

Alberta's Economy Sector Snapshots Oil, Gas & Mining

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Oil, Gas & Mining

Based on the latest data pre-COVID (2018 or 2019)



The oil and gas industry, along with mining, is the backbone of the Alberta economy, adding \$95B to provincial GDP in 2019.
The industry also accounts for a large majority of Alberta's exports.
Representing the country's largest resource base, the industry is Canada's largest producer of conventional oil, heavy oil, and natural

• Because of its size and growth, it has long supported other parts of the Alberta economy, both directly via industries like construction and manufacturing, and indirectly due to the high incomes

• Over the past 5 years, the industry has transformed to compete in a lower-price economy and to meet national emissions reductions

These forces have driven automation, cost containment measures, and investments in clean energy and technologies.
The industry now produces a similar amount of value but with a much smaller workforce, accounting for just 6% of employment.
Capital investment and R&D spending have also both declined: both are about half of their value of 5 years ago. Still, the industry remains the largest investor of clean tech.



Oil, Gas & Mining: Key Trends & Forces



Emissions

Increasingly, oil and gas businesses compete not just on the basis of price but also on the basis of emissions. Though work has been done, more will be needed due to increased GHG focus among investors, policies put in place by federal and provincial governments, and a potential emissions border-adjustment in the US on the horizon.



Market Access

The industry faces issues of market access, driven by lengthy and often politicized project approvals. Over the last few years, several high-profile projects—such as the Teck Resources \$21B oil project known as the Frontier mine project and Keystone XL—have been cancelled. For those which are approved, it takes over four years on average in the case of pipeline projects.



Automation

The industry will remain fundamental to Alberta but may not be the driver of employment in the same way as before. A recent report estimates another <u>30% of Canada's oil and gas</u> jobs could be automated over the next 20 years.



Oil, Gas & Mining: SWOT Analysis

Alberta's Economy: Sector Snapshots: Oil, Gas & Mining

Strengths

- The world's third largest proven crude oil reserves
- A well-developed cluster of supporting and spin-off industries alongside a skilled and innovative workforce
- A conducive fiscal and regulatory environment
- Major progress made on emissions intensity and cost of production through technology use and production efficiencies
- Largest investor of clean tech
- The Alberta Carbon Trunk Line, Canada's largest CCUS linear transportation infrastructure



- Lengthy and costly project approval processes and consultation requirements
- 2023), slower than the rate of population growth though projects to decrease emissions like The Pathways show opportunity for job creation
- Research on Canada's reputation shows a loss of trust



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Opportunities

- Adjustments to the fiscal and regulatory environment to support emissions reduction
- An abundant supply of affordable blue hydrogen and experience in hydrogen production and CCUS
- An opportunity to be a leader in low-emissions technologies and solutions—with the support of collaborative organizations like CRIN, COSIA, the Oil Sands Pathways to Net Zero
- Greater use of advanced digital and AI technology to optimize decision-making across value chains, reduce costs and increase productivity
- The Alberta Indigenous Opportunities Corporation (AIOC) funding of broad-based energy projects can allow for greater Indigenous economic participation



- Difficulty finding workers in areas of need such as hydrogen in Alberta; many are in Europe and other areas ahead of Canada in low-carbon energy



Weaknesses

• Higher carbon emissions per barrel than many competitors, in a world with investor emphasis on emissions and ESG

- Continued market access and pipeline challenges
- A low rate of employment growth expected (just 1% through

- Uncertainty of future energy demand as manufacturers and countries commit to fully switch to electric vehicles
- New US climate change policy, including a possible US Carbon **Border Adjustment**
- Investment flight to lower-carbon or carbon-neutral
 - technologies and energies
- Policies associated with decarbonization and the federal
 - government's net-zero emissions commitment by 2050 could be harmful to the industry



Alberta's Economy: Sector Snapshots Agri-Food Production & Processing

Agri-Food Production & Processing

Based on the latest data pre-COVID (2018 or 2019)



- billion industry.
- years.
- five years.
 - output.
 - continue.





