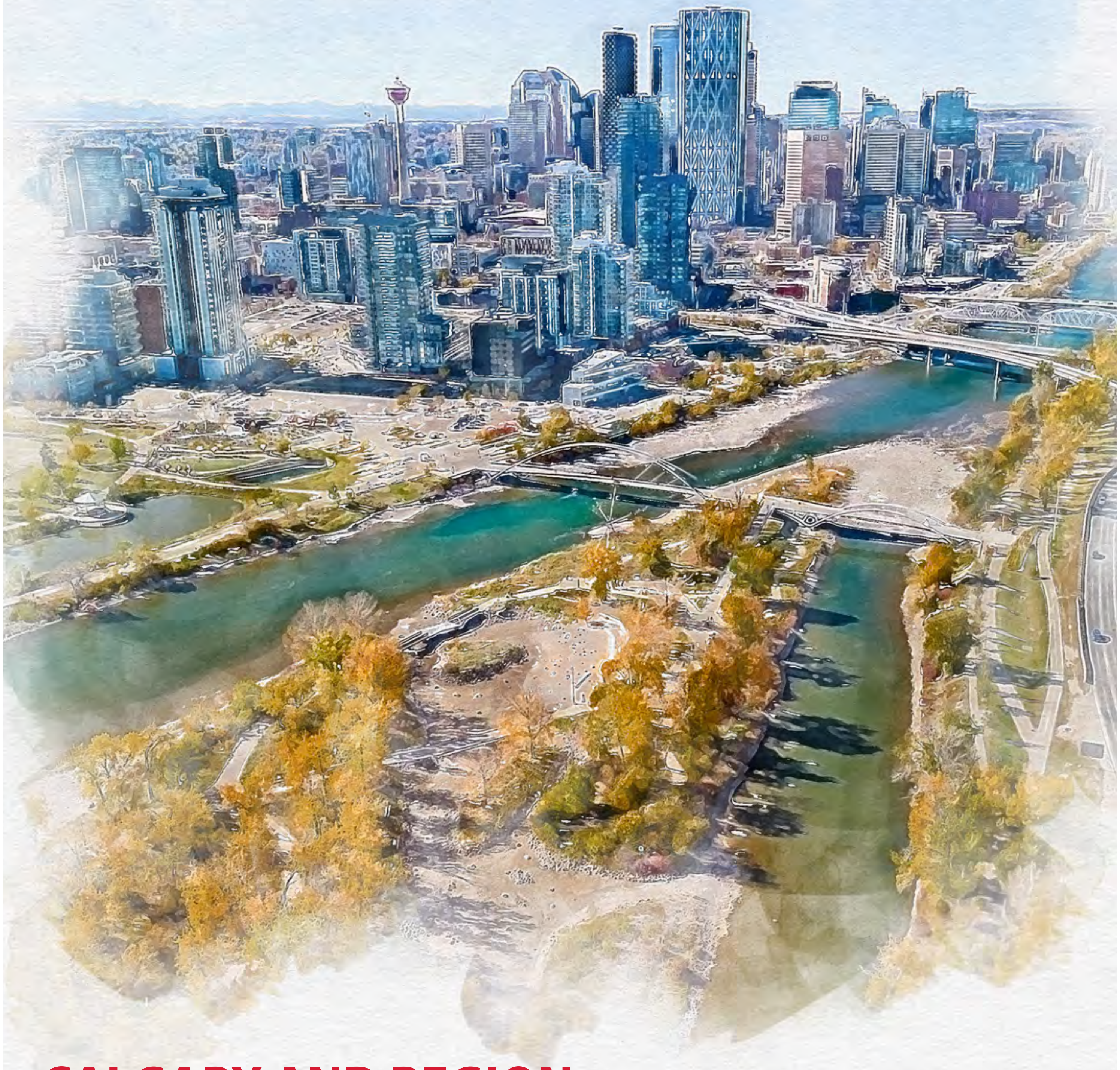
FALL 2024



CALGARY AND REGION ECONOMIC OUTLOOK
2024-2029

calgary.ca/economy

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Introduction

The City of Calgary (The City) tracks economic indicators throughout the year to develop insights about the impacts of external events on the local economy. The results are published in the Economic Outlook semi-annually in the spring and fall and are available to the public.

The timing of the release of The City's Fall Economic Outlook is late October every year. The timing is dependent on several items. For example, the report typically follows and incorporates insights from a fall release of the International Monetary Fund's World Economic Outlook, and the Bank of Canada's quarterly monetary policy update. The late October release of the Fall 2024 Economic Outlook also supports Council's work during the November 2024 Adjustments to the 2024-2027 Service Plans and Budgets.

Purpose

The Fall 2024 Economic Outlook supports The City's financial and physical planning. It provides a reasonable basis for decision-making by outlining and clarifying the economic opportunities and threats facing the Calgary Economic Region. The outlook considers several economic indicators. The choice of indicators reflects factors deemed likely to affect local economic performance over the forecast period.

Plan

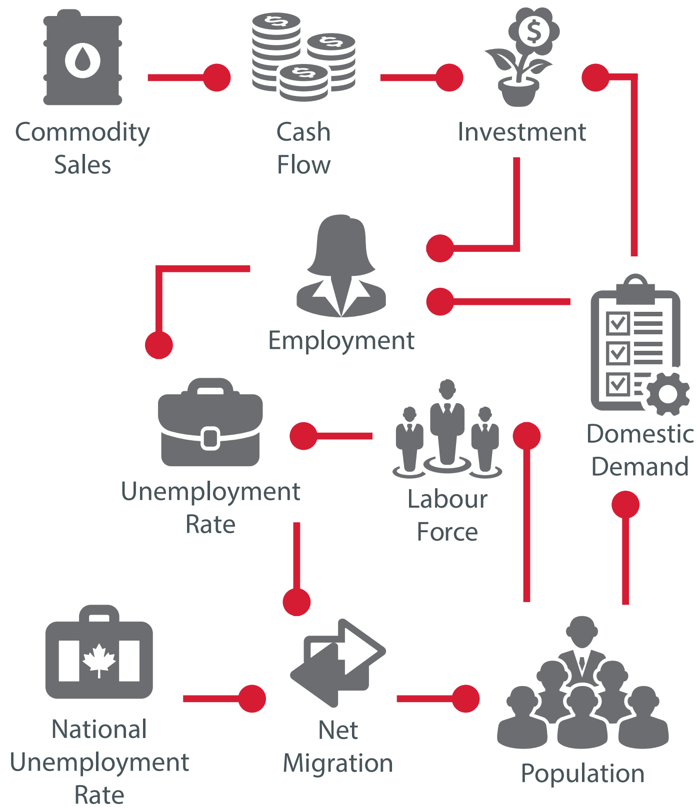
There are two areas or economies of interest. The first is the local (or city of Calgary) economy. The second is the regional economy (Calgary Economic Region or CER).

The CER is a small open economy affected by changes outside its borders. Consequently, external influences from the provincial, national and world economies get transmitted to the local and regional economies. Outside factors judged to have a substantial impact get presented as forecast assumptions. Most national and international forecast estimates in the assumptions section reflect the average expectations of private sector forecasters. All the CER or City forecast estimates are the output of City of Calgary forecast models, validated by private sector forecasts.

The economic cycle for commodity-based regions helps to inform projections of economic activity in the CER. The level of crude oil sales affects the cash flow of Alberta's energy industry and investment in the local economy. A summary of the path from crude oil sales to increased domestic demand is available in the chart below. The Fall 2024 Economic Outlook uses assumptions about changes in the path for the 2024 to 2029 period as follows:

- Improved market accessibility and better transportation capability will improve the cash flow of the energy sector and boost local and provincial economies.
- A more favorable financing environment should boost household consumption, encourage private sector investment, and support exports.
- Central Banks' synchronized contractionary monetary policies and removing global supply chain constraints have successfully reduced global inflation.

From Strong Commodity Performance to Strong Economic Performance



Payoff

The Fall 2024 Economic Outlook provides comprehensive estimates of the future conditions for Calgary's local and regional economies. Like the work of alternative forecast providers, it uses theoretical and empirical economic underpinnings. However, unlike the work of alternative forecasters, it provides the complete set of indicators requested by local decision-makers for the city and CER.

Finally, it tackles key recurring questions posed by City of Calgary decision-makers:

- What is the overall forecast for the growth rate in the local economy?
- What are the drivers of local economic performance?
- How many jobs is the local economy expected to create?
- What is the forecast for population growth in the city and region?
- What is the expected inflation rate?
- What are the implications, especially for municipal finance?

Executive Summary

1. Alberta's crude oil and natural gas production is anticipated to increase due to the completion of the Trans Mountain Pipeline Expansion (TMX) project in Western Canada

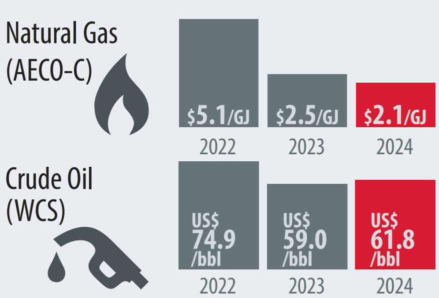
May 1, 2024, signified the commercial commencement date for the Trans Mountain Pipeline Expanded System, which includes 988 kilometres of new pipeline and 193 kilometres of reactivated pipeline, between Strathcona County in Alberta and Burnaby, British Columbia. By gaining access to international markets where oil is valued more highly, twinning the Trans Mountain Pipeline will raise the value of Canadian oil and boost tax income for the country. The project is anticipated to increase crude oil and natural gas revenue by tripling the volume of crude shipped, from 300,000 to 890,000 barrels per day (bpd). Additionally, it will increase taxes paid to all three orders of government, generate new short- and long-term jobs, provide training opportunities for job seekers, and provide funding for several local initiatives in surrounding towns.

The crude oil price differential between Canada's benchmark heavy crude - Western Canadian Select (WCS) - and U.S. benchmark for crude oil - West Texas Intermediate (WTI) - is expected to narrow as Alberta's ability to reach more markets other than U.S. are enhanced, thus increasing expected profit margins and government revenues. The Alberta economy grew by 1.5 per cent in 2023 on the backdrop of tight monetary policy stance embarked on by the Bank of Canada in early 2022 to combat high inflation. Historically, British Columbia, followed by Alberta, have led economic growth in Canada between 1997-2023, with Alberta's real gross domestic product (GDP) growing at an annual average of approximately 2.4 per cent per year between 1997 and 2023, the second fastest growth amongst Canadian provinces. Growth is expected to strengthen as the Bank of Canada's monetary stance is relaxed in the second half of this year, and population growth remains strong in Alberta. The expected lower borrowing cost for businesses and households coupled with a larger consumer base, on the heels of firm employment growth bode well towards firming economic growth for Alberta.

The increased and improved delivery of crude oil production should contribute to a stronger economic growth of 1.8 per cent in real GDP for Alberta in 2024. Alberta's contribution to meeting Canada's net-zero emissions by 2050 and contributing to the 2023 emissions reduction plan (40-45 per cent target of 2005 emissions) is not just reflected in the carbon-capture sequestration projects by the oil and gas sector but also in investments such as the $1.6 billion (2022-2024) in net-zero hydrogen energy complex in Edmonton, and Air Products Hydrogen Production and Liquefaction Facility of $720 million (2023-2025). Also, a proposed $2.0 billion clean hydrogen and atmospheric gases facility (2025-2028) to support Dow's net-zero ethylene cracker site and decarbonation efforts are intended to capture over 2 million metric tons of CO2 annually. There is likewise a planned 430 forty-foot equivalent emissions-neutral facility able to store and maintain a fully zero-emission bus fleet. The garage is planned to include a mix of zero emission technology, including both Fuel Cell Electric Buses and Battery Electric Buses. The facility will measure nearly 1.7 million square feet upon completion.

The contribution to hydrogen and lithium (used for electric vehicle batteries) technology and production in Alberta by the mining, oil and gas sector, manufacturing and the professional scientific and technical services industry, is stimulating research and development, and highlights industry diversification and commitment towards a greener and yet sustainable resource economy. The work of the United Nations Declaration adopted in 2007, recognizes the rights of all Indigenous peoples of the world, to that, which constitutes the minimum standards for survival, dignity, and well-being. A path to a more balanced, greener Alberta economy is further fortified by "protocol agreements" between the Alberta government and various Indigenous

Energy Prices



A sustainable **green economic pathway** should continue to put **downward pressure** on **WCS oil price** despite gains in 2024, while the **opposite** is true for **AECO-C natural gas price** despite marginal loss in 2024.

Canada/U.S. Exchange Rate

US$ for 1 C$

2025-2029 Average **0.75** | 2023 **0.75**
2024 **0.73** | 2022 **0.77**

A relatively **stable Canadian dollar** to the U.S. dollar **bodes well** for **Canadian exports and subdued price volatility** in imported goods.

GDP Growth Comparison

Calgary economy is poised to outperform Alberta and Canada's **economic growth**, matching U.S. growth, but below the global growth in 2024, despite outperforming all between 2022-2023.

Calgary CER **2.3%**
Alberta 1.8%
Canada 1.1%
U.S. 2.3%
World 3.2%

leaders since 2019-2022 (i.e. Blackfoot Confederacy, Stoney Nakoda-Tsuut'ina Tribal Council, and Confederacy of Treaty Six First Nations in Alberta). The protocol agreements highlight a framework for addressing information sharing, issues of mutual concern (including lands and resources, the environment, to mention a few) and continued collaboration.

West Texas Intermediate is expected to reach an annual average of US$79/bbl this year from the annual average of US$78/bbl experienced in 2023, while the Western Canadian Select oil price is expected to hit an annual average of US$62/bbl this year. The differential price gap between the two is expected to narrow as Alberta's ability to reach further markets other than the U.S. expands along with firming crude oil demand from the U.S. as manufacturing-home-shoring of its supply chain continues to ramp up.

In the first half of 2024, compared to the same time a year ago, natural gas inventories have tightened; despite that, AECO's average annual price is expected to come in lower at $2.10/GJ in 2024 compared to $2.50/GJ in 2023. The price is expected to increase by more than a dollar in 2025 and average $3.90/GJ over the rest of the forecast horizon as demand and alternative greener energy sources and infrastructure improve.

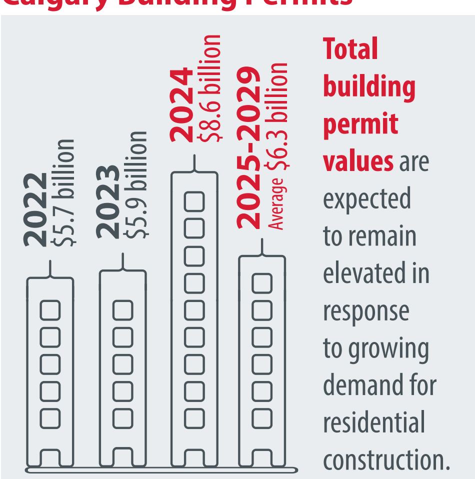
2. A surge in residential investment is anticipated as the real estate and construction sectors rush to capitalize on Calgary's rapidly increasing housing demand brought on by the city's rapid population growth

Relative home affordability compared to cities like Toronto and Vancouver is expected to be one of the key drivers of growth and will keep housing demand elevated within the region. Several residential and infrastructure capital projects are already underway or set to begin in 2024. The design and construction phase of the Calgary Events Centre project is already underway. The arena is expected to cost approximately $800 million, with additional infrastructure and other expenses bringing the total project cost to $1.22 billion. The government of Alberta has committed $330 million to infrastructure investments, including demolishing the Saddledome and other road construction projects. Over $2.5 billion in residential investment is already underway or set to begin. Most of these residential investment projects are set to be completed by 2026.

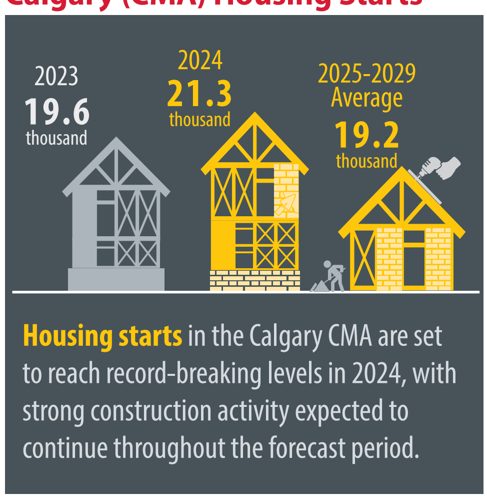
On October 10th, The City of Calgary and the Province of Alberta agreed to advance work on Green Line, from 4th Street SE to Shepard. The Province reiterated that the $1.53 billion in already pledged funds is still available to support the ongoing work in the interim. At the same time, AECOM is working on the Province's updated downtown alignment. Either at-grade or elevated, this route will link communities in southeast Calgary, the new Event Centre, and the Red and Blue Lines. The continuation of this project will likely support non-residential investment growth in the city. This project, which is expected to be the largest infrastructural project in Calgary's history, will potentially reduce transportation issues as Calgary experiences its fastest population growth on record. There is also the likelihood of housing projects purposefully planned to be close to the Green Line being executed.

Overall, investments within the Calgary Economic Region are expected to increase slightly this year, driven by the construction, real estate, and manufacturing industries. This improvement is expected to support the local economy, providing some modest relief to Calgary's housing supply issues. One key issue facing non-residential buildings in Calgary today is the continued increase in population and number of people working in Calgary. Increased demand for workspace to accommodate all of Calgary's new employees is driving increased non-residential construction

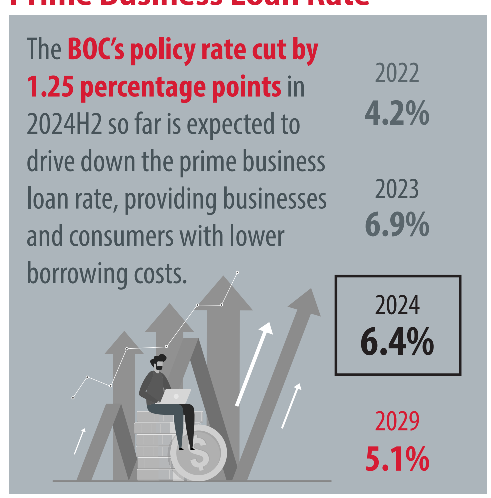
Calgary Building Permits



Calgary (CMA) Housing Starts



Prime Business Loan Rate



costs this year and next. Based on CMHC data, housing starts in the city of Calgary and Calgary CMA for 2024 year-to-date (YTD) (as of August) reached 12,472 and 15,324 units, respectively. This marks a significant increase compared to the same period in 2022 (11,186) and 2023 (11,407), posting a record-breaking year.

