results across the population of Conference attendees who did not respond. This approach assumes the characteristics of people who did not respond to the survey match the characteristics of those who did.

Additionally we have applied a probability to those sales and investments under discussion to estimate the expected value of them which may come to fruition. Whether these deals are completed is highly uncertain as investors may make a decision based on expected returns, level of risk, market size, perceived value of the product, availability of resources, or a combination of many other factors.²⁰ Therefore, we have used a range of assumptions about the proportion of sales and investments currently in discussion that will be successfully concluded. These assumptions are based on input from deals specialists and reviewing the surveys performed to evaluate the 2019 Conference.

Figure 13: Expected value of business carried out during INVENTURE\$ 2023 - Inference of survey results across non-responding population

Type of business		Estimated total value of business conducted at the Conference ²¹
Sales	Concluded one-time	\$14.3M
	Concluded recurring annually	\$71.4M
Investments	Concluded one-time	\$54.4M
	Concluded recurring annually	\$8.2M
Total value of business concluded (one-time and single year of recurring)		\$148.4 million

²⁰ *How Venture Capitalists Make Investment Choices*. Ben McClure July 26, 2022. Investopedia.com

²¹ Totals may not add up due to rounding.

Type of business		Estimated total value of business conducted at the Conference ²¹	
Assumed success rate of deals in discussion at Conference		lower bound: 15% negotiation success rate	upper bound 35% negotiation success rate
Sales	In discussion one-time	\$3.9M	\$9M
	In discussion recurring annually	\$12M	\$28M
Investments	In discussion one-time	\$80.7M	\$188.3M
	In discussion recurring annually	\$11.2M	\$26M
Total expected value of business in discussion (one-time and single year recurring)		\$107.7M	\$251.3M
Estimated total expected value of business conducted (concluded transactions plus share of those in discussion that are concluded, one-time and single year recurring)		\$256.1M - \$399.7M	

Source: PwC survey, n=136

Based on this analysis our overall calculations for the total expected business concluded as a result of the conference are shown in Figure 13 above. Inferring the value of concluded sales and investments to the population who did not respond to the survey would result in an calculation of \$148.4 million in sales and investments agreed upon at the Conference²².

Of the business deals under discussion at the Conference, based on various assumptions about the likelihood these reach fruition, we calculate the expected value of business conducted could eventually reach \$256.1 million - \$399.7 million.

²² As before, this only counts a single year of recurring revenues or investments to be conservative.

2.6 Economic footprint of sales and investments in Alberta

Finally, we have calculated the expected value of the economic footprint in Alberta of these deals by converting the revenue and investment values to GDP and applying input-output multipliers to assess indirect and induced effects.²³ The tables below show the potential economic footprint in Alberta resulting from the estimate of total business carried out during INVENTURE\$ 2023, using the low (15%) and high (35%) negotiation success rates outlined in Figure 13.²⁴

Figure 14: Economic footprint in Alberta of business carried out during INVENTURE\$ 2023 - low negotiation success rate²⁵

	GDP (millions)	Taxes on products and production (millions)	Labour income (millions)	Jobs (full-time equivalent per year)
Direct	\$97.3	\$5.2	\$46.1	656
Indirect	\$39.4	\$1.6	\$22.0	302
Induced	\$27.2	\$4.3	\$10.1	190
Total	\$163.9	\$11.1	\$78.2	1,148

Source: PwC Survey, n=136

Figure 15: Economic footprint in Alberta of business carried out during INVENTURE\$ 2023 - high negotiation success rate²⁶

	GDP (millions)	Taxes on products and production (millions)	Labour income (millions)	Jobs (full-time equivalent per year)
Direct	\$151.9	\$8.1	\$72.0	1,024
Indirect	\$61.5	\$2.4	\$34.4	471
Induced	\$42.5	\$6.8	\$15.7	297
Total	\$255.9	\$17.3	\$122.1	1,792

Source: PwC Survey, n=136

Study limitations and uncertainty

The most significant result from the research is the estimate of total business transactions which we have based on inferring the value of deals reported in our survey across the entire population of the Conference's participants along with assumptions about the share of deals under negotiation that will successfully be concluded. Whilst this inference approach is commonly used when analyzing the results from surveys, it is important to highlight several key assumptions underpinning it, including:

- That there is no sampling error in the survey responses. Therefore survey respondents represent a random sample of the population and do not overrepresent or underrepresent certain groups. Given the limited information about the population characteristics, we have not been able to perform a detailed test of this assumption.