• The agri-food industry—which includes traditional agriculture and the production of food and beverages—is a roughly \$10

• About 25% of Alberta's land mass is devoted to agriculture, spanning 50 million acres and over 40,000 farms. Top agricultural products include beef, canola, wheat, pork, and dairy. • Agri-food is an important export, representing 10% of the value of exports. It has also shown modest growth over the past five

• The industry has shown an increase in productivity over the last

• As a result, employment has increased more modestly than

• While no projections are available for the food and beverage part of the sector, agriculture projections expect this trend to

• Agri-food represents around 3% of the labour force, with lower wages typically than other industries. • Capital spending is roughly in line with its share of the economy but it has declined slightly over time.

Agri-Food Production & Processing: Key Trends & Forces



Growing Demand

With population and economic growth, especially in Asia and Africa, global food demand is expected to increase. According to one report by the Harvard Business Review, food demand will increase by 50% by 2050. Demand is expected to grow for both meat and plant-based protein.



Technology

Agri-food is expected to become increasingly technology-driven and digitally connected, affecting every aspect of how products move from producer to consumer. New processes and digitization will play a key role in both adding value and increasing the efficiency of the industry.



Sustainability

Alberta's agri-food industry will increasingly need to produce more food with less inputs—less land, water and environmental footprint—while weathering the literal storms of increasingly challenging and unpredictable weather. It will also increasingly need to adopt or at least be able to compete with innovative practices like vertical farming, hydroponics, cultured meats, etc.



Agri-Food Production & Processing: SWOT Analysis



Strengths

- Vast tracts of arable land and natural pastures
- Largest cattle inventory in Canada
- A wide range of products, from wheat and barley to livestock to plant protein created from peas
- Industry ranked number one for quality and safety globally (Global Food Security Index – Rankings and trends 2020)
- A leader in sustainable practices such as rotational grazing and zerotillage practices
- 22 research facilities, including the Food Processing Development Centre in Leduc, a world-class facility which provides research, development, and commercialization services
- One of the lowest users of pesticides per-hectare in the world



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- 2023.

Opportunities

- Global food demand <u>expected to grow</u> by over 50% over the next 30 years
- Opportunity with respect to the global carbon offset market with the potential for technology development and measurement
- Increased processing, value-added products, and branded food manufacturing, including plant-based meat alternatives
- Greater use of AI, guantum computing, and robotics can increase sustainability and traceability of the supply chain; an emerging technology ecosystem, led by the Smart Farm at Olds College
- New innovations such as turning livestock waste into fuel
- The potential for an energy and transportation corridor which would connect Alberta to the coast with a container port in Prince Rupert
- Vertical farming and greenhouses

- **Threats**

Alberta's Economy: Sector Snapshots: Agri-Food Production & Processing

Weaknesses

• Employs a small and declining share of the workforce, which, according to the province's projections, is expected to decline 1.2% annually from 2019 to

- Rural connectivity is behind, limiting the use of new technologies such as new farm data systems and technology-based security devices
- Slow, often cumbersome regulations
- Relatively low R&D spending to enable the kind of transformation likely to occur in the agri-food industry over the next decade
- Transportation network capacity cannot quickly adapt to production fluctuations
- Persistent labour shortages and an ageing workforce
- Lack of provincial government focus found in Saskatchewan and Manitoba

- Unexpected impacts of weather, markets, trade, and geopolitics
- Dry summers could become more commonplace
- Wildfires could increasingly impact crop yield
- A growing emphasis on protectionism
- Competition in innovative practices like vertical farming, cultured meats,
- and hydroponics which could displace Alberta's traditional market
- Dependence on Temporary Foreign Workers to fulfil seasonal needs



Alberta's Economy: Sector Snapshots Sector Snapshots Construction

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Based on the latest data pre-COVID (2018 or 2019)

VALUE	Economic Value \$24B 7% -40% v 5 years ago	Building Permits \$12B -36% v 5 years ago
EMPLOYMENT	Employment 174k 9% -19% v 5 years ago	Median Wages ~\$32/hour +13% v 5 years ago
NVESIMENI	Capital Investment \$1.3B 2% -41% v 5 years ago	R&D \$38M 3% *data unavailable for other years*

- Alberta's construction industry adds about \$24 billion to the Alberta economy, representing 7% of GDP, pre-COVID.
- Since 2014, the industry has decreased 40% in GDP contribution, largely because of a decrease in capital spending in the energy sector.
 - Profits of SMEs in the industry—though still positive overall have declined by 58% from 2013 to 2018.
 - This is due to higher business expenses combined with limited revenue growth.
- employment in the industry is down 19% versus 5 years ago. relatively low, accounting for just 2% of the provincial total, down 40% vs 5 years ago.
- Employment has not decreased by as much as economic value: • Capital investment spending by construction companies is

- There are about <u>52,000</u> construction firms in the province.
 - Compared to other industries, these firms tend to be smaller:
 - 40% of construction workers work for firms with 20 employees or less while 24% work for firms with 100 or more.