The growth is primarily attributed to the surge in multi-family housing, particularly apartments, where starts have hit 6,436 year-to-date —well above the 10-year average (2014-2023) of 3,357. Given higher mortgage costs, the higher demand for less expensive housing options is driving this trend. The building permit values submitted to The City of Calgary reflect the investment intentions in construction. As of September 2024, the total value of permits submitted to The City has reached approximately $6.2 billion. Residential permits account for approximately 65 per cent of this total, or $4.0 billion—about 25 per cent higher than the same period in 2023. These permits are projected to create 18,097 housing units, up from 14,466 last year.

Building on the sellers' market conditions from 2023, driven by strong population growth, 2024 has remained a hot year for Calgary's real estate market, surpassing the national trend. The average annual growth rate for benchmark prices (composite), representing the price of a typical house in Calgary, has been 8.5 per cent in 2024 (up to August), compared to 3.4 per cent during the same period last year. As Calgary catches up with other major cities regarding housing prices, its affordability advantage is diminishing.

3. Industries with a critical need for workers are finding it easier to fill job openings, although Calgary's economy struggles to absorb the number of job seekers flocking to the region

The government immigration program partly meets the labour demand, calling for the admission of many workers between 2023 and 2026. The seasonally adjusted job vacancy rate for the Calgary Economic Region dropped for the seventh quarter in Q1 2024, reaching almost identical levels to those before the pandemic.

With exceptionally high migration to the area over the previous two years, Calgary's labour market is experiencing an inflow of job seekers. For comparison, there were 67,000 new residents in Calgary in 2023 compared to 19,000 in 2022, an increase of almost 200 percent. As of April 1, 2023, the population in the city of Calgary was estimated at 1,422,800 persons, which translates to a 5.6 per cent annual population growth rate.

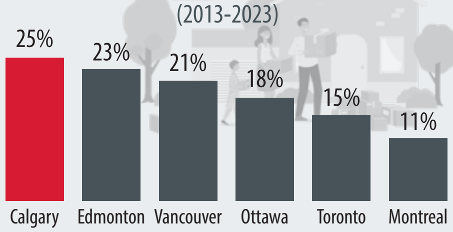
However, a halt in hiring brought on by a slower growing economy and stricter monetary policy has left job seekers dissatisfied with Calgary's labour market. The people most affected by Calgary's stalling employment market are younger and have less work experience.

These difficulties are starting to show symptoms: Among the leading Canadian cities, Calgary has the highest unemployment rate, and jobless people find it more difficult to find employment. Because job seekers seeking full-time employment are compelled to accept part-time work, the meagre job growth has been concentrated in the public sector and part-time positions.

Ten-Year Population Growth

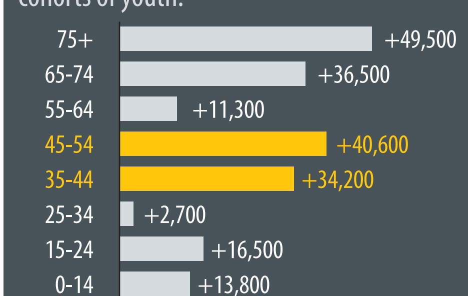
Calgary's population growth has outpaced other major Canadian cities in the past ten years. The trend is expected to continue in 2024, with solid growth from international and interprovincial **net migration**.

Total Population Growth of Canadian CMAs (2013-2023)

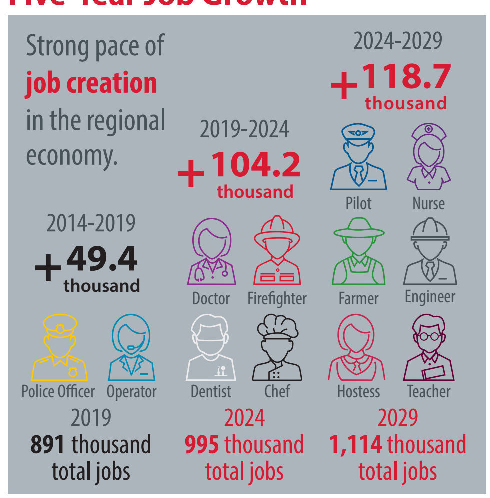


Population Increase by Cohort

The 10-year **middle-aged cohorts** ages 35 to 44 years and ages 45 to 54 years should experience a solid increase over the forecast period, outpacing the growth of cohorts of youth.



Five-Year Job Growth



The Calgary Economic Region is predicted to see a sharp increase in unemployment from 6.3 per cent in 2023 to 7.0 per cent in 2024–2025. Due to the number of people who have settled for part-time jobs while continuing to look for full-time work, these unemployment estimates will probably underestimate the lack of available positions.

Employment growth is anticipated to remain moderate as businesses strive to reduce hiring to save operating expenses. Employment is anticipated to increase by 3.9 per cent in 2024 and 2.8 per cent in 2025. The three industries that are anticipated to contribute most to job growth in the CER are construction, lodging, and food services. Unfortunately, there are still a lot of job openings in these sectors since the immigration skills targets haven't done enough to address the labour shortages in these fields.

4. Consumer Price Inflation in the Calgary Census Metropolitan Area (CMA) remains higher than the provincial and national average due to relatively higher shelter cost growth

While national inflation seems to be falling towards the Bank of Canada's inflation target of two per cent, the slowdown in inflation seems to be occurring at a much slower pace in Calgary. For comparison, as of June 2024, the national year-to-date inflation rate was 2.7 per cent, while the Calgary CMA had a rate of 3.6 per cent.

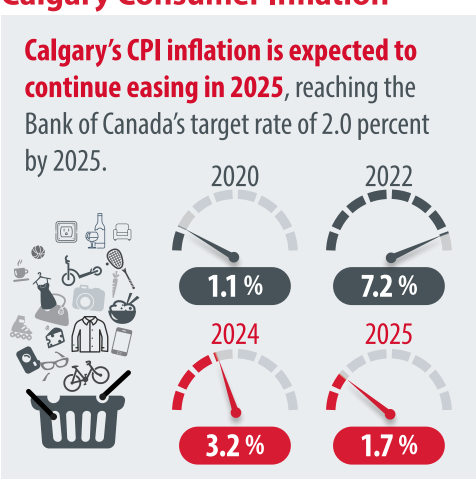
The main factor contributing to Calgary's increased inflation rate is the city's record-high migration rate. The number of individuals migrating to Calgary is outpacing housing availability, causing record-breaking rent increases due to imbalances in the rental market (demand overshadowing supply). At 18.0 per cent at the halfway point of the year, rental inflation was the highest in Canada and the main driver of rising living expenses. Utility prices are declining after a sharp surge at the start of the year. This has been made possible in part by the low marginal cost of electric plant capacities and the Government of Alberta's pressure through Bill-19 to make utility bills more affordable.

Expected expansion in the construction industry is projected to speed up the completion of housing projects over the long term. The shortage of construction workers has added to some of the inflationary risks Calgary has experienced recently. The expected expansion of the construction industry over time is expected to reduce some of the supply imbalances in the real estate industry.

In response to increased recessionary risks resulting from tighter monetary policy thus far in 2024, the Bank of Canada has already lowered interest rates four times. When new house ownership becomes more appealing, this is anticipated to offer a small reprieve in the rental market.

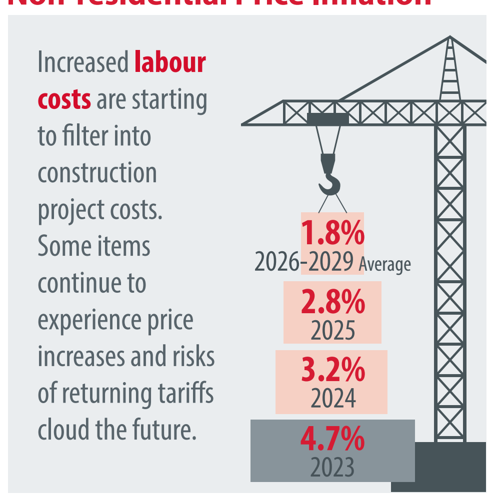
Interest rates are not anticipated to return to their pre-pandemic lows anytime soon, notwithstanding the Bank of Canada's string of rate reductions. This lessens the possibility of unforeseen spikes in consumer and company debt.

Calgary Consumer Inflation



Alberta Wage Inflation

Non-residential Price Inflation



Forecast Implications

Averages: Previous vis-à-vis Current City of Calgary Service Plans and Budget Cycle

Economic Indicator	Estimate Previous Service Plans and Budget Cycle [2019-2022] Annual Average	Forecast Current Service Plans and Budget Cycle [2023 to 2026] Annual Average	Forecast Implications
Assumptions			
Global Economy			
Real Gross Domestic Product Growth (%)	2.5	3.2	The average growth of the world GDP is expected to be higher for the current service plans and budget cycle than the previous one. With decelerating global inflation and steady growth, the likelihood of a hard landing has decreased. The resilience in the global market should have a positive impact on consumer confidence and spending in Calgary.
The United States			
Real Gross Domestic Product Growth (%)	1.8	2.1	The U.S. economy is expected to improve slightly in this budget cycle, driven by higher productivity and the three key pieces of legislation passed by the Biden Administration[1]. A relatively strong U.S. economy will bode well for Canadian exports. However, sustained elevated borrowing costs could weigh on U.S. domestic demand.
Canada			
Real Gross Domestic Product Growth (%)	1.4	1.6	Canada's economy should be supported by population growth and household spending. The average rate of economic growth in Canada will be higher in this cycle than in the previous one, supporting interprovincial trade.
Prime Business Loan Rate (%)	3.3	6.3	Interest rates will stay elevated in the current cycle. Higher financing costs should weigh on business investment incentives and consumer spending in Canada.
Exchange Rate (US$ for 1 C$)	0.77	0.74	Canada's exchange rate is expected to remain relatively stable to the U.S. dollar as monetary rate shifts across both regions remain in sync. This should support trade as trading partners benefit from improved price certainty.
Alberta			
Real Gross Domestic Product Growth (%)	0.6	2.1	Alberta's economic performance is expected to be significantly stronger during 2023-2026 compared to the previous cycle. The City benefits from the Province's improved fiscal situation and strong growth.
Total Employment Growth (%)	1.2	2.7	Despite expected firm employment growth, the strong population growth improved the pace of labour force growth but at a much slower rate than employment growth, causing the unemployment rate to trend lower. The smaller labour pool reduces the potential skill labour set Calgary employers can choose from.
Unemployment Rate (%)	8.1	6.6	A lower unemployment rate in the 2023-2026 cycle leads to reduced demand for social assistance programs from The City as the number of unemployed persons reduces.
Housing Starts ('000 units)	29.9	43.3	Adding over 13,000 new housing units is expected to grow the housing stock and reduce the housing market imbalance, which has driven significant house price swings in Alberta regions. Residential investment in the current service plans and budget cycle should contribute to economic growth within the province.
Inflation Rate – Consumer Price Inflation or CPI (%)	3.1	2.4	Alberta's consumer price inflation is poised to slow in 2024 as the aggressive rate hike cycle by the Bank of Canada, which started in March of 2022, began crawling back some of its cumulative effects in June of this year. Lower inflation in Alberta should reduce pressure on City expenditures.
West Texas Intermediate - WTI (US$/bbl)	64.8	77.8	Crude oil price volatility continues into 2024. This prompts The City to continue to explore countercyclical fiscal policy options to help moderate the impact of price volatility and economic fluctuations. Oil prices will remain elevated in this cycle compared to the previous one.
Western Canadian Select - WCS (US$/bbl)	50.1	60.2	Improved transportation capacity and expanded access to markets should help reduce the price difference between the WCS and WTI. This should enhance the energy sector's cash flow and support the provincial and local economy.
Alberta Natural Gas Price - AECO/NIT ($/GJ)	3.1	2.9	Although natural gas inventories have tightened, AECO average annual price is expected to be lower in 2024. This will moderate operational costs for businesses and household costs of living. At the same time, this will impact natural gas franchise fee revenues for The City, while operating expenditures for some City services will also decrease.
Industrial Product Price Index (%)	6.5	0.2	Prices for industrial products are expected to decrease from their mid-2022 peak in this service plans and budget cycle, resulting in a lower average of price growth in 2023-2026. This should moderate the inflationary pressures for The City.
Raw Materials Price Index (%)	11.4	-2.4	Raw material prices are expected to decline in this cycle from the price spike experienced in 2021-2022, which should reduce cost pressures for businesses.
Alberta Average Annual Wage Rate Growth (%)	1.7	3.1	Higher wage growth in the current cycle will raise incomes and improve affordability. However, it will also increase the labour cost, contributing to persistent inflation within the province and The City.

Averages: Previous vis-à-vis Current City of Calgary Service Plans and Budget Cycle

Economic Indicator	Estimate Previous Service Plans and Budget Cycle [2019 to 2022] Annual Average	Forecast Current Service Plans and Budget Cycle [2023 to 2026] Annual Average	Forecast Implications
Forecast			
Calgary Economic Region (CER)			
Real Gross Domestic Product Growth (%)	1.0	2.1	Calgary Economic Region should expect solid economic growth in the current service plans and budget cycle, supporting the resilience of the property tax base.
Total Employment ('000 persons)	882.7	1,005.5	Strong job growth will expand the consumer base, increasing demand for housing and goods and services in the region.
Total Employment Growth (%)	2.1	2.9	The employment growth rate is expected to remain strong in this cycle, continuing to create solid demand for City services and infrastructure.
Unemployment Rate (%)	8.4	6.6	Lower unemployment rates in this cycle should shrink the pool of skilled workers and reduce the demand for social services that support the unemployed. The tightness and mismatch of skillsets in the labour market will put pressures on labour costs for The City.
Calgary Census Metropolitan Area (CMA)			
Housing Starts ('000 Units)	13.4	21.0	Housing investments in the Calgary area are expected to be higher in the current budget cycle. Strong population growth from international and interprovincial net migration should support solid housing starts in Calgary CMA.
Inflation Rate - CPI (%)	3.2	2.6	Consumer price inflation is expected to moderate in this cycle. Prices will stay at a relatively elevated level compared to pre-pandemic. Moderation of the costs of goods and services helps mitigate the risks of cost overruns and budget adjustments.
Non-Residential Building Price Inflation (%)	3.9	3.1	Non-residential construction costs will decelerate in this cycle despite the continued increase in population and number of people working in Calgary. This will have a positive impact on non-residential building activities, including The City's infrastructure investment.
City of Calgary			
Demography			
Total Population ('000 Persons)	1,315.5	1,495.6	A larger total population indicates a higher demand for municipal services and infrastructure. It also means that the residential property tax base would increase.
Total Population Growth (%)	1.6	3.5	Calgary's population growth is expected to be higher in this cycle than the previous one, driven by robust net migration in the forecast period. This could generate additional pressure on certain City services.
Net Migration ('000 Persons)	11.8	41.4	Calgary has seen strong migration and expects the trend to continue in this budget cycle. This should support consumption and demand for housing and mitigate the labour market tightness in Calgary.
Household Formation ('000 Units)	7.4	18.9	The higher household formation in the current cycle supports higher demand for residential spaces, therefore indicating a larger residential tax base and increased demand for City infrastructure and services.
Real Estate			
Residential Market			
Housing Starts ('000 Units)	11.5	17.5	Stronger residential construction activity in the current cycle should support increases in the residential tax base, development and building permit activity, and demand for the continued expansion of City infrastructure.
Calgary Average Residential MLS® Sale price (%)	2.1	5.3	Housing affordability in Calgary will remain challenging for new housing market entrants as housing prices continue to grow in the current cycle. This should stimulate the supply of new housing units and shift the demand across different housing structure types.
Benchmark Home Price Growth (%)	5.1	5.4	Benchmark home price growth should also stay elevated in this cycle. This is driven by strong demand for shelter from population growth and increasing residential building costs. The increasing shelter costs should weigh on the affordability of Calgarians.
Total Building Permits ($ billions)	4.9	7.0	Higher building permit values in the current cycle will lead to a broader property tax base and higher revenues.

Numbers may not add up due to rounding.

[1] The Inflation Reduction Act (IRA), the Infrastructure and Investment Jobs Act (IIJA) and the Chips and Science Act (CSA) should translate to about US $3.5 trillion in funding over the next decade and aid real GDP growth.

Forecast Risks

Legend: Upside Risk · Downside Risk · Both

Risks arising from activities in the Rest of the World:

Major factors that could alter actual economic performance include reconfiguration of supply chains and ongoing trade disputes, uncertainties in global commodity prices and inflation, and potential divergence in global productivity.

1 Global Economic Reconfiguration

Geopolitical tensions, especially those between the United States and China, are causing a major reconfiguration of the global economy by changing supply networks. These changes restrict global competitiveness and drive inflation due to ongoing trade disputes, particularly in strategic sectors.

2 Commodity Prices and Inflation

It is anticipated that commodities and energy prices will continue to fluctuate, with geopolitical threats like the Middle East conflict able to disrupt oil supplies. Trade tensions and persistent inflation will keep inflationary pressures above pre-pandemic levels. Persistent inflation will be made worse by supply chain reconfigurations. In general, the risks to the outlook for inflation are balanced.

3 Technological and Geopolitical Disruption

Advanced economies will benefit more quickly from technological advancements like artificial intelligence (AI). However, these technologies are expected to exacerbate global inequality as less-developed economies struggle to integrate them. This could exacerbate economic inequality and the divergence in global productivity.

Risks from market conditions and policy differences across Canada:

Significant factors that could alter actual economic performance include the progress of inflation deceleration to its target range, uncertainties in consumption demand, the impact of the U.S. election, and environmental policy divergence that creates business investment ambiguity.

4 Inflation and Monetary Policy

The Bank of Canada has taken a dovish stance by reducing interest rates, but inflation remains a concern. High household debt and persistent wage growth could prolong inflationary pressures despite falling energy prices and easing mortgage interest rates. Downside risks exist on Canadian economic activity if inflation does not decelerate as expected, interest rates may stay elevated, dampening consumer spending and business investment. Household wealth and business incentives could further dampen, resulting in larger output losses.

5 Consumption Demand

Canada's population growth, driven by high immigration rates, supports consumption demand. However, households with high levels of debt, may constrain future consumption, particularly in sectors sensitive to interest rates. The uncertainty surrounding interest rates poses significant risks to consumer confidence and could put downward pressure on consumption demand.

6 Environmental Policy Coherence vis-à-vis Divergence

Canada's environmental policy landscape is fragmented, with federal, provincial, and municipal governments pursuing different strategies. This divergence creates uncertainty, particularly in the energy sector, which has downside risks to business investment. Inconsistent regulatory frameworks hinder long-term investment decisions necessary for the green transition.