²³ The transaction values are converted to direct GDP using standard ratios for output and labour income to GDP from Statistics Canada. Sales are equated to economic output whilst investment is equated to labour income based on the assumption that in start-up enterprises, the bulk of costs consist of employee wages and salaries.

²⁴ We have used a conservative assumption in the treatment of recurring investment and sales and assumed these only apply for a single year in these estimates. These assumptions are based on input from deals specialists and reviewing the surveys performed to evaluate the 2019 Conference.

²⁵ Totals may not add up due to rounding.

²⁶ Totals may not add up due to rounding.

- That there is no measurement error in the survey responses (i.e. respondents have answered the survey accurately and truthfully and correctly interpreted the question).
- That there is no coverage error in the survey responses (i.e. it was sent to all Conference attendees and did not miss any groups). Given the survey was sent to all people who registered for the Conference we are reasonably confident that any coverage error is low.

As noted previously we plan to conduct a follow up survey six to ten months after the Conference which will help us to refine this estimate by better understanding whether deals under negotiation were finalised.

2.6 Results summary

The following table presents a summary of the calculated economic footprint of the INVENTURE\$ 2023 Conference.

Figure 16: Summary of INVENTURE\$ 2023 total GDP footprint in Alberta

Category	Economic footprint (contribution to provincial GDP)
Tourism	\$2.1 million
Direct spending on Event	\$2.3 million
Business carried out	\$163.9 million - \$255.9 million



Appendices

Appendix A: Additional detail on methodology

Statistics Canada Input-output modelling

The economic footprint of the INVENTURE\$ Conference captures several areas of spending which will have a significant impact on companies in the local economy, the employees of these companies and the whole supply chain.

These include:

- The value of Alberta Innovates spending on suppliers related to operating the Conference.
- The value of tourism spending among INVENTURE\$ participants.

Our methodology for measuring these types of economic footprint is to use an input-output model of the Alberta economy to estimate economic multipliers. The input-output model will work as follows: spending on the Conference or resulting from the Conference will support employment in industries through the purchase of goods, equipment, and services from companies. These companies, in turn, purchase goods, equipment, and services from other companies to meet the demand generated, resulting in indirect impacts.

Furthermore, employees of affected industries and employees in other companies supported by the affected industries' expenditures also spend a large portion of their earnings in the local region, which supports jobs in other industries as well. Consequently, the above economic footprint will be estimated at the direct, indirect and induced levels:

- Direct impacts result from direct spending due to the Conference.
- Indirect impacts arise from the activities of the firms providing inputs to the industries' suppliers (in other words, the suppliers of its suppliers).
- Induced impacts are the result of consumer spending by employees of the businesses stimulated by direct and indirect expenditures.

The total economic footprint equals the sum of the direct, indirect, and induced economic impacts.

The fundamental philosophy behind economic footprint analysis is that spending on goods and services has attendant impacts throughout the economy. For this project, the following measures of economic activity was assessed:

- Employment – the number of jobs created or supported by expenditures (including those supported in the broader economy).
- Labour income – the amount earned by the employment generated by the industries' expenditures.
- Value added or contribution to GDP – the value added to the economy, or the unduplicated total value of goods and services. GDP includes only final goods to avoid double counting of products sold during a certain accounting period.
- Tax contribution – the amount of tax revenues generated from taxes on products (e.g. trading profits, gas tax, sales taxes, and excise taxes), taxes on production at the federal, provincial and municipal levels (e.g., property taxes).

Survey bias assessment

The characteristics of survey respondents should on average be similar to those of all Conference participants in order to draw conclusions from the survey applicable to the entire population of the Event. The only somewhat comparable information available to us on the characteristics of the entire population of Conference participants was their country of origin. We compared that information to the location of the companies' headquarters, as reported by survey respondents. We found that the two distributions were similar with 89% of registrants and survey respondents working for organisations

with headquarters in Canada, 6% from the USA and 5% from other countries. While this comparison tends to support the hypothesis of no survey bias, it does not constitute a full statistical procedure to test sample representativeness.

Economic footprint analyses

Tourism footprint analysis

Our survey collected information on whether attendees were visiting Calgary purely for the 2023 INVENTURE\$ Conference. Assumptions on spending by attendees were based on previous data including what share of attendees stay in paid accommodation, the number of nights spent in Calgary, and how much they spent during their time in Calgary. This spending data is segmented between food and restaurants, souvenirs, hotel and accommodation, entertainment, and transportation (involving both local, such as taxis and transit, and getting to Calgary for the Conference).