Construction: Key Trends & Forces



Energy

The industry has been weighed down by the collapse in commodity prices primarily due to the direct impact on construction but also due to the indirect impact of income losses on demand for new homes. This has led to a shift in the industry: while commercial construction accounted for 34% of the total value of building permits in 2014, more recently it accounts for just 21% while residential is the lion's share (nearly 60%).



Public Projects

A lack of transparency of public projects, as well as the reality that P3 projects change with political party supports, limits the industry's ability to plan. This limits the industry's time and ability to recruit workers into the skilled trades.



Technology

Not unlike other industries, the jobs and skills within construction are evolving. The Alberta Construction Association review of the literature by the World Economic Forum found: "The picture that emerges is one of rapid change in which industry embraces skill sets to utilize digitization and automation to maximize productivity and encourage recruitment of new workers."



Construction: SWOT Analysis

Strengths

- The housing market remains relatively affordable compared with other provinces in Canada
- Alberta's higher average income drives strong demand for housing
- Population growth due to international immigration ensures a steady influx of new individuals to the province
- Alberta is home to several leading international construction firms
- World-leading expertise in energy infrastructure
- Commercial construction experienced at successfully delivering P3s and under other collaborative forms of delivery such as Integrated **Project Delivery**



Threats

- elevated

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Opportunities

- The relative affordability means Alberta has the potential to attract prospective Albertans, increasing demand through greater advertising in more expensive markets
- Increasing efficiencies of commercial buildings and homes in support of federal net-zero targets and new infrastructure required as a part of the energy transition
- Greater integration of the North American supply chain to improve the certainty, cost, and speed of movement of inputs in construction
- Heavy investment into the trades and technology programs at schools like NAIT and SAIT to increase the supply of qualified workers
- Coordination of government and industry of future projects through the creation of a long-term capital plan





Weaknesses

• Profitability challenges among SMEs

- Dependent on Alberta's oil and gas industry and the ups and downs and longterm uncertainty of the industry
- Commercial construction remains weak and well below the levels of a few years ago
- Long delays in permitting times inhibit progress
- Below average spending on R&D and innovative practices
- Supply chain and commodity price uncertainty
- Lack of transparency and unexpected swings in public infrastructure spending limits the industry's ability to plan and increases cost to taxpayers
- Decision-making process of the province is often slow, increasing costs in a rigid delivery schedule

- Limited workers in the skilled trades and need for upskilling among current workforce
- Historical reliance on the energy industry which is showing limited capital investment
- The uncertain future of the downtown commercial cores of Edmonton and, in particular, Calgary, while vacancy rates remain
- More permanent changes to the nature of work post-COVID which could impact commercial real estate development
- Declining interprovincial migration among young Canadians from other provinces to Alberta

BUSINESS COUNCIL OF ALBERTA



Alberta's Economy: Sector Snapshots Tourism

Tourism

Based on the latest data pre-COVID (2018 or 2019)

VALUE	Economic Value \$6.58 1.94% -1.5% v 2018	Person Visits 34.7M -1.5% v 2018	
EMPLOYMENT	Employment 68k 3% -19% v 5 years ago	Total + Provincial Tax Contribution \$1.1B \$371M	
VISITORS	Visitors by OriginAlberta82%Other Canada12%Overseas3%US3%	Average SpendingAlberta\$151Other Canada\$402Overseas\$828US\$1,119	

- Tourism is a \$6.5 billion industry in Alberta, representing 1.94% of provincial GDP, pre-COVID.
- The industry encompasses a range of businesses used by tourists from hotels to gift shops to bike rentals.
- Canadians—from other provinces as well as Albertans traveling within the province—make up the majority of tourism activity in Alberta, including spending and visits, accounting for about 75% of spending and about 94% of visit.
- Visitors from all over the world come to Alberta, too.
 - American tourists account for the most visits and dollars with 1 million visits and \$961M in spending annually.
 - People from the UK, China, and Japan are Alberta's next most common visitors.
- These dollars ar province.
- Additionally, they also support government coffers: bringing in \$1.1 billion in federal tax revenue and \$371 million in provincial revenue.