7 U.S. Election and Trade Restrictions

The November 5th U.S. election poses significant risks to Canadian trade. A new U.S. administration may implement more restrictive trade policies, mainly targeting Canadian exports. These potential barriers would greatly impact Canada's economic outlook, particularly in industries heavily reliant on U.S. trade (such as Canada's energy industry reliance on U.S. steel) and inflation trajectory.

8 Breakup with China

A breakup in China's ties with the West could lead to a rapid decoupling of the global economy. Canada's reliance on trade with China, particularly in critical sectors like energy and minerals, puts it at risk of supply chain disruptions and trade barriers, which would have significant economic consequences (inflation trajectory).

9 Wildfires and Critical Infrastructure

The increasing severity of wildfires in Canada poses a major risk to critical infrastructure. Destruction of energy, transportation, and communication networks due to wildfires could significantly impact both local economies and national productivity. Climate change further exacerbates these risks, increasing the likelihood of infrastructure damage.

Risks from potential changes in Alberta provincial economy:

Significant factors that could alter actual economic performance include the uncertainties associated with energy prices and exports, migration and demand for housing and infrastructure services, and the labour market imbalance.

10

Oil and Natural Gas Prices and Exports

Though energy prices are forecast to trend down in 2024, upward price pressures exist due to geopolitical uncertainties and weather shocks. The potential escalation of the Middle East war and the ongoing war between Ukraine and Russia could impact global energy supply and prices. More extreme shocks could also cause extra price volatility. For Alberta's energy production and exports, the oil and gas sector investment and exports should be robust in the forecast period, supported by healthy cashflows and improving transportation capacity due to the completion of the Trans Mountain Pipeline Expansion (TMX) project in Western Canada.

11

The Level of Net Migration

International immigration to Alberta should stay strong in the medium term due to the federal 2024-2026 Immigration Levels Plan. The Government of Canada has announced plans to reduce the size of its temporary worker programs and place more priority on programs that help address worker shortages in targeted industries. The rapid growth of net migration has created challenges in housing affordability, infrastructure, and services shortfall, as well as falling GDP per capita with a surging population. Higher net migration levels beyond those incorporated in the forecast should further boost the population growth in Alberta while amplifying the existing challenges.

12

Labour Market Balance

Strong population growth from net migration into the province is helping to fill job vacancies and improve employment. However, the net migration spike will not immediately translate into higher labour force participation and employment levels. It will take time to mitigate the discrepancy between skills and jobs. Alberta's tight labour market will see further relief in the forecast period. However, there are risks that some industries will continue to face hiring challenges, especially for occupations requiring more specialized training.

Risks from local and regional private and public sector influences:

The uncertainty is associated with normalizing business pricing behaviour and improved investment environment, weakening consumer confidence and spending activities, and escalating labour cost.

13

Business Pricing and Investment

A lot of Calgary-based companies continue to exercise caution when it comes to their investments and the general economic climate. Over the predicted period, business incentives should strengthen as borrowing costs fall and credit conditions improve.

14

Consumer Confidence and Spending

Many Calgarians are facing record-high household debt levels. Elevated interest rates have been weighing on consumer confidence and consumption activities. Mortgage renewals in 2024 and high debt servicing costs will impact household spending decisions in Calgary. As more homeowners on fixed-five-year mortgages approach renewals, the higher rate environment will tighten some consumer spending in 2024 and into 2025. Consumers could become more cautious and cut back residential expenditures more than projected. This could also impact business incentives and slow down business investment.

15

Labour Cost Escalation

Labour cost growth in Calgary remains elevated, with uneven distribution across industries and occupations. Real wages are expected to grow relatively faster for industries with labour shortages, including construction, retail trade, education, and accommodation and food service industries. A higher real disposable income should help improve households' purchasing power and affordability. However, higher wages also indicate higher labour costs for both private and public sectors. There are risks of upward pressures on cost-push inflation.

Forecast

THE BROADER CALGARY ECONOMY

The Sources of Economic Growth in Calgary

Like the rest of Alberta, Calgary is facing a few headwinds. For one, inflation is outpacing the national average, primarily due to increased shelter costs and high net migration. Secondly, a more challenging business environment, notably from tighter monetary policies, has resulted in several firms scaling back operations. Finally, strong population growth is also driving up the number of job seekers. However, the economy is not expanding enough to absorb these job seekers, driving up unemployment. Calgary's economy is expected to grow by 2.3 per cent and 2.6 per cent in 2024 and 2025, respectively. There are a few bright spots however that should provide some strength to Calgary's economy:

1. **Residential investment growth as the construction activity picks up.** Residential investment is expected to strengthen as the real estate and construction industry scrambles to take advantage of Calgary's spiking demand for shelter due to its fast-growing population. Relative home affordability compared to cities like Toronto and Vancouver is expected to be one of the key drivers and will keep housing demand elevated within the region.
2. **Solid export prospects due to additional pipeline capacity.** The development and construction of the Trans Mountain expansion project in Western Canada is expected to boost Alberta's crude oil and natural gas exports. More specifically, the project is expected to triple the amount of crude shipped from 300,000 to 890,000 barrels per day (bpd), which would boost crude oil and natural gas revenue.
3. **Critical job openings are being filled, driving down labour shortages in key industries.** Industries with a critical need for workers are finding it easier to fill these openings. The federal immigration policy welcomed a vast number of workers between 2023 and 2026, helping to satisfy critical labour demand needs. The Calgary Economic Region (CER) seasonally adjusted job vacancy rate fell for the seventh consecutive quarter to 3.4 per cent in Q1 2024, nearing pre-pandemic rates.

Calgary's economy is struggling to absorb the number of job seekers flocking to the region.

Calgary's labour market is facing an influx of job seekers as migration to the region has been unusually high over the past two years. For context, 67,000 persons moved to Calgary in 2023, nearly a 200 per cent jump from the 19,000 persons that moved to Calgary in 2022. As of April 1, 2023, the city of Calgary's population was estimated at 1,422,800, representing a population growth rate of 5.6 per cent from April 1, 2022.

However, Calgary's job market has disappointed job seekers due to a weak economy and tighter monetary policy, which have led to a slowdown in hiring. Younger people with less work experience are bearing the brunt of Calgary's slowing labour market.

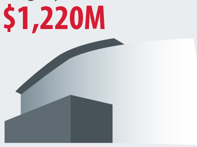
The signs of these challenges are becoming more apparent: Calgary's unemployment rates have been the highest across major Canadian cities, and unemployed persons are taking longer to find jobs. The modest job gains have been concentrated in the public sector and part-time jobs as job seekers looking for full-time work are forced to settle for part-time work.

Unemployment rates for the Calgary Economic Region (CER) are expected to jump significantly from 6 percent in 2023 to 7.0 percent between 2024 and 2025. These forecasts for unemployment will likely understate the scarcity of jobs due to the number of people who have settled for part-time jobs while still looking for full-time work.

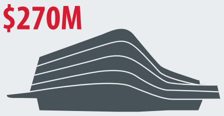
Employment growth is also expected to stay modest, with firms aiming to cut operational costs by reducing hiring. Employment is expected to grow by 3.9 per cent in 2024 and 2.8 per cent in 2025.

Major Infrastructure Investments Underway

Calgary Events Centre
$1,220M



Calgary Arts Commons Transformation Project
$270M



Calgary Airport West Runway Rehabilitation
$201M

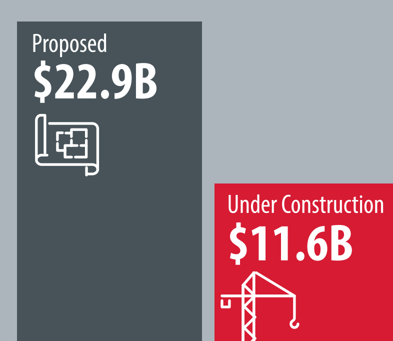
ENMAX Substation No. 1
$200M

Top Private Investments Underway

ENMAX Substation No. 1	$200M
Oliver Tower 2 (Formerly Place 10 West Tower)	$95M
4th Street Lofts	$69M
Wing Kei Village Continuing Care Facility (Phase 1)	$55M
Block 15 Apartment Building	$55M

Value of Major Investments

Major infrastructure **investments and investment intentions** ($17.4 billion) in the Calgary Economic Region.



Construction, Accommodation and Food Services are expected to be the significant drivers of job growth in the CER. However, job vacancies in these industries remain high as immigration policy so far has not been enough to tackle labour shortages in these industries.

The Contribution of Private and Public Investments and Impact on Construction Inflation

Investment Intentions and Prospects

Investment growth showed modest strength across Alberta despite the Bank of Canada's tight monetary policy throughout 2022 and 2023. Monetary policy has started to reverse course, with the Bank of Canada on its fourth consecutive rate cut. Despite the change in the Bank of Canada's monetary policy stance, interest rates are still above neutral. Further rate cuts are expected if inflationary pressure continues to fall, providing relief for consumers and businesses and stimulating spending and borrowing towards the end of 2025. Investments across Alberta have been primarily driven by the oil and gas and real estate industries, as robust population growth has pushed up the need for residential investment.

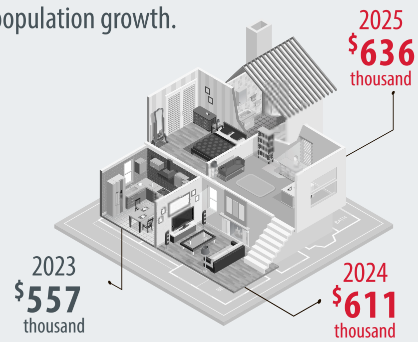
Several residential and infrastructure capital projects are already underway or set to begin in 2024. On October 10, 2024, The City of Calgary and the Government of Alberta announced that work on the Green Line LRT project will continue on the design for the alignment between 4 Street S.E. in the Beltline and Shepard, in the southeast. This is expected to be the largest infrastructural project in Calgary's history, and significant construction work is expected to start soon. The Government of Alberta has committed $1.53 billion towards the Green Line project. In addition, the design and construction phase of the Calgary Events Centre project is already underway. The arena is expected to cost approximately $800 million, with additional infrastructure and other expenses bringing the total project cost to $1.22 billion. The government of Alberta has committed $330 million to infrastructure investments, including demolishing the Saddledome and other road construction projects.

Over $2.5 billion in residential investment is already underway or set to begin. Most of these residential investment projects are set to be completed by 2026. The Bridgeland Place Redevelopment project will see the original 210-unit building, built in 1971 and reaching the end of its useful life, redeveloped into a new 222-unit affordable housing complex. In addition, the Barron Building is set to be converted into a 94-unit rental property. This, in addition to the other programs being put in place by the municipal and provincial government, will support the current housing crisis. Finally, the East Village Block Q Mixed-Use Towers project features the construction of two new mixed-use towers in Calgary's East Village

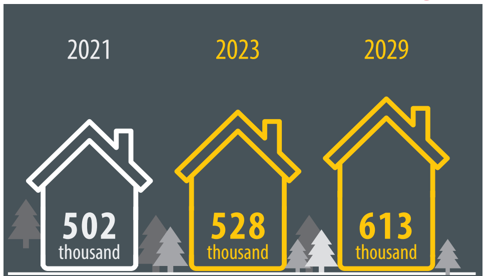
Overall, investments within the CER are expected to increase slightly this year, driven by the construction, real estate, and manufacturing industries. This improvement is expected to support the local economy, providing some modest relief to Calgary's housing supply issues. However, significant ramping up in residential investment is needed to significantly bring down the housing supply imbalances due to one of the most significant immigration target policies the federal government has ever implemented.

Benchmark House Price

The benchmark house price is projected to climb in 2025, albeit at a slower pace compared to 2024, driven by continued population growth.



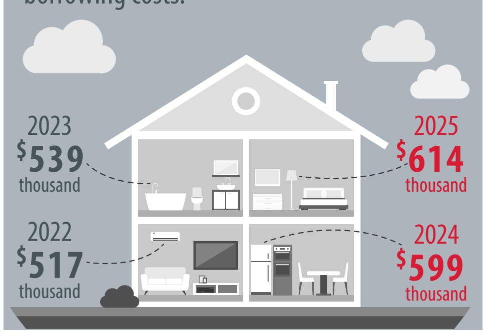
Occupied Residential Dwellings



Robust growth in occupied residential dwellings will further increase pressure on demand for municipal services through 2029.

Average Residential MLS Price

The average resale house price is likely to continue climbing, fueled by strong population growth and declining borrowing costs.



Non-Residential Construction Price Inflation – Impact on City Costs

The big issue facing non-residential buildings in Calgary today is the continued increase in population and number of people working in Calgary. Increased demand for workspace to accommodate all of Calgary's new employees is driving increased non-residential construction costs this year and next. After 2026 we anticipate the effect of lower interest rates and softening population growth will ease non-residential building costs. Overall, we anticipate only modest construction inflation going forward, though there are some significant price changes for different trades and building components.

Residential Activity – Building Investment and Expansion of the Residential Tax Base

Housing starts

Based on CMHC data, housing starts in the City of Calgary and Calgary CMA for 2024 year-to-date (as of August) reached 12,472 and 15,324 units, respectively. This marks a significant increase compared to the same period in 2022 (11,186) and 2023 (11,407), posting a record-breaking year. Notably, cumulative starts in 2024 have already surpassed the total for all of 2021 in the Calgary CMA. Despite high financing costs that have dampened some large projects elsewhere in Canada, 2024 is on track to set another record for the Calgary residential construction sector to meet roaring demands from population growth.

The growth is largely attributed to the surge in multi-family housing, particularly apartments, where starts have hit 6,436 year-to-date—well above the 10-year average (2014-2023) of 3,357. The higher demand for less expensive housing options, given higher mortgage costs, is driving this trend.

Looking ahead, housing starts are expected to reach approximately 17,700 by year-end and remain elevated in the forecast period, supported by strong demand and government policies to address housing affordability. Multi-family construction in particular, will continue to be bolstered by city-wide rezoning and federal programs, such as the Apartment Construction Loan Program and the Housing Accelerator Fund.

Building construction investment intentions

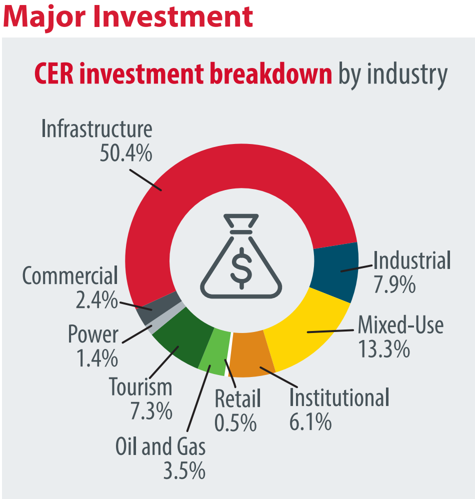
The building permit values submitted to the City of Calgary reflect the investment intentions in construction. As of September 2024, the total value of permits submitted to the City has reached approximately $6.2 billion. Residential permits account for approximately 65 per cent of this total, or $4.0 billion—about 25 per cent higher than the same period in 2023. These permits are projected to create 18,097 housing units, up from 14,466 last year.

All residential types have experienced growth, with single-family detached homes seeing a 22.5 per cent increase to $1.5 billion compared to the same time last year as a response to depleting inventories of detached homes observed in the city. In contrast, apartment growth has been slower, partly impacted by unfavourable financing conditions. Notably, secondary suite permits have more than doubled year-to-date to 2,500 units, likely due to tight rental markets and various initiatives to boost construction, such as the extended Secondary Suites Amnesty Program and newly implemented The Secondary Suite Incentive Program.

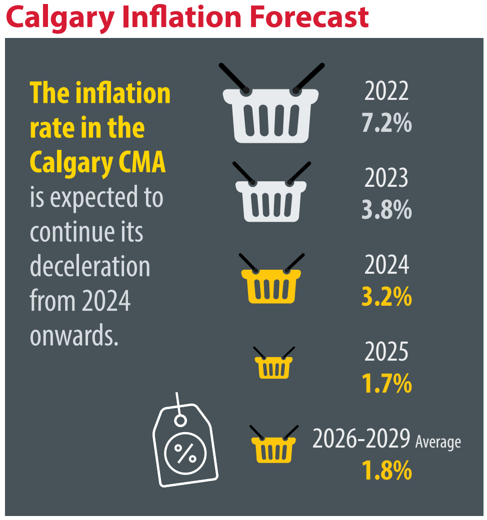
By sector, the southern part of the city has seen the largest growth in permit values compared to last year, driven by ongoing development in those areas.

This continued residential investment is expected to remain strong in 2024, and 2025 as the growth in housing demand makes Calgary an attractive place to invest and build. Permit values are projected to reach approximately $8.2 billion by the end of the year, followed by a gradual decline as the market stabilizes. However, permit values are expected to remain above $6 billion, which is well above

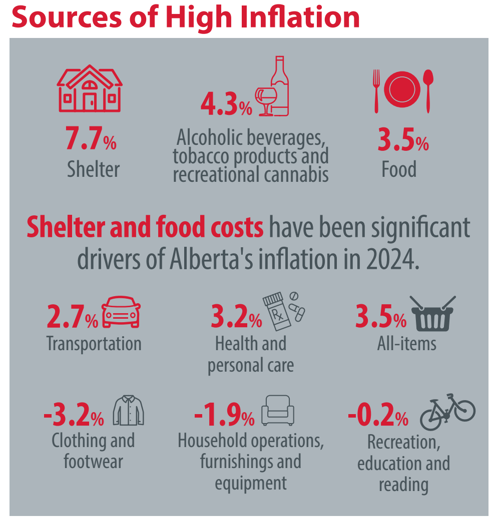
Major Investment



Calgary Inflation Forecast



Sources of High Inflation



the historical average. While housing demand from population growth may temper due to tightening immigration policies, various government programs aimed at facilitating construction, along with declining interest rates, should help sustain investment.

Benchmark Housing Prices

Building on the sellers' market conditions from 2023, driven by strong population growth, 2024 has remained a hot year for Calgary's real estate market, surpassing the national trend. The average annual growth rate for benchmark prices (composite), representing the price of a typical house in Calgary, has been 8.5 per cent in 2024 (up to August), compared to 3.4 per cent during the same period last year.

While all property types have expanded, single-family detached homes have appreciated significantly, with their average annual price growth rate in 2024 reaching 12.4 percent, spurred by robust population growth and limited improvements in supply. For example, the Northwest area has seen sharp price increases due to an acute imbalance between supply and demand.

As the price distribution of single-family homes skews toward the higher end, with limited supply at the lower end, buyers have begun substituting these homes with more affordable options amid rising mortgage carrying costs. Additionally, increasing rents have prompted many to consider homeownership, contributing to increased demand. The average annual price growth rate for apartments, semi-detached and row houses was 17.6 percent, 12.3 percent and 17.1 percent, respectively.