We defined tourism spending as only the share of attendees who stayed in paid accommodation during the Conference. This is likely to be a conservative estimate, as it excludes both the spending of those accompanying any Conference attendees, as well as any additional spending of people who are already based in the Calgary area (those assumed not staying in paid accommodation). We have assumed that the survey respondents are representative of the Conference attendee population as a whole, and our estimates of the economic impacts generalize the survey findings across all Conference attendees. The wider indirect and induced economic impacts associated with tourism expenditures of Conference attendees are estimated using Statistics Canada Input-Output multipliers.

Event footprint analysis

The economic footprint of the operating expenses of staging the INVENTURE\$ 2023 Event was also evaluated using Statistics Canada Input-Output multipliers. The input to this analysis is spending data by category provided by Alberta Innovates.

Value of business carried out analysis

Our survey asked Conference participants about the value of new business conducted or at the Conference (in terms of revenue and investments, one-time and recurring deals, concluded deals and those under discussion). We present the results of this in three ways:

1. Value of business reported directly by survey respondents;
2. An estimate of the total value of business conducted at the Conference based on a generalization of these results across the non-reporting attendees of the Conference (remaining 87.6% of participants who did not answer the survey)²⁷; and
3. An estimate of the GDP generated by the sales and investment deals conducted at the 2023 Conference.

²⁷ The key assumption we have employed in this estimate is that the deals reported by the survey respondents can be generalised across the whole population. Therefore those not answering the survey are assumed to have conducted the same level of transactions as those who did complete the survey.

Appendix B: Limitations

Receipt of new data or facts: PwC reserves the right at its discretion to withdraw or make revisions to this report should we receive additional data or be made aware of facts existing at the date of the report that were not known to us when we prepared this report. The findings are as of September 2023 and PwC is under no obligation to advise any person of any change or matter brought to its attention after such date, which would affect our findings.

Reliance on third party data/information: We relied upon the completeness, accuracy and fair presentation of all the information, data, advice, opinion or representations obtained from third parties, public sources and the Alberta Innovates, which is detailed under the Scope of our Work section (collectively, the “Information”). We have not conducted any audit or review of the Information of, nor have we sought external verification of the Information. We accept no responsibility or liability for any losses occasioned by any party as a result of our reliance on the financial and non-financial information that was provided to us or found in the public domain.

Input-output analysis: Input-output analysis (a model used to estimate output, Gross Domestic Product (“GDP”) and employment impact) does not address whether the inputs have been used in the most productive manner or whether the use of these inputs in this industry promotes economic growth by more than their use in another industry or economic activity. Nor does input-output analysis evaluate whether these inputs might be employed elsewhere in the economy if they were not employed in this industry at the time of the analysis. Input-output analysis calculates the direct, indirect and induced economic impacts that can reasonably be expected to affect the economy based on historical relationships within the economy. This analysis does not take into account fundamental shifts in the relationships within the economy that may have taken place since the last estimation of multipliers by Statistics Canada, nor shifts that may take place in the future.

Use limitations: This report has been prepared solely for the use and benefit of, and pursuant to a client relationship exclusively with Alberta Innovates. We understand that Alberta Innovates may share our report with third parties. Alberta Innovates may release this report to third parties only in its entirety and any commentary or interpretation in relation to this report that Alberta Innovates intends to release to the public either requires PwC’s written consent or has to be clearly identified as Alberta Innovates’s own interpretation of the report. PwC accepts no duty of care, obligation or liability, if any, suffered by Alberta Innovates or any third party as a result of an interpretation made by Alberta Innovates of this report.

Further, no other person or entity shall place any reliance upon the accuracy or completeness of the statements made herein. In no event shall PwC have any liability for damages, costs or losses suffered by reason of any reliance upon the contents of this report by any person other than Alberta Innovates.

This report and related analysis must be considered as a whole: Selecting only portions of the analysis or the factors considered by us, without considering all factors and analysis together, could create a misleading view of our findings. The preparation of our analysis is a complex process and is not necessarily susceptible to partial analysis or summary description. Any attempt to do so could lead to undue emphasis on any particular factor or analysis. We note that significant deviations from the above listed major assumptions may result in a significant change to our analysis

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