• These dollars and visits support the equivalent of 68k jobs in the

Tourism: Key Trends & Forces

COVID

The biggest question for the tourism sector is the impact of COVID in the medium and long-term. One question is when international travel will fully return. Another question is if business travel will ever fully return. The latter is particularly important with respect to American travelers: Americans are more likely to come for the purpose of business than other travelers (22% compared with 10% of overseas travelers). They also spend more than Canadian travelers.



Growth Plans

Though the plan has yet to be revealed, the provincial government has set a <u>goal</u> to nearly double tourism revenue by 2030 to \$20 billion. This would require increasing the brand awareness of Alberta as a top destination for travel, increasing the number of tourists, and, likely, increasing opportunities for travel across the province in order to limit congestion and overcrowding.



Climate

Changing weather is changing the mix and availability of seasonal tourist activities. The sector is vulnerable to increasing wildfire smoke and shortened ski seasons and the longer-term impact on wildlife and biodiversity.





Tourism: SWOT Analysis

Alberta's Economy: Sector Snapshots: Tourism

Strengths

- Alberta's natural beauty, climate, and outdoor recreation opportunities
- Banff and Jasper are by far the two most widely visited national parks in Canada
- A number of world-class tourist destinations including Banff, Lake Louise, Waterton, and Drumheller
- Easy access via two international airports and an Alberta-based airline
- Unique-to-Alberta experiences which attract tourists from all over the world such as the Calgary Stampede, and the Edmonton Mall
- Travel Alberta, an organization responsible for the promotion of Alberta as a tourism destination



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Opportunities

- Improved accessibility across the province such as the Calgary-**Banff Rail Project**
- Providing more tourism experiences that also balance sustainability
- Local community input into development and strategy
- Encouraging growth in lesser-known attractions and areas
- Pent-up demand post-COVID for travel and experiences
- Growth of the film and television industry, supported by the Film & Television Tax Credit, can help to build brand awareness of the province
- Indigenous cultural tours and an emphasis on authentic tourism experiences



- Dependence on Temporary Foreign Workers to fulfil seasonal needs



Weaknesses

Highly seasonal demand

- Major destinations like Banff are congested and expansion opportunities are limited
- Lack of affordable workforce housing
- Despite an announcement and goals to more than double the size of the industry by 2030, the sector currently lacks a plan for growth
- Accessibility limitations for some of Alberta's top tourist attractions
- Air travel costs limit potential visitors from within Canada
- Popular destinations like Banff could be unaffordable for lower-income Albertans

Threats

- Longer-term consequences of COVID on consumers interests, and ease of travel, especially internationally
- The uncertain role of business travel in the future, which is a main driver of visits from the US
- Changing weather patterns impacts, especially with respect to wildfires in the summer and a shortened ski season
- Potential changes in exchange rates which could make it more costly for American tourists

BUSINESS COUNCIL OF ALBERTA

Alberta's Economy: Sector Snapshots

December 202

Technology

Technology

Based on 2015 or 2020 data, depending on data availability

Economic Value (2015)

\$18B | 5%* *Estimates based on Alberta's share of tech employment, National GDP was \$117B and Alberta represented 15% of total tech employment. The State of Canada's Tech Sector, 2015 report

Employment

(2015)

107k 4.8%*

*2015 estimate based on The State of Canada's

Tech Sector, 2015 report

Venture Capital

(2020)

\$455M*

+100% v 2019

*Canadian Venture Capital Private Equity

Association Year End 2020 report

R&D (2015)**\$1.4B** 40%*

based on Alberta's share of tech employment, National R&D was \$9.1B and Alberta represented 15% of total tech employment. The State of Canada's Tech Sector, 2015 report

Average Salary (2020)\$95k* +14% v 2015 *Weighted average of Calgary and Edmonton, excludes

other regions based on Scoring Tech Talent report

VC Deals (2020)51 +30% v 2019 *Canadian Venture Capital Private Equity Association Year End 2020 report

- total.
- - energy sector.
- ground.