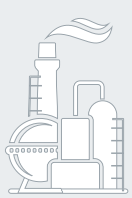
In 2024, the average growth rate in the benchmark price is expected to be around 9.7 per cent. Looking ahead, new housing projects entering the market and lower migration levels are expected to help ease price appreciation, bringing the market closer to a more balanced condition. Moreover, as housing prices rise, the level of interprovincial migration attracted by Calgary's relative affordability is expected to slow.

However, recent policy changes, such as longer amortization periods, increased price caps for uninsured mortgages, and larger RRSP withdrawals for the Home Buyers' Plan, will likely continue to stimulate demand. Declining interest rates are also expected to fuel housing demand.

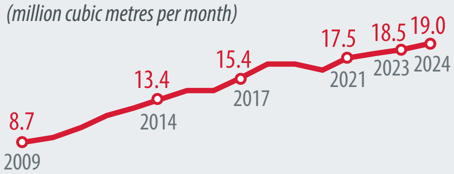
As Calgary catches up with other major cities regarding housing prices, its affordability advantage is diminishing. (See Textbox 1 for more details.)

Crude Oil Production

2024 has seen another record high in crude oil production in Alberta, averaging 19 million cubic metres per month, supported by the expansion of the Trans Mountain Pipeline.

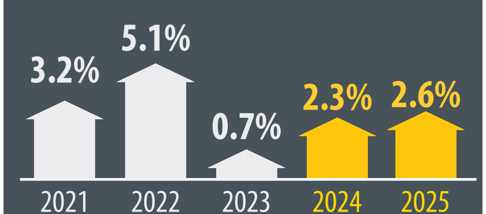


Alberta Crude Oil
(million cubic metres per month)



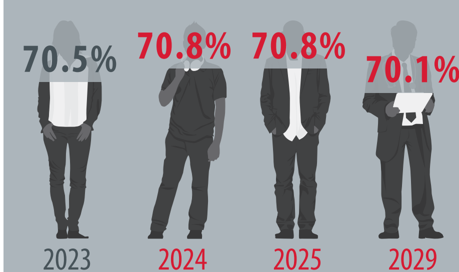
Calgary GDP Growth

2.3 per cent and 2.6 per cent **GDP growth** is expected for the Calgary Economic Region in 2024 and 2025 respectively. That's a boost from 0.7 per cent in 2023.



Labour Force Participation

The **labour force participation rate** is expected to trend upwards in 2024. Over the long term, the rate is expected to trend down as baby boomers exit the workforce.



Textbox 1

Tracking Housing Affordability: Housing Price to Income Indicator

Introduction

Recently, diminishing housing affordability has become an increasing concern for many Calgarians as housing prices continue to rise, prompting questions about Calgary's ability to remain affordable for both new and existing residents[1]. Various orders of government, including The City of Calgary, have introduced strategies to address housing challenges, such as The City's Housing Strategy[2] which focuses on facilitating increased housing supply.

To track the performance of these measures and monitor changes in affordability, reliable indicators are essential for tracking shifts in the housing market over time. Although many institutions report housing indicators, these often fail to fully align with The City's unique goals and lack the monitoring frequency and granularity needed to provide timely, actionable insights.

This textbox thus focuses on a key metric highlighted in the proposed Municipal Development Plan: the Housing Price to Income Ratio (HPIR), an indicator of housing affordability that is widely used internationally[3]. By developing an in-house benchmark that compares benchmark housing prices to median household incomes across major Canadian cities, our analysis reveals that Calgary's housing affordability has deteriorated since 2022. Despite soaring interest rates, rising home prices have significantly outpaced income growth, making it increasingly difficult for Calgarians to purchase homes.

> **"Our analysis reveals that Calgary's housing affordability has deteriorated since 2022."**

A Review of Existing Housing Affordability Indicators

There are several housing affordability indicators in Canada, which are summarized in the table below.

	Bank of Canada	RBC, National Bank	The City of Calgary, HPIR
Reported quarterly	✓	✓	✓
Reported by Subprovincial regions		✓	✓
Reported by granular property types		– *	✓
Aligns with the metrics set in City's new Municipal Development Plan			✓

* RBC reports by Aggregate, Single, and Condo, while National Bank reports Condo and non-condo. CMHC also publishes data on Core Housing Needs, which focuses on the percentage of households that are in core housing need[4].

While these existing indicators are useful, they fail to differentiate between property types, are subject to reporting delays, and make several assumptions regarding homeownership costs such as utilities, insurance, and property taxes. To address these limitations, we developed an in-house Housing Price to Income Indicator, which best aligns with the goals outlined in the Municipal Development Plan and provides greater details.

Data and Methodology

To construct the Housing Price to Income Ratio, we used a combination of data sources that are at the most granular scale available, publicly accessible, and nationally standardized. The R code used for this analysis is available upon request.

First, **housing prices** were sourced from the Canadian Real Estate Association (CREA). The monthly benchmark prices for each property type published by CREA (single, apartment, townhouse/row, and composite, which aggregates all property types) at the CMA level were aggregated into quarterly figures to align with the frequency of income data. This housing price in the area i, for a property type j at quarter-year t is denoted as follows:

$$\textit{Housing Price}_{i,j,t} \qquad (1)$$

Median household income was obtained from Statistics Canada's 2021 Census at the census subdivision level, as it aligns with the household income definition used in the City's Housing Needs Assessment[5]. Since the latest available data for median before-tax income is from 2020, it is extrapolated by using the growth rate in the average offered hourly wage for all occupations at the Economic region level, based on the Job Vacancy and Wage Survey, to extend the figures to the most recent period on a quarterly basis. This can be expressed as:

$$\textit{Median Household Income}_{i,t} = \textit{Median Household Income}_{i,2020*Gi,t} \qquad (2)$$

where Gi,t represents the growth rate in the average wage for all occupations in area i between 2020 to t.

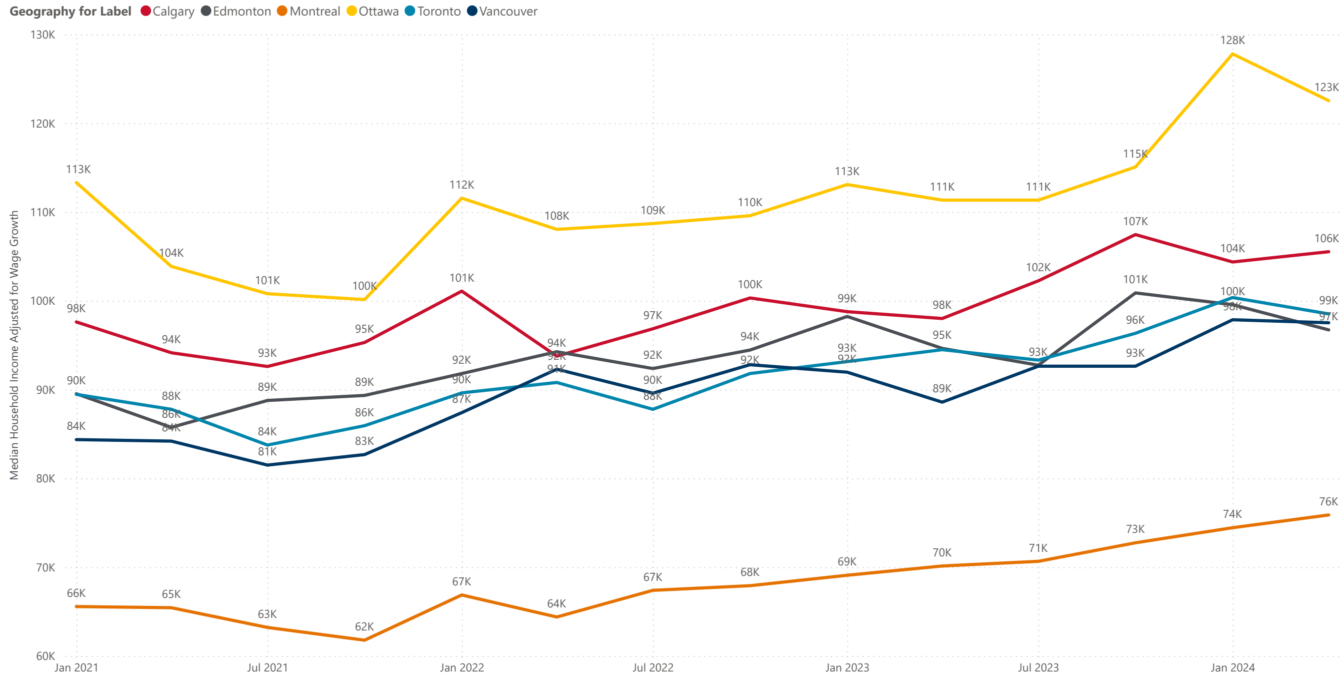
Finally, the **Housing Price to Income Ratio** was calculated by dividing the median housing prices by median household incomes for each quarter, for each area, and by property type, as shown below:

$$\textit{Housing Price to Income Ratio}_{i,j,t} = \frac{\textit{Housing Price}_{i,j,t}}{\textit{Median Household Income}_{i,t}} \qquad (3)$$

Textbox 1 **Tracking Housing Affordability: Housing Price to Income Indicator**

Quarterly Median Household Income Adjusted for Wage Growth, 2021

Created from Statistics Canada Table 14-10-0444-01 and 98-316-X2021001. Note: Household income data is at the census subdivision level and has been extrapolated by applying the growth rate of the average hourly wage



Results

The following analysis focuses on the composite, as it reflects the overall state of housing affordability for households who either own, or are looking to own a home. As of Q2 2024, the housing price-to-income ratio for the composite stood at 5.6, compared to 4.4 just three years earlier, indicating that the growth in property prices has outpaced that of median household incomes. This points to a clear trend of worsening affordability in the Calgary region. Between Q1 2022 and Q2 2024, the composite benchmark housing price in Calgary surged by 36.8 per cent, rising from $428,000 to $586,000, while wage growth during the same period was only 8.1 per cent. This rise in housing prices was the highest among the six major cities included in the analysis. Coupled with rising interest rates, soaring housing prices exacerbated the cost of homeownership, making it more difficult for many Calgarians to own a home.

Housing Price to Income Ratio as of Q2 2024

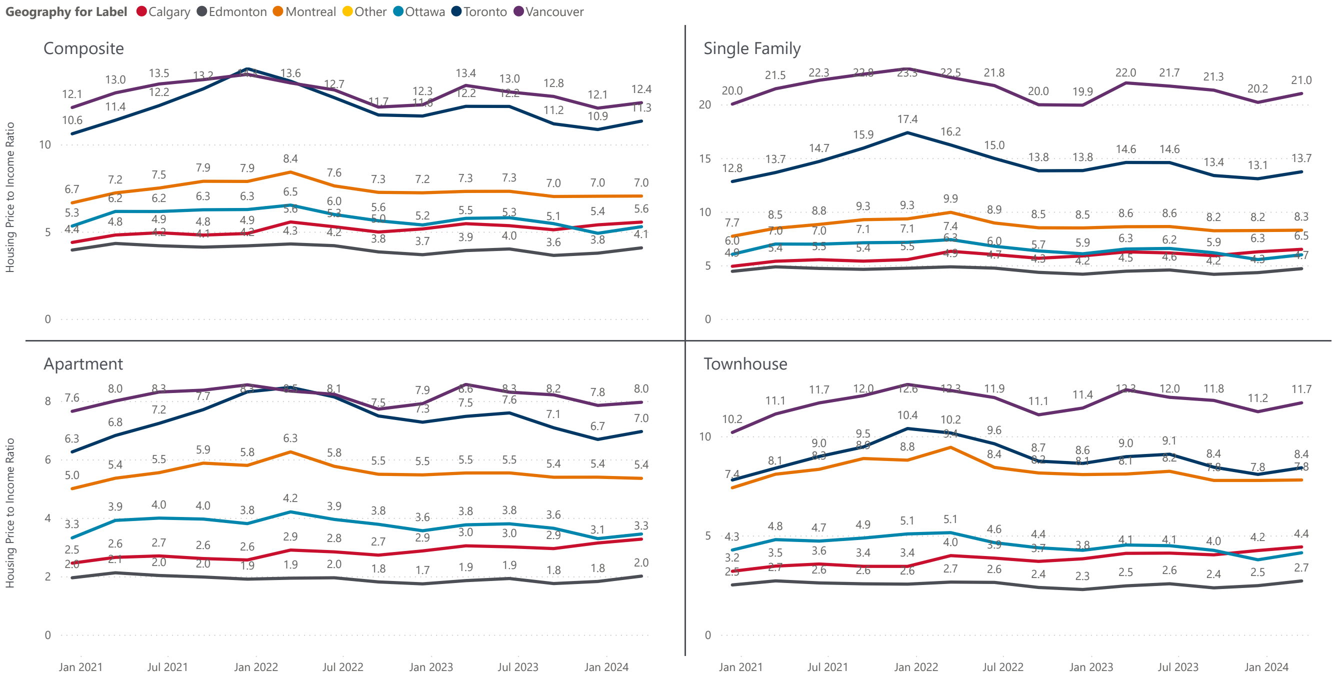
	Composite			Single Family			Apartment			Townhouse		
Geography	Q2 2023	**Q2 2024**	Change	Q2 2023	**Q2 2024**	Change	Q2 2023	**Q2 2024**	Change	Q2 2023	**Q2 2024**	Change
Calgary	5.46	**5.55**	0.09	6.26	**6.49**	0.24	3.04	**3.27**	0.23	4.10	**4.43**	0.32
Edmonton	3.92	**4.07**	0.16	4.45	**4.69**	0.24	1.85	**2.01**	0.15	2.46	**2.71**	0.25
Montreal	7.31	**7.04**	-0.27	8.60	**8.28**	-0.32	5.54	**5.35**	-0.18	8.10	**7.80**	-0.30
Ottawa	5.77	**5.29**	-0.48	6.52	**5.98**	-0.54	3.76	**3.45**	-0.32	4.52	**4.13**	-0.39
Toronto	12.19	**11.34**	-0.85	14.59	**13.72**	-0.87	7.47	**6.96**	-0.52	8.97	**8.41**	-0.56
Vancouver	13.38	**12.39**	-0.99	22.01	**21.02**	-0.99	8.57	**7.96**	-0.61	12.34	**11.69**	-0.66

By property type, the housing price-to-income ratio for single-family homes worsened the most, rising from 4.9 to 6.5, as the prices for these homes have sharply increased. As single-family homes became less affordable due to rising prices and mortgage rates, demand for less expensive housing types, such as apartments and townhouses, increased. This, in turn, pushed up prices for these types of housing, fueled by a shortage of supply, worsening affordability across the board.

The growing demand for more affordable housing types highlights the strain on the housing market. The city-wide rezoning initiative is expected to significantly increase the supply mixture of housing types across the city. A recent study suggests that supplying a balanced new housing type is an effective way to improve housing affordability through a process known as "filtering," where higher-income households move into newly built homes, creating a vacancy chain in older, less expensive homes that lower-income households can then access.[6 7 8]

Housing Price to Income Ratio by Property Type, 2021 -

Created from CREA, Statistics Canada Table 14-10-0444-01 and 98-316-X2021001. Note: Household income data is at the census subdivision level and has been extrapolated by applying the growth rate of the average hourly wage



Conclusion

In conclusion, the insights from the Housing Price to Income Ratio highlight the increasing challenge of housing affordability in Calgary, driven by high housing demand from rapid population growth. Addressing these concerns to achieve long-term housing affordability requires a greater supply of housing, particularly diverse housing types. Rezoning efforts and the other action items outlined in The City of Calgary Housing Strategy are expected to help alleviate these challenges.

Furthermore, utilizing more granular data, such as those from the civic census, would enhance the ability to monitor housing trends more accurately and at higher frequencies, providing a clearer picture of the local housing market.

Note: This indicator is subject to modifications. The author cordially acknowledges the contributions of the teams from Planning and Development Services as well as the Community Services for their cooperation and reviews.

1 https://www.calgary.ca/content/dam/www/cfod/csc/documents/cit-sat/2024-Spring-Survey-of-Calgarians-Final-Report.pdf

2 https://www.calgary.ca/communities/housing-in-calgary/housing-strategy.html

3 André, C., Gil-Alana, L. A., & Gupta, R. (2014). Testing for persistence in housing price-to-income and price-to-rent ratios in 16 OECD countries. Applied Economics, 46(18), 2127-2138.

4 https://www03.cmhc-schl.gc.ca/hmip-pimh/en/TableMapChart/CoreHousingNeedMethodology

5 https://www.calgary.ca/content/dam/www/csps/cns/documents/affordable-housing/housing-needs-assessment-2023.pdf

6 Sun, A. H. (2024). Evaluating the Impacts of Increasing Housing Supply in Canada: A Sorting Model with Heterogeneous Households.

7 Liu, L., McManus, D., & Yannopoulos, E. (2022). Geographic and temporal variation in housing filtering rates. Regional Science and Urban Economics, 93, 103758.

8 Gibb, K., Leishman, C., Marsh, A., Meen, G. P., Viforj, R. O., & Watkins, C. (Eds.). (2024). The Routledge Handbook of Housing Economics. Routledge.

Consumer Price Inflation in the Calgary Census Metropolitan Area (CMA)

Inflation in Calgary remains higher than the provincial and national average due to relatively higher shelter cost growth.

After close to two years of persistent growth in living costs, growth in the Consumer Price Index (CPI) for Calgary CMA appears to be easing. While national inflation seems to be falling towards the Bank of Canada's inflation target of two per cent, the slowdown in inflation seems to be occurring at a much slower pace in Calgary. For context, national year-to-date inflation as of June 2024 stood at 2.7 per cent, while the Calgary CMA's inflation stood at 3.6 per cent.

The primary reason why inflation in Calgary is softening at a slower pace can be traced back to record-high migration to Calgary. Calgary's housing market is not ready to absorb the number of people moving to the region, leading to record-breaking rent increases due to imbalances in the rental market (demand is overshadowing supply). Midway through the year, rental inflation stood at 18.0 per cent, the highest across Canada and the most significant component of growth in living costs. Prices for utilities are also starting to see a falling trend after a dramatic increase at the beginning of the year. This has been partly aided by lower energy prices, low marginal cost of electric plant capacities, and the Government of Alberta's pressure through Bill-19 to make utility bills more affordable[2].

Overall, we expect inflation in the Calgary CMA to decelerate from 3.8 per cent in 2023 to 3.2 per cent in 2024, still above the Bank of Canada's 2 per cent inflation target. This is expected to average 1.8 per cent between 2025 and 2029 for the Calgary CMA. The projected deceleration in Calgary's inflation can be attributed to the following factors:

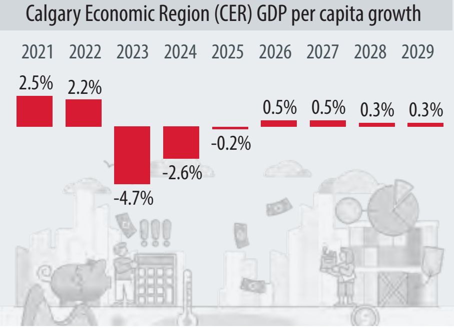
- Future projected interest rate cuts as the Bank of Canada responds to a falling trend in inflation: So far in 2024, the Bank of Canada has implemented four interest rate cuts in response to higher recessionary risks from tighter monetary policy. This is expected to provide slight relief in the rental market as new home ownership becomes attractive.
- Expected expansion in the construction industry is likely to speed up the completion of housing projects over the long term. The shortage of construction workers has added to some of the inflationary risks Calgary has experienced recently. The expected expansion of the construction industry over time is expected to improve some of the supply imbalances in the real estate industry.
- Despite the Bank of Canada's series of interest rate cuts, interest rates are unlikely to fall to pre-pandemic lows anytime soon. This reduces the likelihood of unexpected surges in consumer and business spending.

[2] City of Calgary Inflation Review May 2024.

Living Standards

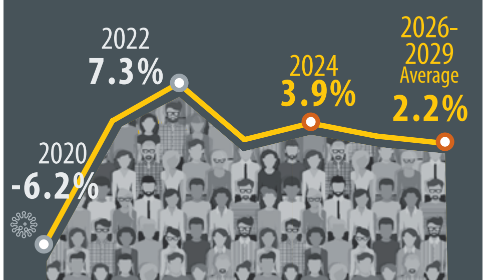
Despite the projected economic expansion, the **living standards** measured by real GDP per capita in Calgary expect **a decline in 2024**.

Calgary Economic Region (CER) GDP per capita growth

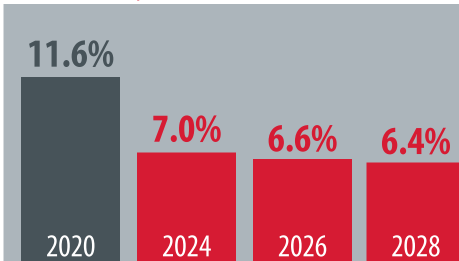


Annual Job Growth

After the 7.3 per cent high for 2022, job growth decelerated to 2.5 per cent in 2023 and **is expected to experience a higher growth rate** at 3.9 per cent in 2024.



Unemployment Rate



The **unemployment rate** should deteriorate in 2024 and 2025 as labour force gains due to population growth leads to more job seekers.

Forecast

Commodity Prices - Local, Regional, & Provincial Economy Impact

Crude Oil Prices

Global crude oil demand is expected to slow in 2024 driven partially by significant contraction in demand for crude oil from China. Gains of 800 kb/d (thousand barrels per day) year-over-year in the first half of 2024, was the slowest since 2020. The average annual gains in 2024 are expected to be lower than gains experienced in 2023 of 2.3 mb/d (million barrels per day), yet driving demand to approximately 103 mb/d in 2024. The gains in demand in 2025 are expected to mimic the expected gains of over 900 kb/d in 2024, according to the International Energy Agency October Oil Market Report. These lackluster crude oil demand gains in 2024 and 2025 also reflect the changes in the energy mix space. Such emphasis on electric vehicles, alternative energy sources and infrastructure use, structural headwinds, and subdued economic growth are taking hold in different parts of the globe.

On the supply side, production is expected to gain about 660 kb/d in 2024 despite outages caused by a political dispute in Libya and maintenance in Kazakhstan and Norway. This is however, mitigated by increasing flows from places like Brazil and Guyana. Supply is expected to rise by 2.1 mb/d in 2025, as Organization of the Petroleum Exporting Countries (OPEC+) increases supply by 540 kb/d and non-OPEC+ adds about 1.5 mb/d and voluntary cuts persist. The sliding of crude oil prices in August and early September prompted Saudi and (OPEC+) to hold back on production increases intended to go into effect in October until December.

India is poised to exceed China's crude oil demand needs reaching 200 kb/d compared to China's expected significant pull back to 180 kb/d in 2024 compared to 1.5 mb/d in 2023. The historical world oil growth demand prior to 2020 (pre-pandemic) averaged 1.4 mb/d.

The net-balancing impact in the crude oil market should see some upward pressure on West Texas Intermediate (WTI) with the average annual price settling at US$79/barrel in 2024. The WTI is forecast to decrease in 2025 to US$77/barrel and remain at US$77/barrel over the forecast horizon. The improvement/clarity in regulatory clean energy framework and a mix of alternative energy infrastructure will aid in further slack in crude oil demand gains.

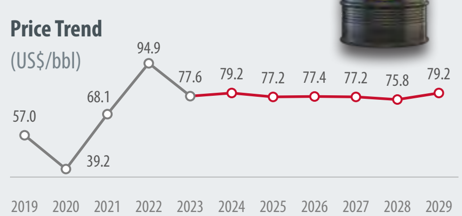
Western Canadian Select (WCS) which represents Alberta's heavier sour crude oil has generally traded at a discount to WTI, primarily due to supply capacity constraints and access to other markets other than the United States. The completion and commercial operation of Trans Mountain Pipeline Expansion (TMX) in May 2024 should aid in narrowing the price differential between WTI and WCS going forward. WCS is expected to increase to US$62/bbl in 2024 and stabilize at US$61/bbl in 2025 before averaging US$60/bbl over the forecast horizon. The price differential is expected to converge to its tightest in 2025 at US$16/bbl prior to 2027.

Natural Gas Prices

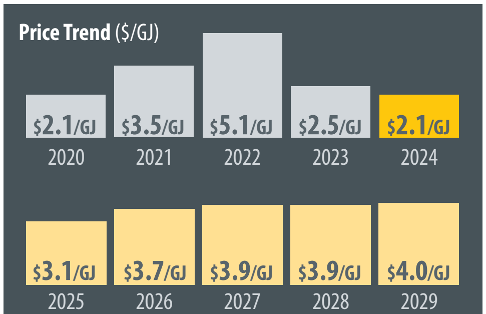
The global demand for natural gas rose an annual 3.0 per cent in the first half of 2024, well above the historical decade pre-pandemic annual average of 2.0 per cent per year. The increase in demand was driven primarily by Asia, accounting for approximately 60.0 per cent of the increase. The higher gas use by industries reflected about 65 per cent of the total increase in demand. Global demand is expected to moderate in 2024, rising by 2.5 per cent due to slowing demand in China and amid economic concerns in the United States. However, in North America the picture is reversed as it relates to drivers of the mix of natural gas demand. Industry natural gas use is expected to remain relatively flat in 2024 amid strained macroeconomic challenges while the power sector is expected to drive usage due to increased demand for electricity.

West Texas Intermediate (WTI)

Crude oil prices, including the West Texas Intermediate (WTI) price, **are expected to remain relatively stable over the forecasting horizon** as the global economy continues to transition to a green economy, yet rising geopolitical tensions can cause volatility.



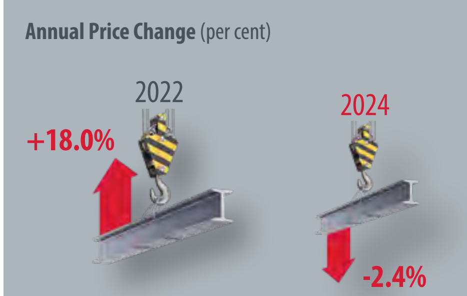
Natural Gas (AECO-C)



Natural gas prices are forecasted to remain relatively low in 2024 given ample storage level, but they should recover as the demand and supply balance improves.

Iron and Steel

Global **iron market** looks relatively flat. Market consolidations pose the greatest local price risk in the near future.



In Canada, natural gas consumption in the first half of the year rose an annual 4.6 per cent. The improvement in the energy mix, such as renewables and alternatives will continue to sway pressures on demand for natural gas across the globe. Canada saw an 8.8 per cent increase in industrial consumption in the first half of 2024, but its share of total consumption is lower than in 2023. Alberta saw an annual increase of 5.4 per cent in natural gas consumption in the first half of 2024 and its share of industrial natural gas consumption fell below 2023 levels. Consumption growth of natural gas in Alberta in 2024, is poised to remain above the 8-year annual average growth rate of 3.2 per cent per year fueled by a greener pathway economy.

Supply of natural gas in Alberta is expected to be robust going forward as major projects are either planned, under construction, or completed, such as the Coastal GasLink pipeline from Dawson Creek to Kitimat in British Columbia; the expansion of the Nova Gas Transmission Line system near the communities of Grand Prairie, Edson, Nordegg, Didsbury, and Beiseker in Alberta; Future Energy Park Renewable Natural Gas and Ethanol Project in Calgary (which will be North America's largest carbon negative renewable natural gas and ethanol project that will see low-grade wheat and agricultural products transformed into natural gas and ethanol) come on line. Alberta's production in the first half of 2024 has seen an annual 1.0 per cent increase, compared to the annual increase of .55 per cent experienced in 2023, and the 8-year annual average production of 0.28 per cent per year increase prior to 2024.

In the first half of 2024 natural gas inventories had tightened compared to the same time a year ago, despite that, AECO average annual price is expected to come in lower at $2.10/GJ in 2024 compared to $2.50/GJ in 2023. The price is expected to increase by more than a dollar in 2025, and average $3.90/GJ over the rest of the forecast horizon as demand and alternative greener energy sources and infrastructure improve.

Construction Commodities

Key drivers to watch:

- Energy prices and politics – particularly Canada's carbon tax
- Interest rates
- Geopolitics
- Climate

Iron and Steel

Overall, the global outlook for steel demand is relatively flat in the short term but the market looks over-supplied. Chinese manufacturers might be dumping steel on international markets. In response, Canada has threatened 25 per cent tariffs that will begin in time for the U.S. election. We anticipate tariffs will come into play one way or another in 2025 resulting in a bump in steel prices in Alberta. Thereafter, we anticipate relatively flat pricing for our forecast horizon.

Aluminum

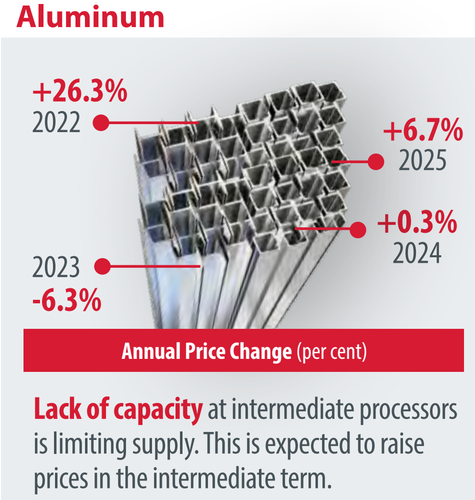
Market demand continues to grow about 6 per cent during the forecast period. Increased use in construction is the primary driver of increased demand for aluminum going forward.

Aluminum smelters have sufficient productive capacity today to meet future growth, but they are having difficulty sourcing raw materials. Alumina plants have reached capacity and that is limiting global aluminum production. This is driving prices for aluminum up beyond our prior expectations.

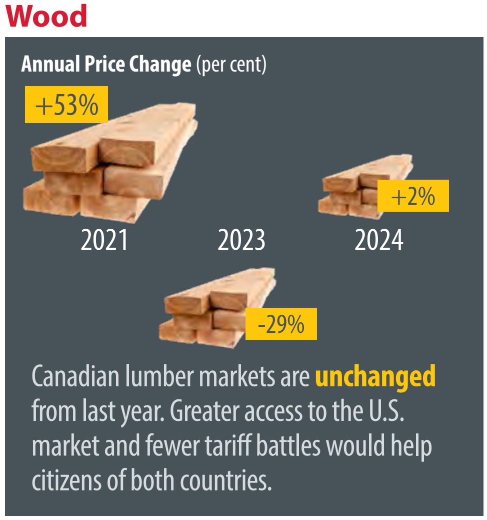
Wood

Lumber prices continue to be relatively stable at around the US$400/thousand board feet range in North America. Canadian markets continue to suffer from lack of access to U.S. markets meanwhile increased interest rates have reduced demand for lumber in the U.S. There are increased housing starts in Canada,

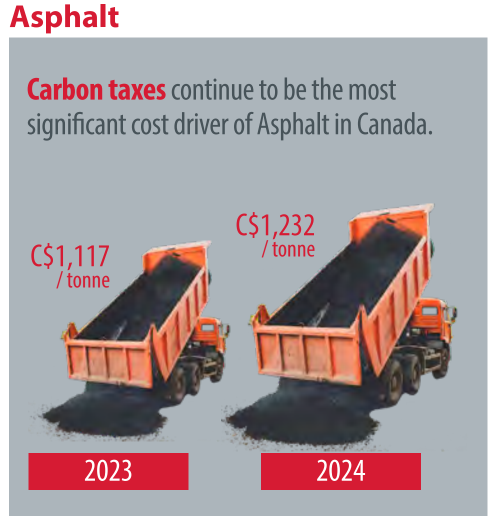
Aluminum



Wood



Asphalt



particularly for single family dwellings, and this is buoying the Canadian lumber producers.

Our outlook for lumber prices is below the Consumer Price Index (CPI) level growth for the foreseeable future. The only way lumber prices could soften is if Canada got greater access to U.S. markets through a renewed softwood lumber agreement or if retailers lowered their margins.

Asphalt

This summer's hailstorm in Calgary caused a significant spike in demand for shingles, but globally the demand for asphalt continues to grow at about 4 per cent per year.

Input prices to make Asphalt are softening but programmed carbon tax increases will push Asphalt prices up. Our outlook for Asphalt prices is annual increases at rates higher than consumer inflation for the duration of the forecast. In the remote chance that Canada's carbon tax disappears our Asphalt forecast changes to an immediate drop of 30 per cent followed by annual decreases in the 1 per cent range.

Operational Commodity Prices

Rubber

The European Union has passed new laws restricting the trade of goods produced on deforested lands and mandating costly tracing, which is pushing prices up. Rubber markets continue to grow at about a 7 per cent pace per year particularly as demand for tires grows in China. Our forecast for rubber prices in Canada for the next 2 years shows significant increases as the markets adapt to new European rules and while China builds up its stockpiles. Thereafter we anticipate increases in supply will meet the pace of demand growth.

Diesel Oil

Diesel prices follow the price of oil, costs of refining and the impact of carbon taxes. Our model currently includes the most current projections for the price of oil in world markets. Our current forecast presumes the carbon tax will continue. Should the tax disappear, we would expect diesel prices in Calgary to drop 12.5 per cent to about 142 and to hover just below 140 for the remainder of the forecast period.

Vehicle Parts

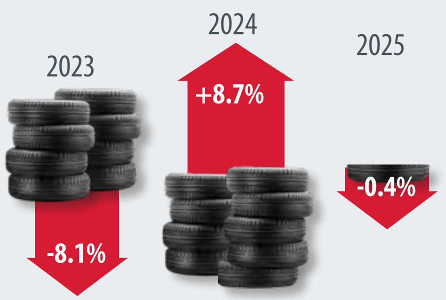
Our outlook for vehicle parts remains relatively unchanged from our Spring 2024 forecast. Some escalation of material costs has influenced parts prices, but long inventory periods have delayed the pass-through to consumers. We anticipate the pass-through should be complete by 2026.

We continue to see some parts suppliers present information showing some of the raw materials used in manufacturing of their output has seen significant uplift. Those presentations continue to lack evidence as to how those raw material increases have impacted the cost to produce those parts as we see manufacturers substituting materials, manufacturing processes, and cutting corners in response to those raw material price increases.

Rubber

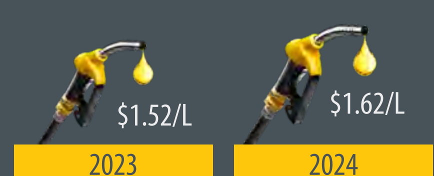
Increased **reporting requirements** in Europe adding to global costs. Inventory build-up adding to demand in the short term.

Annual Price Change (per cent)



Diesel Oil

Alberta Diesel Pump Price (tax included)

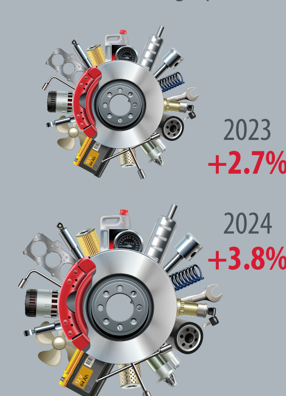


Suez canal issues resolved and Diesel prices softer than expected so far in 2024 notwithstanding the current Israel issue. Expectations for **stable prices**, unless global politics intervene.

Vehicle Parts

Parts still showing **higher than usual growth** as people maintain cars longer in response to dramatically increased prices for new vehicles.

Annual Price Change (per cent)



Textbox 2

Lumber Availability and Price

Pre-2007

Canada had a softwood lumber agreement with the U.S., which provided Canada access to U.S. markets. There were continuous issues over prices and the U.S. regularly imposed tariffs on Canadian exports*** but Canada did have access to the U.S. housing market, which is 10 times bigger than the Canadian one. The U.S. housing market was artificially inflated at the time as ownership was overly encouraged by lenders operating through the sub-prime market. Through this market, unscrupulous lenders took advantage of mortgage borrowers by mixing their debt and monetizing it through derivatives markets, which were poorly regulated. The financial house of cards fell in 2007, and the Canadian lumber industry was collateral damage as demand for new houses plummeted in the U.S..

Still, until 2016 Canada had a softwood lumber agreement with the U.S., which permitted some continued access to U.S. markets. It expired and, though there have been some discussions, no formal agreement has replaced it yet. Since the Canada/U.S. softwood lumber agreement expired in 2016, U.S. demand for Canadian lumber has fallen by 12 per cent. As a result of the faltering market in 2019 some lumber mills closed in British Columbia (BC) and many others reduced operations. Some layoffs ensued, originally intended to be temporary, but became permanent. Canada lost some machinery to disuse and more importantly the experience to operate it.

Wildfires have taken a toll on the lumber industry in Canada as well. Total losses have been relatively minimal compared to the size of the forests in Canada. However, the areas impacted recently had strategic importance. Recent fires have been in managed strands, which were relatively close to existing mills. Now, those mills must pay higher transportation costs to harvest lumber further afield, at a time when fuel costs have risen significantly.

The global pandemic, which started at the end of 2019, impacted productive capacity of the Canadian lumber industry. Lockdowns limited the number of hours mills could operate, while other logistic bottlenecks arose. Residents decided at the time to do small renovation projects, which accelerated demand at the same time too. All this resulted in a significant upswing in retail

> **“The financial house of cards fell in 2007 and the Canadian lumber industry was collateral damage as demand for new houses plummeted in the U.S.”**

prices for lumber and this is key: mills were not situated to take advantage of the price increases. Profits went to wholesalers and retailers. Some lumber strands are owned by private individuals, and they increased their log prices as well. As a result, some mills were squeezed from all angles during the price spike of 2020/2021.