Alberta's Economy: Sector Snapshots: Technology

INVESTMENT

EMPLOYMENT

VALUE

• Tech is different from other industries in that it really isn't a cleanly defined industry; the most comprehensive definition of "tech" spans a range of economic sectors. For instance, the use of software, AI, robotics, and other forms of "tech" transcend industries. • Using this broader definition, Alberta's tech sector totaled \$18Band this was as of 6 years ago (the most recent estimate). • Importantly for growth, tech-related industries account for an outsized share of R&D spending, an estimated 40% of Alberta's

 Employment in tech occupations represents around 100k jobs. • These jobs are also among the highest paid in Alberta: an average of \$95k in Calgary and Edmonton markets in 2020. • Alberta's tech jobs skew more to Architecture, Engineering, and Design than ICT, likely representing a connection with the

• Startups are an important part of the growth of the tech sector and venture capital is an important part of getting startups off the

• Alberta attracts less than its share of venture capital, but VC is quickly growing: doubling from '19 to '20.

• 40% of tech startups are reporting greater than \$1M in annual revenue as of 2020, a 66% increase over 2018.

Technology: Key Trends & Forces



Labour & Capital Needs

Calgary was listed as one of the "<u>biggest risers</u>" in 2020 in terms of tech talent, increasing by 6 spots on a list of 50 cities across North America. In fact, both Edmonton and Calgary are viewed as important <u>up-and-coming</u> tech ecosystems to watch. However, firms in Alberta consistently report difficulty finding the workers they need; capital is a key limiter to scaling operations; and Alberta's is an uncompetitive environment for tech start-up attraction compared with other, more-enticing jurisdictions.



Cross-Sector

The industry is and increasingly will be cross-sectoral. Tech represents a burgeoning industry on its own (ICT). But the tools, processes, and skills of "tech" are also vital in the <u>transformation</u> of traditional industries like manufacturing, energy, and transportation: to make them more productive, profitable, and sustainable. There are also lessons and opportunities from tech for the public sector. COVID opened the door to change and possibility of systems which have gone unchanged for decades, to increase the speed and effectiveness of government processes, supports, and programs.

Technology: SWOT Analysis

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Strengths

- Home to a large number of tech success stories (Benevity, Circocardiovascular, Drivewvze, Decisive Farming)
- Innovation ecosystem is rapidly growing: VC funding doubled from 2019 to 2020
- Research strengths stemming in part from oil and gas including geomatics, unmanned vehicles, and artificial intelligence
- A world-leading Artificial Intelligence centre at the University of Alberta
- Organizations which support the innovation ecosystem including: Creative Destruction Lab. Alberta Innovates, the Alberta Enterprise Corporation, Alberta Research and Innovation Advisory Committee, Invest Alberta, & A100
- Starting to build "anchor companies" which will grow the ecosystem of skills and founders in Alberta, with particular success in Life Sciences due to focus of CDL, post-secondaries, WED, and physicians and researchers



- other provinces since 2017 Software—along with digital support services such as digital education & consulting -has been slower to grow in Alberta
- Access to capital remains a challenge at the early and scale-up stage in Canada and in Alberta in particular
- Calgary and Edmonton have the lowest rates of scaling companies among urban centres in Canada

Opportunities

- A high quality of life, low cost of living of Alberta, and high quality PSI which tends to attract talent
- Many large tech hubs are geographically close to Alberta
- Available and affordable office space in Alberta's two large cities
- The amount of financial capital and high net worth individuals in our province
- The Innovation Capital Working Group report highlights a number of opportunities for enhancing capital attraction for start-up and early-stage companies
- COVID has sparked investment in digital technologies across a wide range of areas—from e-commerce to online learning to the automation of tasks
- Building an agreed definition of how to define, and measure, "tech"



- Alberta's policy environment, which is not as competitive in attracting entrepreneurs as neighboring jurisdictions

Weaknesses

• The digital economy remains underdeveloped in Alberta and its growth has lagged

- Quickly growing but still lacking the critical mass of entrepreneurs, startups, and experienced talent
- Low rate of technology adoption Canada-wide
- Based on reported labour shortages, pipeline talent remains limited
- Government policy does little to attract businesses in tech