Today

One legacy of the pandemic is that it was the final nail in the coffin for printed news. The internet has replaced paper as the medium people consume news now and this is a critical issue for the Canadian lumber market. Sawmills in Canada used to sell two primary products: lumber and pulp (the residue left over after logs are sawed into boards). Pulp has many uses such as a feedstock for rayon production, but most of it is used to wind up as paper. Demand for paper has plummeted as demand for paper newspapers has waned. Demand for pulp is down at the same time and the overall demand for lumber is reduced due to reduced access to the U.S. market.

> **“Immigration backlogs, and increased international students and Temporary Foreign Workers (TFW), has added additional demand to an already constrained lumber market.”**

Demand for housing in Canada today is increased. Household formation was delayed during the pandemic and there is a natural backlog of new housing needed as a result. Immigration backlogs, and increased international students and Temporary Foreign Workers (TFW), has added additional demand to an already constrained lumber market. This is resulting in continued increased prices for lumber which, under ordinary circumstances, would encourage mills to produce more, which would drive prices down. But the Canadian lumber industry is not experiencing ordinary circumstances today.

Mills are not receiving increased revenues from increased retail prices. Mills are now located far afield from harvesting grounds and have to pay higher transportation costs. They could relocate but that would mean incurring

> **“a house in Calgary that was valued at $550,000 in 2020 is today worth $720,000”**

capital costs and interest rates have risen dramatically. Even if the mills did relocate, the only way it would be profitable is to increase capacity. However, in spite of the increased Canadian demand, the reduced access to the U.S. market means there just isn't enough demand to build new mills that would operate at an efficient scale. Despite this, there are rumors of a few mills being proposed. However,

1) After the recent demise of the British Columbia (BC) lumber industry it is unknown if skilled labour can be induced to return to the industry to work at those mills, and

2) While rumors of new mills persist, existing mills continue to close, like** Canfors' closure of BC's Vanderhoof and Ft St. John mills, which was announced on Sept 4, 2024. Over the past decade Canfor had closed 10 of 13 mills it had in British Columbia.

Increased lumber prices are not going away any time soon because multiple roadblocks stand in the way of lowering them. According to BILD*, increased lumber costs have added $40,000 to $50,000 to the cost to build an average house in Alberta in recent years. Adding on profit margins, agent fees, carrying costs and sales taxes this results in an increase of about $70,000 in the retail price of a typical Alberta house. When prices for new houses go up, the prices for resale houses are lifted as well because consumers have a high degree of substitutability between new and resale homes. Add in overall inflation since 2020 to this exceptional increase in lumber costs, a house in Calgary that was valued at $550,000 in 2020 is today worth $720,000. And that price is not going down because that's the replacement value in today's materials markets, which aren't going to be able to lower their prices without multiple policy and financial interventions.

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* https://bildalberta.ca/rising-material-costs/ accessed Sept 5. 2024

** https://www.cbc.ca/news/canada/british-columbia/canfor-vanderhoof-fort-st-john-sawmill-closure-1.7313849 Accessed Sept 5, 2024

*** Indeed the U.S. continues to impose tariffs on Canadian softwood lumber exports with the U.S. announcing new higher tariffs in February 2024.

Assumptions

Economic Conditions in Alberta

Future of Growth

Investment forms the backbone of future growth and is a necessary catalyst to absorb both population and physical growth, production, and, correspondingly, employment in any region.

According to Alberta Major Projects list of all construction projects at or over $5 million, published by the Government of Alberta in September 2024, Alberta had over $71.0 billion worth of projects under construction. Infrastructure projects made up 12.2 per cent of the total projects under construction, while building construction (Residential, Commercial, Mixed-Use, Industrial and Retail) made up $47.4 billion or 66.6 per cent. The power, pipeline and oil and gas had about $7.6 billion or 10.7 per cent under construction in Alberta. The total investments under construction make up about 20.6 per cent of Alberta's expected real gross domestic product in 2024, or about $342.4 billion. The pace of strong population growth experienced in 2023 of 4.1 per cent and followed by 4.4 per cent in 2024, is reflected in the real estate construction activity despite elevated borrowing rates. However, the various affordable and multi-family government-incentive building or conversion programs at the Canadian Alberta and Municipal orders of government have assisted in mitigating some of the impacts of elevated borrowing rates and correspondingly are expected to increase housing supply stock. Construction projects proposed total $83.2 billion. Power, pipeline, and oil and gas make up over $52.5 billion or 63.0 per cent of the total value of all proposed projects, while infrastructure makes up over $13.7 billion or 16.5 per cent.

Balancing A Greener Path to Economic Growth

The Alberta economy grew by 1.5 per cent in 2023 on the backdrop of a tight monetary policy stance embarked on by the Bank of Canada in 2022-2023 employed to combat high inflation. Over the last decade, prior to the pandemic of 2020, average annual real gross domestic product (GDP) grew by 2.7 per cent per year. Alberta saw economic growth of 5.0 per cent per year over 2021-2022, as the Bank of Canada policy rate cycle hike began in March 2022, the impact was felt in 2023, as the economy slowed to 1.5 per cent based on successive rate hikes and the lag impact effect. Historically, British Columbia and Alberta have led economic growth in Canada, with Alberta growing at approximately 2.7 per cent per year between 1997 and 2023, the second fastest growth amongst the provinces. Growth is expected to strengthen as the Bank of Canada's monetary stance is relaxed in the second half

Top Alberta Major Projects Underway

Telus Infrastructure Upgrades (Province wide 2023-2027)
$19B

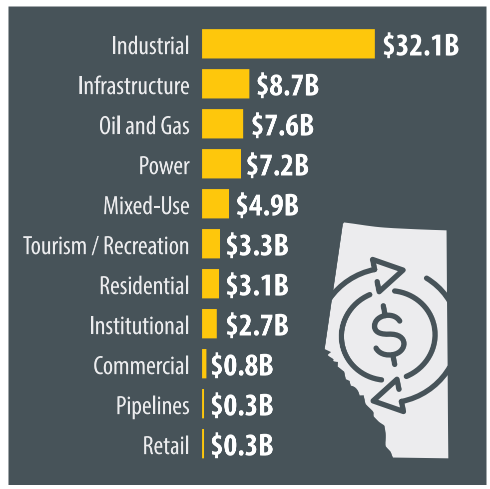
Dow Fort Saskatchewan Path2Zero Expansion
$11.6B

Taza Mixed Use Development
$4.5B

Mildred Lake Mine Extension (MLX) Project
$3.3B

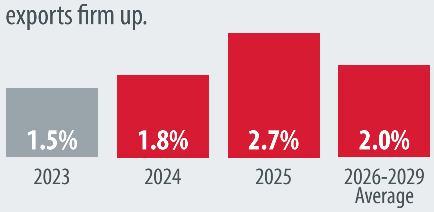
Valley Line West LRT
$2.67B

Major Projects over $5 million Under Construction in Alberta



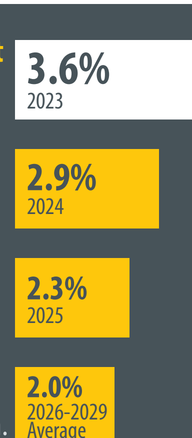
Alberta Economic Performance

The **backdrop of lower borrowing costs in 2024H2 and beyond** will see **Alberta real GDP growth rise in 2024 and 2025** as business investments, household consumption, inventories, and exports firm up.

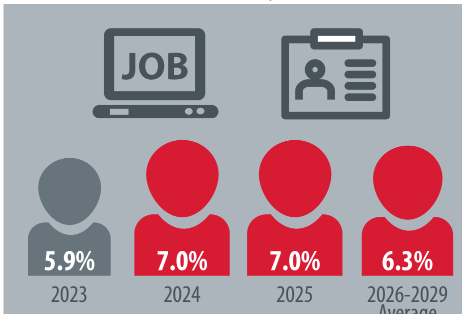


Alberta's Employment Growth

Alberta's employment growth should decelerate in 2024 due to prolonged higher borrowing costs which weighed on business investment intentions and differed household consumption.



Alberta's Unemployment Rate



Alberta's unemployment rate should **decelerate in 2024 due to labour force growth outpacing employment absorption**, driven fundamentally by stronger population growth.

of this year and population growth remains strong. There have been four recent consecutive rate cuts (with the most recent as of October with –0.5 percentage point cut, and the previous cuts of 0.25 percentage points) beginning in June of this year, since the last rate hike cycle ended in July 2023. The expected lower borrowing cost for businesses and households coupled with a larger consumer base, bode well towards firming private business investment and household consumption as these are two significant economic drivers that contribute to economic growth. It is important to note that as more homeowners on fixed-five-year mortgage begin to approach renewals the new higher rate environment will tighten some consumer spending in 2024 and into 2025. The real gross domestic product (GDP) is expected to grow a bit faster in 2024 at 1.8 per cent as rate pressures unwind and the completion and commercial operation of Trans Mountain pipeline expansion (TMX) adds to crude oil delivery capacity. The expected higher West Texas Intermediate oil price of US$79/bbl in 2024 and the improved oil delivery capacity of almost triple by TMX, should contribute to upward pressure on the Western Canadian Select oil price index (expected to reach US$62/bbl in 2024) and aide in narrowing the oil price discount between these two in 2025.

Slower Pace of Labour Force Absorption Due to Unsustainable Population Growth

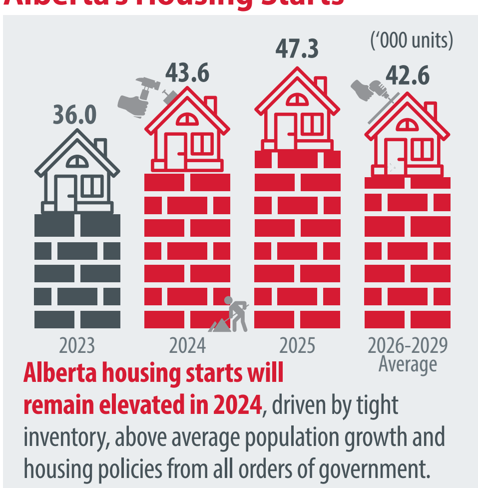
Alberta's population is estimated to increase by 185,200 persons or 3.9 per cent in 2024 to 4.88 million persons. International net migration is expected to be above last year's increase reaching 117,400 persons, while interprovincial net migration is expected to scale back, reaching 49,100 persons. Despite expected firm employment growth of 2.9 per cent in 2024, the strong population growth improved the pace of the labour force growth but at a much faster rate than employment growth, causing the unemployment rate to remain elevated at 7.0 per cent in 2024, (1.1 percentage points above Alberta's 2023 unemployment rate).

The larger labour pool expands the potential skill labour set employers can choose from. Though the hourly nominal wage rate is expected to keep pace with 2023 growth at 4.1 per cent, the slackness in the labour market demonstrated by elevated unemployment rate is expected to slow hourly wage growth in 2025 as employers have more options to choose from. However, as the net migration moderates towards sustainable levels driven by relatively higher unemployment compared to other regions of Canada, labour force growth is expected to reduce pace relative to employment growth driving the unemployment rate lower to 6.7 per cent by 2026.

Target in Sight

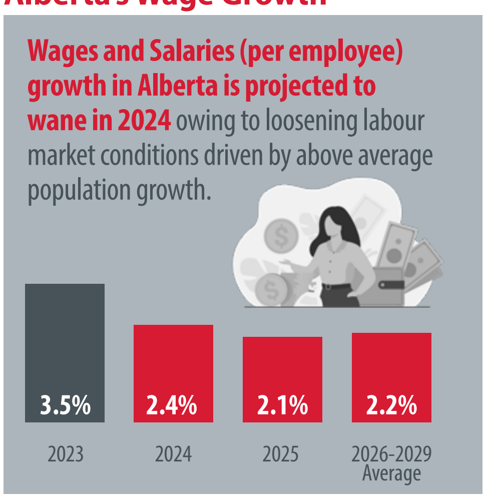
Alberta Consumer Price Inflation is poised to slow to 2.9 per cent in 2024 as the aggressive rate hike cycle by the Bank of Canada, which started in March of 2022, began crawling back some of its cumulative effects in June of this year. Already, there have been a total of 1.25 percentage points decrease from the 5.0 per cent Bank of Canada policy rate in May. Despite shelter inflation being the culprit in elevated Consumer Price inflation in 2024, the housing supply programs in place by the Federal, Alberta, and municipal governments in Alberta are poised to improve Alberta's housing supply shortage as residential investments materialize. Total housing starts are expected to increase by 7,600 more than in 2023 and reach about 45,500 dwelling units in 2024 and 2025. The historical number of housing starts have averaged about 32,000 total units per year between 1997 and 2023. The addition of another 90,000 total housing starts is expected to grow the housing stock and reduce the housing market imbalance, which has driven significant house price swings in Alberta regions.

Alberta's Housing Starts



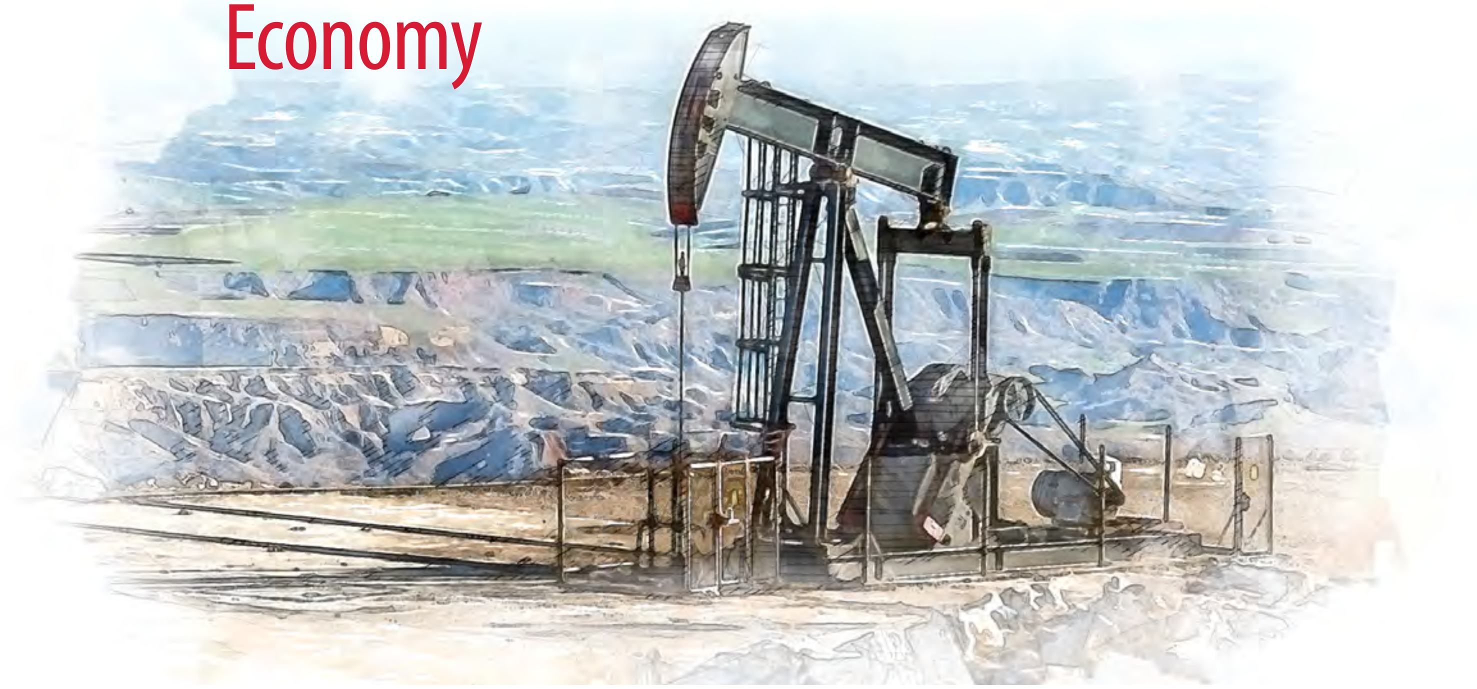
Alberta's Consumer Price Index

Alberta's Wage Growth



Textbox 3

Measuring the direct and indirect impact of the Oil and Gas Sector on the Calgary Economy



Understanding the interconnectedness of industries in the region identifies the recipients within the supply chain production and their contribution to job creation, regional sales, gross domestic product, and income creation to mention a few. Economists have traditionally tackled understanding the direct and indirect impacts of economic stimuli with dynamic or static models. The use of Computable General Equilibrium (CGE) or Dynamic Stochastic General Equilibrium (DSGE) models (dynamic) are large numerical models which use economic theory and available regional data to mimic regional economic performance driven by shocks to the economy. The static models are generally of the form of an input-output (IO) Leontief algebraic model, which traces or summarizes the multiplier effect of a change in final demand or output in each economic region.

Corporate Economics (CE) provides a deep dive into the impact of mining, oil and gas (MOG) across 20 production sectors identified by Statistics Canada using the North American Industry Classification System (NAICS) at the 2-digit level (industry aggregation, sector). The lower classification levels (lower digits; lowest 2-digit, 3-digit) identify aggregation of industries to sectors and sub-sector levels, respectively. The most detailed level of disaggregation of industries is at the 6-digit NAICS level, comprising 240 industries. Using the most recent/latest data (2020) from Statistics Canada on Supply Use (Input Output (IO)) tables for Canada and Alberta, which identify all monetary value of inputs and outputs produced and consumed by all industries, and end-users (final demand, composed of households, government, non-profit institutions, and the rest of the world/exports) and an algebraic economic general market clearing condition across industry and commodity are imposed and solved.

“Corporate Economics (CE) provides a deep dive into the impact of mining, oil and gas (MOG) across 20 production sectors identified by Statistics Canada using the North American Industry Classification System (NAICS)”

Some of the pros and cons of the application of economic impact analysis using the IO modeling are briefly highlighted below.

Data And Assumptions

The data requirement for the IO model is very large, detailed, readily available, and spans across (240 industries including six fictive industries or 236 industries, 492 intermediate inputs of production, including 6 fictive commodities or 486 commodities, and 8 primary inputs). The final demand agents span 293 categories of final demand across 486 commodities. International and interprovincial trades across the 486 commodities are also available. The retail, wholesale, and transportation margins across all the commodities and agents/participants are available, taxes on products and production across all commodities and agents/participants by the three orders of government (local, provincial, and federal) are available.

The data provided by Statistics Canada has a three-year lag, thus in 2024, the most recent Supply Use (IO) table will be available in November reflecting the composition of the economy in 2021. The Supply table highlights all monetary domestic production values by each industry and international and interprovincial import values by commodity. Also available in the Supply table are the margins (on trade and transportation) and taxes on products/commodities. The Supply Use table identifies the intermediate commodities/materials monetary value consumed by industries, the primary input values (which are commodities that cannot be produced by these industries) also consumed by industries. The Supply Use table also highlights the monetary value of consumption of the commodities, by final demand: households, nonprofit organizations serving households, governments, gross fixed capital formation, inventory, and exports. The model creation assumes all prices do not change within the period; agents cannot react to changing market forces within the period. Production or technology assumes a constant return to scale characteristic, which simply means, production is elastic, that is, it is fully responsive to inputs, thus changing inputs by any factor would correspondingly reflect in output produced (no production capacity constraint/bottlenecks). The markets are assumed to clear, in other words, supply and demand in both the industry and commodities markets are met. The resolution of the system of algebraic equations summarizes the contribution of domestic resources by industries required to meet a dollar change in final demand or output.

Final demand is assumed to be exogenous in the national model whereas in the provincial model, interprovincial exports are endogenized, which highlights the fundamental deviation from the national model. The result or implications of the economic impact are said to be open impacts. When the household is endogenized by treating it as an industry, then we can identify the commodity labour and the corresponding results from the IO model are said to be from a closed IO model. In our analysis here we will consider the lower bound economic impact case which assumes an open IO model, therefore the aftermath of labour income is not capitalized in economic impacts, which are generally captured in alternative economic impact assessment tools, such as Computable General Equilibrium (CGE) or Dynamic Stochastic General Equilibrium (DSGE) models. There is a host of literature on input output economic impact modeling at national and regional levels. The origin of IO predates Wassily Leontief's model of (1936,1941, 1951,1953), stemming from the work of a French economist Francois Quesnay in 1758. However, other seminal works on IO by a few others such as Walter Isaard (1951), Karen Polenske (1980), Blair and Miller (1984,2009), Flegg, Webber and Elliott (1995), Flegg and Tohmo (2013), Beaufils and Wenz (2021) to mention but a few.

Leontief Algebraic Modelling

The Leontief approach provides the backdrop to understanding the multiplier effect, the direct and correspondingly indirect effects of a change in final demand or output.

A dollar spent at the retail bakery would cause the bakery to request flour from the retail flour shop, who would reach out to the wholesale trader, then reach out to the manufacturer, who would reach out to the farmer, and the farmer may reach out for fertilizer or others from the wholesaler, who will reach out for transportation, and so on and so it goes. But note that a dollar was spent at the bakery, and in turn a portion of the dollar is used to request inputs from others, and a portion of that dollar from the others will need some portion of its portion towards another. The moral of the story is that the share of the initial dollar needed to purchase intermediate consumption will continue to decrease till everyone within the supply chain required to meet the dollar demand has been reached. The technology required by each industry exhibits an upper bound of no more than one and no less than zero. It is one, if the value of the commodity/input needed by the industry to produce the total output are equal and no imports are needed, else, it is less than one and bounded below by zero (given commodities are not negative in value, that is, industries cannot throw away commodities).

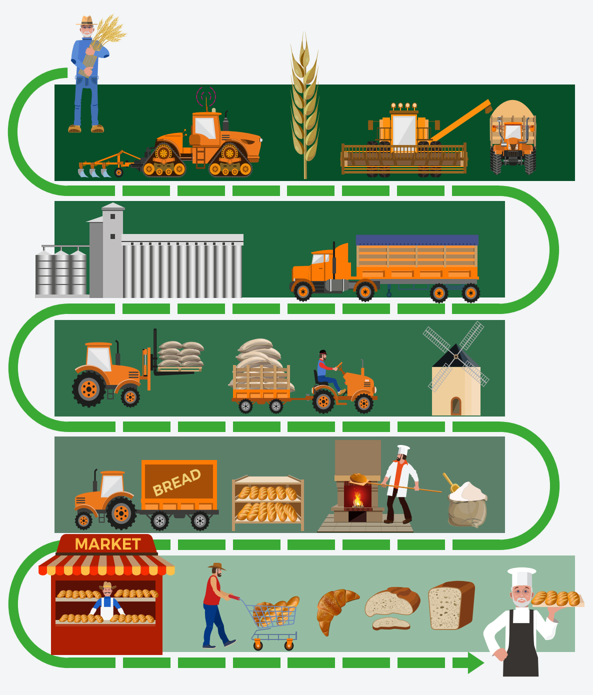


Illustration of Inter-Industry Connectivity

Measuring the direct and indirect impact of the Oil and Gas Sector on the Calgary Economy

Model Summary:

- Calgary Economic Region identifies production sectors and the inter-dependence across other production sectors as it relates to the purchase of intermediate consumption/materials/inputs from one another.
- The production of output by one industry is the demand for input by others and vice versa. The remaining demand beyond the industry demand sectors is defined as Final Demand.
- Final Demand is a combination of household expenditures, non-profit industries serving household demand, government consumption, industry capital formation, inventory and exports.
- To quantify the economic impacts of a dollar spent in one industry or industries due to an increase in demand or output, the model determines what input requirements are from within the region and the period of production.
- Other input requirements, such as imports from outside the region, inventory withdrawals, scraps and used inputs are considered leakages.
- The remaining inputs, which are not intermediate consumption/materials or leakages, are defined as primary inputs, such as labour compensation, gross profits, taxes and subsidies on production and products.
- The inter-provincial trade between provinces is captured by treating the interaction of imports and exports as a function of demand for industry inputs, which drives further economic activity and captured within the region.
- The inter-regional and intra-regional capture by the model enables the summarization of multiplier effects, which quantify the full economic impact of a change in demand or output. The multipliers are considered open multipliers.
- By treating the household as a new industry and repeating the processes above, the multipliers which highlight the quantitative impact of a dollar increase in demand or output is defined as closed multipliers.
- The addition of households as an industry enables the reiteration of wage gains and spending propagation through the model initially driven by a dollar increase in demand or output, therefore creating larger industry multiplier impacts.
- The open multipliers summarize the direct and indirect economic impacts, while the closed multipliers summarize direct, indirect and induced (caused by wage gains) impacts.

The results shared below reflect the open model IO economy.

Findings

We identify the first 10 industries within the supply chain of the mining, oil and gas (MOG) sector that are significant contributors in the production of MOG sector in consecutive decreasing order.

There are 20 industries identified at the 2-digit NAICS level that span all production, we identify the first ten other major sectors that contribute to the MOG (2-digit NAICS, 21) in decreasing order (dollar value of magnitude in supply/production). Manufacturing contributes the largest value to the supply chain followed by Transportation and Warehousing (2-digit NAICS 48-49), Professional, Scientific and Technical Services (2-digit NAICS 54), Wholesales Trade (2-digit NAICS 41), Finance and Insurance (2-digit NAICS 52), Administrative and Support, Waste Management and Remediation Services (2-digit NAICS 56), Real Estate and Rental and Leasing (2-digit NAICS 53), Utilities (2-digit NAICS 2), Retail Trade (2-digit NAICS 44-45) and Information and Culture (2-digit NAICS 51). These 10 sectors contribute 72 per cent of the indirect impact on the supply chain and when MOG indirect impacts are included the total indirect impact rises to 93 per cent in value of the supply chain. The total indirect impact from all of the industries contributes approximately a 40.0 per cent increase in the supply chain value to the MOG sector.

Stated differently, the impact of a $1 increase in output of mining, oil and gas (MOG) contributes an indirect increase in the value of MOG output of approximately 40 per cent by all industries (including MOG) within the supply chain.

Figures 1 and 2 demonstrates the indirect impact of a million dollar increase in MOG in Calgary in the following industries.

Conclusion

The inter-industry relationship of Mining Oil and Gas (MOG) Sector across other producing sectors in Calgary estimates a 40.0 per cent indirect increase in production value generated by the production supply chain to the MOG sector. The runner up in the production supply chain of MOG is the manufacturing sector, adding 17. 1 per cent and followed by transportation and warehousing sector contributing 11.9 per cent, while profession, scientific and technical services sector adds 11.4 per cent. The least contributor in the production supply chain is arts, entertainment and recreation contributing 0.17 per cent.

We can also use the results of the IO Leontief modeling to study or determine job creation, value added, income generated, taxes collected by the three orders of government, greenhouse gas emissions (GHG) by sector, water usage by sector and other "what if scenario" responses (such as a new industry addition or loss) to mention but a few.

Figure 1 Indirect contributions per $1 million spent in MOG

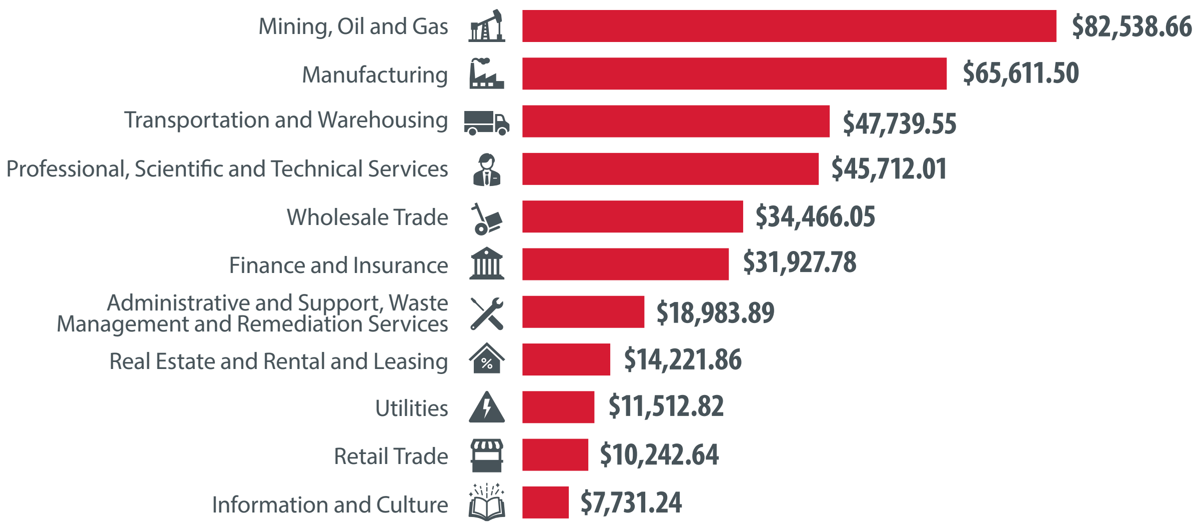


Figure 2 Indirect contributions by all production sectors, 2-digit NAICS

91	Public Administration	$3,169
81	Other Services (except Public Administration)	$5,894
72	Accomodation and Food Services	$2,492
71	Arts, Entertainment and Recreation	$694
62	Health Care and Social Assistance	$737
61	Education Services	$772
56	Administrative and Support, Waste Management and Remediation Services	$18,984
55	Management of Companies and Enterprises	$5,735
54	Professional, Scientific and Technical Services	$45,712
53	Real Estate and Rental and Leasing	$14,222
52	Finance and Insurance	$31,928
51	Information and Culture	$7,731
48-49	Transportation and Warehousing	$47,740
44-45	Retail Trade	$10,243
41	Wholesale Trade	$34,466
31-33	Manufacturing	$68,324
23	Construction	$5,241
22	Utilities	$11,513
21	Mining, Oil and Gas	$82,539
11	Agriculture, forestry, fishing, and hunting	$1,495

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Assumptions

Economic Conditions in Canada

Canada's Weak Labour Productivity growth, a Cause for Concern

Canada is expected to see real GDP growth mimic 2023 growth of 1.1 per cent in 2024 despite the move by the Bank of Canada which began cutting rates mid-way through this year. The Bank of Canada has already carried out four rate cuts, cumulating 1.25 percentage points as of October this year. Canada's annual labour productivity (output produced per hour of work) growth has been abysmal at best, growing at 0.81 per cent per year between 1997-2023. This lackluster growth path has aided restraining economic growth in Canada. A more favourable borrowing environment going into 2025 should improve confidence for private investment, stimulate household consumption, and aid exports. GDP growth is expected to increase to 1.9 per cent in 2025 and average 2.0 per cent per year over 2026-2029, slightly below the pre-pandemic annual decade average of 2.3 per cent per year. To improve real GDP growth, productivity needs a proverbial "shot in the arm". The aging population and declining fertility rates are unable to sustain economic growth, and relying on international net-migration is a short-term fix. Despite the significant growth in population driven by international net migration over the last two years, which added over 1.85 million more persons (or 929,000 persons per year) to Canada to address labour supply/skill shortages, real GDP growth had averaged 2.4 per cent per year. Approximately, 96 per cent of the total population increase was international net-migration. In 2024, it is estimated that the Canadian population rose by more than 1.2 million persons.

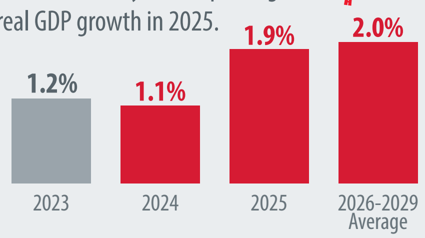
Labour Market Growth Returning to Sustainability

Employment growth pre-pandemic averaged 1.3 per cent per year over a decade, outpacing labour force growth of 1.0 per cent per year over the same period. During this period, the unemployment rate averaged 6.9 per cent per year as both employment absorption and population growth struggled, with population growth averaging 1.1 per cent within the same decade. Post-pandemic, employment growth absorption grew almost three times the decade average at 3.8 per cent between 2021-2023. Employment growth is expected to slow to 1.8 per cent in 2024 and average 1.1 per cent per year over the five-year forecast horizon. On the supply side of labour, labour force growth is expected to remain as strong as 2023 above 2.6 per cent, due to the significant increase in population (1.2 mil or 2.9 per cent growth), driven by net-international migration in 2024. However, despite the above historical absorption of labour in 2024, the higher pace of labour force growth is expected to keep unemployment rate elevated from 5.4 per cent in 2023 to 6.3 per cent in 2024. The unemployment rate is expected to fall in 2025 as population growth subsides, correspondingly slowing labour force growth. Also, aiding the lower unemployment rate is the expected backdrop of a lower borrowing cost environment in 2025, improved consumer spending, and private investment to drive real GDP growth.

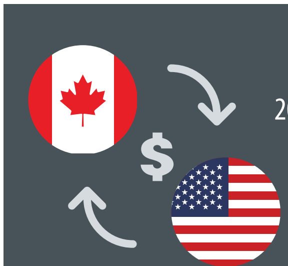
The oversupply of labour is putting downward pressure on wage growth as more persons per job were available for employment and subsequently nominal wage growth is expected to slow to 4.2 per cent, above the decade pre-pandemic average of 2.4 per cent per year. Nominal wage growth is expected to slow further to 3.7 per cent in 2025 as the consumer price index (CPI) inflation continues its downward trajectory towards the Bank of Canada's target of 2.0 per cent. Nominal wage growth is expected to average 3.6 per cent over the remaining forecast horizon. Though nominal wage growth is expected to be elevated in the short-term, downward wage growth pressures will persist as the Bank of Canada successfully keeps inflation stable within the 2.0 per cent range.

Canada's Real GDP Growth

Canada's real GDP is expected to remain relatively stable in 2024, due to sustained elevated borrowing cost but negated by relaxed monetary stance in 2024H2 and beyond, improving real GDP growth in 2025.



Canada/U.S. Exchange Rate



US$ for 1 C$

2026-2029 Average	0.77
2025	0.74
2024	0.73
2023	0.74

The loonie is expected to remain weak in 2024 as the Bank of Canada monetary policy stance relaxes relative to U.S. and continues into 2025.

Prime Business Loan Rate

The **prime business loan rate is expected to decrease in 2024 to 6.4 per cent** on the current backdrop of 1.25 percentage point decrease in the policy rate so far. The **lower prime rate will aid economic growth**.

2023	2024	2025	2026-2029 Average
6.9%	6.4%	5.9%	5.2%

The United States Economy

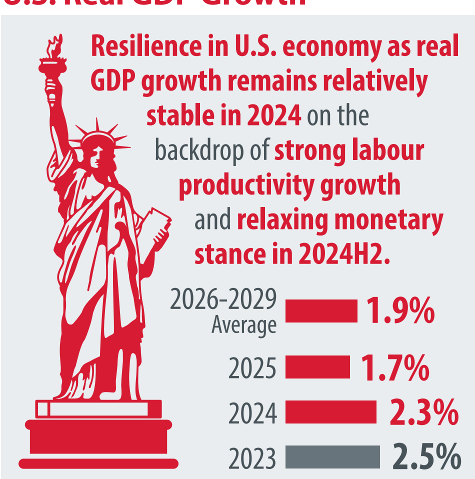
United States Higher Productivity Growth Mitigating the Effects of Higher Borrowing Cost

U.S. real GDP increased by an annual rate of 1.4 per cent in Q1 2024 and is estimated to have risen by 3.0 per cent in Q2. The real GDP growth is expected to increase by 2.3 per cent in 2024 despite the elevated cost of borrowing caused by the Federal Reserve Bank to combat high inflation. Infrastructure spending of over US$1.8 trillion in grants, loans, incentives, tax credits and other financial assistance are expected to make its way through the economy in 2024. However, sustained elevated borrowing costs will weigh on domestic demand slowing productivity growth. Labour productivity (defined as the output per hour worked) experienced increasing consecutive growth between Q2 2023 and Q1 2024, reaching 2.8 per cent. Real GDP growth is expected to moderate in 2025 to 1.7 per cent as the pace of household consumption adjusts to elevated borrowing costs and increasing pressures on private investment. Real GDP growth is expected to average 1.9 per cent over the rest of the forecast horizon, 2026-2029, though below the pre-pandemic decade average of 2.4 per cent per year. However, the expected lower borrowing environment, as inflation growth is muffled to target, will drive the pace of consumer spending, private investment, exports, and government spending upwards and correspondingly improve real GDP growth over the rest of the forecast horizon. The three key pieces of legislation by Biden's government, the Inflation Reduction Act (IRA), The Infrastructure and Investment Jobs Act (IIJA), and the Chips and Science Act (CSA) should translate to about US$3.5 trillion in funding over the next decade and aid real GDP growth.