Threats

- Increasing competition for tech talent across markets, with the ability to work in markets different from where you live
- Though AI and data access has been critical throughout COVID in
- developing a policy response, it has also exposed gaps in data privacy and
- security and the need for an intellectual property framework
- Alberta's branding as an oil and gas province resistant to new ideas,
- diversity, and change



December 2021

Transportation & Logistics

Based on the latest data pre-COVID (2018 or 2019)

VALUE	GDP \$16B 5% +10% v 5 years ago	Exports NA *Service export by industry unavailable*
EMPLOYMENT	Employment 106k 5% +5% v 5 years ago	Median Wages \$29/hour +10% v 5 years ago
NVESTMENT	Capital Investment \$9B 15% -7% v 5 years ago	R&D NA *Sample too small to estimate*

- industry.



• The transportation and logistics industry added \$16B to provincial GDP in 2019, about 5% of the Alberta economy. • The industry includes all business involved in the transportation of goods and people including air, rail, truck, postal, and pipeline. It also includes the warehousing and storage of goods. • The industry is essential to Alberta in that it comprises the foundational infrastructure and services that support the province's heavily export-dependent economy. • A notable asset of Alberta's Transportation and Logistics industry is the <u>Alberta Industrial Heartland</u> which connects businesses processing oil, gas, and petrochemicals with transportation infrastructure including rail, trucking, and even the Carbon Trunk Line which captures and sequesters carbon underground in support of reducing GHG emissions from

• The industry has grown moderately over the last few years prior to COVID, with GDP up 10% and employment up 5%. Meanwhile, capital investment has declined, down 7% versus 5 years ago.

Transportation & Logistics: Key Trends & Forces

Interdependencies

The industry in Alberta has many opportunities for growth but growth requires coordination across an interdependent global supply chain with a number of key players and modes of transportation, in addition to various governmental stakeholders. Challenges in coordination limit the broader industry's potential. Because of this, Alberta misses opportunities in the global competition for investment to other jurisdictions with better coordination.



Worker Shortages

Specifically, the trucking industry continues to face a shortage of certified workers. The attraction and retention of truck drivers is increasingly a struggle. Stringent age requirements, a high cost of insurance, and inconsistent regulations across provinces all weigh on the ability for the industry to secure the workers needed.



Capacity

Swings in global oil prices cause sharp, and unexpected, changes in demand for the industry. Because of capacity limitations, high oil prices can displace other industries by driving up the price of transport and causing bottlenecks while low prices can hurt the industry if this leaves it well below capacity.

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Transportation & Logistics: SWOT Analysis

Strengths

- A conducive regulatory environment
- Alberta's Industrial Heartland, which connects businesses processing oil, gas, and petrochemicals with transportation infrastructure including rail, trucking, and the Carbon Trunk Line
- Two international airports, including YYC which is home to WestJet's head office and is a regional hub for air traffic
- An extensive network of gas and oil pipelines
- A booming shipping and warehousing industry
- Calgary is home to CP Rail's head office
- WestJet's <u>cargo division</u> which will be used to expand capacity



- Lack of regulatory harmonization across neighboring jurisdictions • Challenges finding qualified trades workers such as truck drivers • Poor road quality: the majority of Albertans think the government needs to better maintain the province's roads
- Existing airports are relatively expensive for the transport of goods and people
- Situated inland with a large distance from a port and no direct access to international markets



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Opportunities

- Capacity expansion through development of new regional industrial and logistics zones across Alberta like the Alberta Heartland, likely to benefit rural areas of Alberta
- Government coordination agency to support large facilities which requires the coordination of many key players
- International marketing efforts to showcase Alberta's opportunity
- Autonomous driving which is likely to have a transformative impact on the industry and its workers/jobs
- Increase in online shopping creates opportunities for expansion of shipping and warehousing activity and distributional centres



- Heavy reliance on a volatile industry, especially for rail, which can create bottlenecks when swings in demand are large • Likewise, higher agricultural production could also put pressure

- Interdependencies across many players means one party can negate mutual gains of coordination (e.g. rail may be interested in investing but needs assurance that there will be a certain amount of demand)
- The greater the lack of coordination, the more likely Alberta is to miss out on international opportunity for investment



Weaknesses

• Municipal coordination sometimes lacking

Threats

- on rail capacity
- Pressure to lower emissions via electrification or other loweremitting energies such as hydrogen



1463.85 1470.57 1463.15 1468.39 1457.71 1450.37 1422.49

Alberta's Economy: Sector Snapshots Financial Services





Financial Services

Based on the latest data pre-COVID (2018 or 2019)

VALUE	GDP \$14B 4% +15% v 5 years ago	Exports NA *Service export by industry unavailable*
EMPLOYMENT	Employment 63k 3% +5% v 5 years ago	Median Wages \$29/hour +16% v 5 years ago *median includes Real Estate
INVESTMENT	Capital Investment \$0.3B 5% -44% v 5 years ago	R&D NA *Sample too small to estimate*

- The financial services industry added \$14B to provincial GDP in 2019, representing about 4% of the Alberta economy.
- The industry includes a range of businesses related to finance: banks, trust and loan companies, insurance companies, credit unions, and pension managers, to name a few.
- The industry has been essential in enabling the growth of Alberta's economy to date and will be critical to its future success as well.
- It also has close ties to the real estate market, providing Albertans the financing necessary to buy a house, and developers the financing necessary to build offices and storefronts.
- The industry has grown moderately over the last few years, with GDP up 15% and employment up 5%.
- Capital investment is not as important to the financial services industry, representing just 5% of Alberta's capital investment. Yet, there has been a notable decline of 44% in 5 years.



Financial Services: Key Trends & Forces



Interest Rates

The inevitable tightening of monetary policy and rise in interest rates will be harmful for those with high levels of debt, of which there are many. Further, home equity lines of credit, which consumers commonly leverage for debt financing, are also at risk if the value of real estate does not continue in its current upward trajectory indefinitely.



Consumer Education & Trust

A lack of financial literacy is common across Canada. Additionally, there is a growing distrust of the industry. Better platforms for education and engagement, including software and apps that help consumers to feel more in control and connect them with resources, could play a large role in addressing both, leading to better financial planning.



Energy

Canada's financial services—through its lending, investment, and insurance—is closely tied with the oil and gas industry. This is especially true in Alberta which has a large number of consumers—individuals and businesses tied to the industry. Because of the challenges in the face of decarbonization, debt issued to these parties is increasingly viewed as higher risk. At the same time, large capital investments are needed to create the energy systems of the future.





Financial Services: SWOT Analysis

Strengths

- A strong financial ecosystem comprised of banks, trust and loan companies, insurance companies, credit unions, securities dealers, pension fund managers, etc.
- A robust regulatory environment which has ensured the stability of the sector to date
- A fiscal environment of low taxes which is conducive to the sector and its growth
- A large number of high income earners in the province which makes for a well-funded capital base
- Persistent growth of new customers due to immigration





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Opportunities

- Better education and financial literacy of the consumer
- A growing female economy, changing wealth dynamics, and better data on financial inclusion
- Being a leader in the development and use of FinTech: software, technologies, and apps to improve the knowledge and abilities of the workforce and to help consumers to better understand and manage their savings, investment, and debt
- The ability to enable and support the evolution of energy, which will require major capital investments, and the growth of new industries
- Alberta's Recovery Plan and forthcoming sector strategies which shines a light on Finance and Fintech





Weaknesses

• Loan approval dependent on stable jobs and predictable income which is increasingly precarious for certain workers in the province • High rates of business and car insurance compared with other provinces and US states

• A lack of financial literacy of consumers, something true across provinces

• High levels of consumer mortgage and non-mortgage debt which could trickle down generations

• Access to financial capital a greater barrier for women and racialized individuals

Threats

• Resiliency of Canada's—and particularly Alberta's—financial services sector dependent on the oil and gas industry

• Climate change and natural disasters such as floods and fires will put upward pressure on insurance rates, decreasing business competitiveness

• The tightening of monetary policy could spell trouble for indebted Albertans and businesses

• The potential for a correction in the housing market, an equity that consumers often bet on

• Consumer spending and borrowing based on previous income levels which may never return

• FinTech & the use of cryptocurrency pose threat workforce



Alberta's Economy: Sector Snapshots Manufacturing



Manufacturing

Based on the latest data pre-COVID (2018 or 2019)

VALUE	GDP \$24B 7% -4% v 5 years ago	Exports NA
EMPLOYMENT	Employment 124k 6% -10% v 5 years ago	Median Wages \$29/hour +13% v 5 years ago
NVESTMENT	Capital Investment \$4B 7% +58% v 5 years ago	R&D \$376M 22% +61% v 5 years ago

- 2019.
- Manufacturing plays a huge role in the province's most valuable product exports-namely, energy and agriculture.
- In Alberta, the industry includes a few large sub-sectors along with a number of smaller subsectors. The largest ones include: • Chemical manufacturing (25%):

 - Food manufacturing (11%).
- Jobs within the industry typically pay around \$29 per hour and include a range of occupations, from meat cutter to machinist to manufacturing engineer to instrument technician.
- Over the past 5 years, the industry has declined, primarily due to a decline in machinery manufacturing, while other sub-sectors like chemical and agriculture-related manufacturing have grown. • Interestingly, though employment has declined with the overall industry, there has been an increase in both capital investment and R&D, indicating that sub-sectors within manufacturing might be primed for future growth.

• The manufacturing industry added \$24B to provincial GDP in

• Petroleum manufacturing (19%); and

Manufacturing: Key Trends & Forces



Industry 4.0

Like other industries, manufacturing is becoming increasingly data-driven and high tech. The Internet of Things (IoT), predictive maintenance, AI, and machine learning are all terms used to describe the key components of this transformation. Importantly, this data-driven evolution is helping to lower costs and increase productivity of the industry.



Workforce Attraction & Attrition

Attracting new workers into manufacturing is a key priority for the industry. Manufacturing companies often struggle to find qualified employees, and this is expected to increase as the industry sees a wave of retirement. At the same time, the skills required are rapidly changing, away from physical requirements to intellectual capabilities. For instance, workers increasingly need to work with advanced technology and robots which streamline processes and do the literal heavy lifting.



Sustainability & Emission Intensity

Manufactured goods are increasingly assessed by investors, and governmental policy, based on their environmental impact - in particular, GHG emissions. Though this is especially true in energy, sustainability is becoming a necessary priority across manufacturing sub-sectors. As a result, many businesses face the challenge of increasing production to meet demand while lowering emissions. As well, businesses face much uncertainty: policy changes are often abrupt, and any policy discrepancies across countries risk the use of non-tariff trade barriers to account for differences or even to favour local markets.



Manufacturing: SWOT Analysis

Strengths

- A relatively large industry with a variety of sub-sectors and products including chemical, energy, and food products
- Specifically, Alberta has strengths in oil and gas; metal fabrication; pipelines; agriculture; and transportation equipment
- A wealth of natural resources from hydrocarbon resources to the vast tracts of arable land to natural pastures - which can be made into valuable consumer products
- Access to low-cost and abundant feedstock (natural gas, hydrogen) for heavy industry and petrochemical manufacturing
- Strong connectivity to markets via railroads and roadways



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Opportunities

- The production and export of low-emissions energies, technologies, and products such as hydrogen, geothermal, and carbon fibre
- Domestic vaccine manufacturing to build capacity for future public health emergencies
- Increasing levels of R&D spending over the last 5 years could help lower costs and increase productivity and value
- Use of AI, machine learning, predictive maintenance, etc. to rapidly expand the potential of the industry
- Expansion into new sub-sectors and products of growth where Alberta has potential such as biopharmaceuticals, upstream chemical products, and value-added agriculture



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- Emissions-intensive sub-sectors will face increasing carbon prices, in addition to new regulation
- New US climate change policy, including a possible US Carbon Border Adjustment



Weaknesses

• Transportation network capacity cannot quickly adapt to production fluctuations which sometimes leaves one industry crowding out another (e.g. when oil prices are high, others struggle to move product) • Situated inland with a large distance from a port and limited direct access to international markets

• Poor road quality: the <u>majority of Albertans</u> think the government needs to better maintain roads

• Relatively underdeveloped in higher-complexity products of future growth such as medical devices, biopharmaceuticals, and production technologies

• A relatively high emissions intensity due to the mix of products manufactured in Alberta

Threats

• Supply chain disruptions due to COVID which could be longer-

- lasting, increasing cost and wait times for inputs
- Persistent labour shortages
- Trade nationalism and the potential for increased barriers to trade, on protectionist (e.g. Buy American) or environmental grounds

• An increase in extreme weather events which have proven to cause substantial disruption to supply chains and limit product exports to global markets