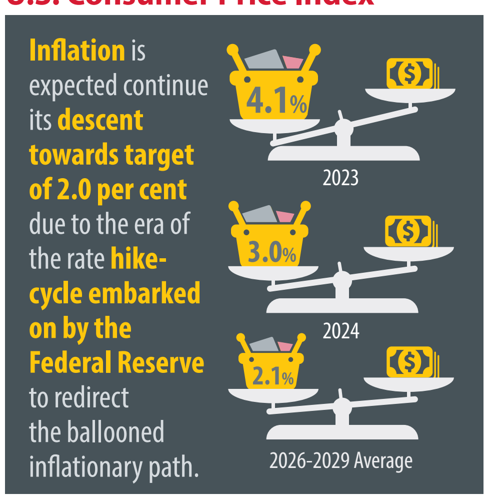
The Fed's Stance

The Federal Reserve Bank (Fed) which began its rate cycle hike in March of 2022 to combat high inflation seems to be on the right trajectory towards their target of 2.0 per cent. After halting the interest rate hike cycle in June of this year, there is some indication that the Fed could reverse course in the last quarter of this year. Cracks in the labour market are also beginning to emerge as the annual unemployment rate is expected to rise from 3.6 per cent in 2023, to 4.0 per cent in 2024. The Fed is likewise tasked like the Bank of Canada with keeping inflation within the 2.0 per cent range to maintain maximum employment. The consumer price index (CPI) inflation annual growth fell from 2.9 per cent in July to 2.5 per cent in August and is expected to average about 2.5 per cent in Q3 2024. Inflation is expected to continue a steady descent from 4.1 per cent registered in 2023 to 2.9 per cent in 2024, and drop to 2.0 per cent by 2025. The tight monetary stance is appearing to pay off. However, the recent 100 per cent tariffs on electric vehicles from China, the second largest economy in the world, including tariffs on Aluminum and steel to name a few, are likely to solicit reciprocal trade tariffs from China, which do not bode well for global price stability. This could threaten all the efforts that have been so far successful in tapering inflation growth.

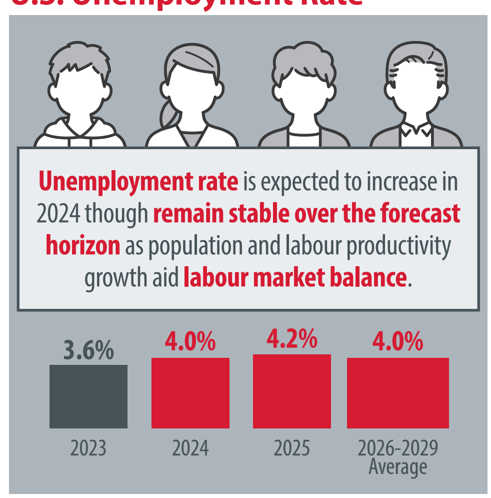
U.S. Real GDP Growth



U.S. Consumer Price Index



U.S. Unemployment Rate



Assumptions

The World Economy

A Threat to Global Growth, Productivity Snag

The global economy is expected to grow at 3.2 per cent this year, below real GDP growth of 3.3 per cent in 2023 and the pre-pandemic decade average growth of 3.7 per cent per year. Most economies whose central banks engaged in tightening monetary policy by raising lending rates to combat rampant inflation in 2022, are beginning to reap the fruits. It has come at the cost of slower growth in private investments and household consumption as a higher borrowing cost environment is a disincentive to growth. Though the path of downward inflation resistance has been uneven across goods and services and across regions, real GDP is expected to rise by 3.3 per cent by 2025 on the back of a lower borrowing cost environment.

Despite a backdrop of higher borrowing rates, the advanced economies have exhibited economic resiliency in 2024. Real GDP growth is expected to mimic 2023 growth of 1.7 per cent. The emerging market and developing economies are expected to see real GDP growth slow to 4.3 per cent in 2024 from 4.4 per cent experienced in 2023, and below the pre-pandemic decade average growth of 5.0 per cent per year. The two largest economies, the United States and China, are members of one of the two sub-categories of the global economy; U.S. in the developed category, while China is considered an emerging economy. The economic and financial resiliency of the U.S. economy in 2024 is reflected in the overall growth of the advanced economies. China is poised for an economic slowdown in 2024 to 4.6 per cent from 5.2 per cent in 2023, partially due to sustained real estate woes, as housing prices continue a downward spiral with a significant proportion of the population leveraged in the housing market.

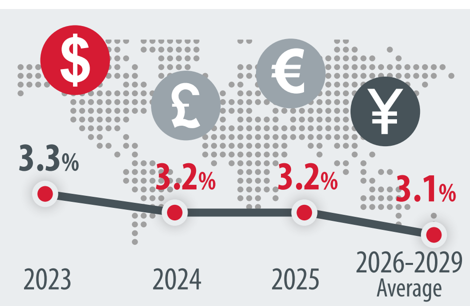
The world continues to experience slow to no growth in productivity (producing more with less), which is a fundamental ingredient to economic growth. An aging labour force and lower fertility rates in various regions further adds to the challenges of global economic growth. A short-term measure to these labour supply side challenges has been increasing international migration. But the fundamental issue remains: how do we foster growth in productivity, which has been stagnant for almost two decades? Could "AI" be the solution? While it is certainly one of a handful of potential solutions to augmenting economic growth, it is also critical to address the misallocation of resources and craft policies with a direct focus to shape markets. The short-term forecast does not incorporate these upside risks; however, a long-term sustainable solution is needed to shore up economic growth and stop the hemorrhaging of productivity.

Slower Landing, But on Target

The coordinated contractionary monetary policies by major central banks, along with improvements in global supply chain bottlenecks, have been effective in easing global inflation; it is expected to slow in 2024 to 5.9 per cent and edge closer to the pre-pandemic decade average growth of 3.5 per cent per year between 2026-2029. The balancing of monetary policy stance to tackle inflation and soften contraction in real GDP growth present uneven challenges due to varying regional labour market strengths. The persistence of inflation pressures in the services sector could add to varying timelines of wrapping up monetary stances so far employed to stave down inflation.

Advanced economies are expected to see inflation fall to 2.7 per cent in 2024 and 2.1 per cent by 2025, as some central banks are now more worried about potential economic recessions evolving and have begun winding back rates. The challenges for the developing and emerging economies are more demanding as they require a fine balance between fiscal and monetary policies to achieve economic resiliency given that some institutions are still maturing. Inflation in emerging economies is expected to decrease to 8.2 per cent in 2024 and subsequently fall to 6.0 per cent by 2025, still above the pre-pandemic decade average growth of 5.2 per cent per year. However, inflation is expected to decrease and average 4.4 per cent between 206-2029, as monetary policy stances begin to stabilize.

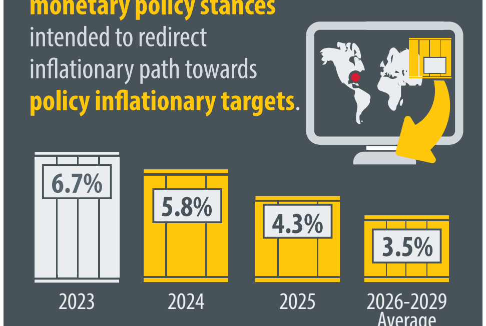
World Real GDP Growth



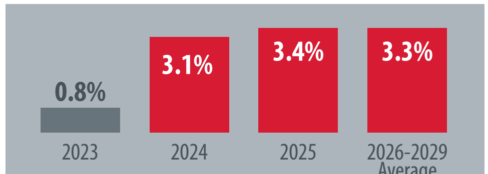
World real GDP growth continues to exhibit resiliency as tightened monetary stances rein in inflation, growing at **a stable pace**, but **lower than the 10-year GDP growth average of 3.7 per cent** prior to the pandemic in 2020.

World Consumer Price Inflation

Inflation is expected to continue its downward trajectory reaching 5.8 per cent in 2024 and 4.3 per cent in 2025 due to **earlier tightened monetary policy stances** intended to redirect inflationary path towards **policy inflationary targets**.



World Trade Volume Growth



Trade is expected to **increase** to 3.1 per cent in 2024 and 3.4 per cent in 2025 on the backdrop of **relaxed monetary policies in 2024H2** and going forward. The 10-year trade average prior to the pandemic in 2020 was 4.6 per cent.

Reshoring, A Threat to Global Growth

Trade, which is a measure of the economic interaction of imports and exports between regions, is expected to see an increase in trade growth of 3.1 per cent in 2024 up from 0.8 per cent experienced in 2023. The sharp rise in borrowing rates aimed to combat high prices across the globe are reflected in the pull back on trade growth seen in 2023, however as economies begin to stabilize and inflation contagion is contained, growth in 2024 has improved. With inflation and borrowing costs expected to be lower in 2025, global trade is expected to improve to 3.4 per cent and average 3.3 per cent over 2026-2029. Global trade growth will remain below the pre-pandemic decade average of 4.6 per cent per year and the lack of containment of further geopolitical tensions, wars, regional effective climate mitigating and adaptation policies, could keep trade growth from attaining pre-pandemic levels.

The impact of the 2020 pandemic on the production supply chain, climate change disruptions across the globe, geopolitical instability including wars and perceived unfair trade practices has instigated some countries like the United States and a few others to focus on bringing back their manufacturing and tightening their supply chain. This flies against the economics of David Ricardo[3] on the comparative advantage of nations in 1817, which shores up global trade benefits for all.

Trade wars are already in motion as the United States has levied tariffs on China under section 301 of the Trade Act of 1974, on $18 billion of imports. The investing in America agenda under President Biden using the Infrastructure Law, Chips and Science Act, Inflation Reduction Act are driving regionalization of new manufacturing and supply chains including critical inputs required to build semiconductors, EVs, clean energy infrastructure, healthcare and improve national security. The European Union (EU) and Canada have also levied tariffs on EVs and on aluminum and steel. The United States and Canada have levied 100 per cent tariffs on EVs while the EU has levied 36.3 per cent tariffs. China is, likewise, poised to retaliate in some fashion. The U.S. is currently looking to replace the 100 per cent tariff with an outright ban on EVs, including automobile hardware and software from China or Russia, according to the U.S. Commerce Department on September 23, 2024, citing national security concerns. The proposed ban will also affect Chinese EVs made elsewhere and intended for the U.S market.

The impact of tariffs or outright bans on trading could translate to further upward pressures on global inflation to say the least, and aide in prolonging the restrictive monetary stance by some Central Banks in the face of elevated regional inflation.

In 2024, India is poised to see energy demand overtake China for the first time, signaling India's quest and drive to be the production hub of the world, albeit at the backdrop of weaker economic growth in China. The Purchasing Manager's Index (PMI), derived from monthly surveys of private sector companies' readings, in 2024, has been well above the neutral mark of 50 which divides the economy between boom or bust for India. India's macroeconomic expansion is supported by manufacturing activity driven by domestic and global demand (exports) which has been reflected in a PMI of above 60.0 points or more over the last seven months. It is expected to see real GDP growth of 6.8 per cent in 2024 and average 6.5 per cent per year over the forecast horizon, the fastest forecast growth on record for a large-size economy.

[3] Among the founding father's of economic development theory. Ricardo in 1817, introduced the theory of comparative advantage, which demonstrated that nations engaged in trade become all better off.

Forecast Tables

Glossary

Calgary Economic Region Map

Forecast Tables

Table 1 - Selected Economic Indicators

Rest of the World, United States, Canada, Alberta, Calgary Economic Region (CER) & Calgary Census Metropolitan Area (CMA)

FORECAST COMPLETED: September 2024						FORECAST					
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
ASSUMPTIONS											
Global Economy											
Real Gross Domestic Product Growth (%)†	2.8	-2.7	6.5	3.5	3.3	3.2	3.2	3.1	3.1	3.1	3.1
The United States											
Real Gross Domestic Product Growth (%)	2.3	-2.8	5.9	1.9	2.5	2.3	1.7	2.0	2.0	1.9	1.8
Canada											
Real Gross Domestic Product Growth (%)	2.0	-5.1	5.0	3.6	1.2	1.1	1.9	2.2	2.1	1.8	1.8
Prime Business Loan Rate (%)	4.0	2.7	2.4	4.2	6.9	6.4	5.9	5.3	5.3	5.2	5.1
Exchange Rate (US$ for 1C$)	0.75	0.75	0.80	0.77	0.75	0.73	0.73	0.77	0.76	0.75	0.75
Alberta											
Real Gross Domestic Product Growth (%)	0.1	-7.8	4.7	5.3	1.5	1.8	2.7	2.2	1.9	1.9	1.8
Total Employment Growth (%)	1.2	-7.1	5.4	5.2	3.6	2.9	2.3	2.1	2.0	1.9	1.8
Unemployment Rate (%)	6.8	11.3	8.6	5.8	5.9	7.0	7.0	6.7	6.4	6.1	5.9
Housing Starts ('000 Units)††	27.3	24.0	31.9	36.5	36.0	43.6	47.3	46.3	43.9	41.0	39.3
Inflation Rate - CPI (%)	1.8	1.1	3.2	6.4	3.3	2.9	1.6	1.7	1.8	1.8	1.9
Crude Oil Price - WTI (US$/bbl)*	57.0	39.2	68.1	94.9	77.6	79.2	77.2	77.4	77.2	75.8	79.2
Western Canadian Select - WCS (US$/bbl)*	43.4	27.6	54.4	74.9	59.0	61.8	61.5	58.6	59.3	60.4	61.6
Alberta Natural Gas Price - AECO/NIT ($/GJ)	1.6	2.1	3.5	5.1	2.5	2.1	3.1	3.7	3.9	3.9	4.0
Industrial Product Price Index (%)	-0.1	-0.4	13.9	12.8	-1.8	0.8	1.4	1.8	1.8	1.9	1.8
Raw Materials Price Index (%)	-2.5	-8.2	32.4	23.7	-8.1	0.8	0.4	1.2	1.7	1.8	1.7
Alberta Average Wage Rate Increase for All Industries (%)**	0.8	-0.3	1.0	5.4	3.5	2.4	2.1	2.2	2.1	2.2	2.4
FORECAST											
Calgary Economic Region (CER)											
Real Gross Domestic Product Growth (%)✧	2.5	-6.7	3.2	5.1	0.7	2.3	2.6	2.8	2.6	2.3	2.3
Total Employment ('000 people)	891.1	835.6	870.1	933.9	957.7	995.3	1,023.2	1,045.7	1,069.7	1,092.2	1,114.0
Total Employment Growth (%)	3.3	-6.2	4.1	7.3	2.5	3.9	2.8	2.2	2.3	2.1	2.0
Unemployment Rate (%)	7.1	11.6	9.0	6.0	6.0	7.0	6.9	6.6	6.4	6.4	6.4
Calgary Census Metropolitan Area (CMA)											
Housing Starts ('000 units) ✧✧	11.9	9.2	15.0	17.3	19.6	21.3	21.8	21.1	19.3	17.5	16.5
Inflation Rate - CPI (%)	1.4	1.1	3.2	7.2	3.8	3.2	1.7	1.7	1.8	1.9	1.9
Non-Residential Building Construction Inflation (%)	2.1	0.5	4.0	9.0	4.7	3.2	2.8	1.7	0.6	1.5	3.4

Numbers may not add up due to rounding.

Sources for historical data: † International Monetary Fund (IMF) †† Statistics Canada * Bloomberg
** Alberta, Wages & Salaries Per Employee from Conference Board of Canada ✧ Corporate Economics ✧✧ Canada Mortgage and Housing Corporation (CMHC)

Table 2 - Selected Real Estate Indicators for City of Calgary

City of Calgary

FORECAST COMPLETED: June 2024						FORECAST					
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
DEMOGRAPHY											
Total Population ('000 people)	1,285.7	1,307.0	1,321.6	1,347.8	1,422.8	1,491.9	1,523.2	1,544.5	1,566.2	1,588.1	1,608.7
Total Population Growth (%)	1.4	1.7	1.1	2.0	5.6	4.9	2.1	1.4	1.4	1.4	1.3
Net Migration ('000 people)	9.6	12.3	6.1	19.1	67.3	61.0	23.6	13.8	14.6	15.4	14.5
Household Formation ('000 units)	6.3	7.7	5.6	10.1	28.7	26.5	12.1	8.3	8.5	8.6	8.1

FORECAST COMPLETED: September 2024						FORECAST					
	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
REAL ESTATE											
Residential Market											
Housing Starts ('000 units)*	10.6	7.9	12.7	14.8	16.7	17.6	18.1	17.5	16.0	14.5	13.7
Average Residential MLS Sale Price Growth (%)**	-4.2	-0.1	7.6	4.9	4.3	11.0	2.5	3.3	2.1	1.8	2.1
Benchmark House Price Growth (%)**	-3.8	-0.9	12.8	12.4	5.2	9.7	4.0	2.6	1.5	1.2	1.5
Total Building Permits ($billions)	5.0	3.4	5.6	5.7	5.9	8.6	7.1	6.2	6.2	6.1	6.0

Numbers may not add up due to rounding.

Sources for historical data: * Canada Mortgage and Housing Corporation (CMHC) ** Calgary Real Estate Board

Table 3 - Selected Commodity Price Inflation

City of Calgary

FORECAST COMPLETED: September 2024						FORECAST					
Unit: per cent	2019	2020	2021	2022	2023	2024	2025	2026	2027	2028	2029
CONSTRUCTION COMMODITIES											
Iron and Steel Products	4.3	-0.9	31.7	18.0	-2.6	-2.4	4.2	-2.4	2.3	3.6	2.1
Aluminum Products	-2.6	-6.2	29.6	26.3	-6.3	0.3	6.7	3.6	5.7	4.6	3.3
Wood	-3.0	24.3	52.7	-6.4	-29.4	1.9	2.0	1.8	0.3	0.5	1.0
Asphalt*	6.3	-9.5	4.5	66.2	-11.6	10.3	5.1	5.7	0.6	1.7	4.1
OPERATIONAL COMMODITIES											
Rubber	6.7	0.5	15.2	-7.2	-8.1	8.7	-0.4	2.1	-2.2	1.4	9.7
Diesel Oil	-7.7	-15.4	25.7	42.0	-13.6	6.9	3.1	2.2	0.0	2.0	6.1
Vehicle Parts	2.0	1.1	2.3	7.0	2.7	3.8	3.8	1.9	1.7	1.5	2.0

Numbers may not add up due to rounding.

* Based on Ontario Ministry of Transportation Asphalt Price Index

Table 4 - City of Calgary Population Projection

City of Calgary *(thousands of people)*

FORECAST COMPLETED: June 2024		Estimate *(no Civic Census)*				FORECAST					
	2019	2020*	2021*	2022*	2023*	2024	2025	2026	2027	2028	2029
Total Population *(as of April)*	1,285.7	1,307.0	1,321.6	1,347.8	1,422.8	1,491.9	1,523.2	1,544.5	1,566.2	1,588.1	1,608.7
Total Population Growth Rate (%) *(April-March)*	1.4	1.7	1.1	2.0	5.6	4.9	2.1	1.4	1.4	1.4	1.3
Total Net Migration *(April-March)*	9.6	12.3	6.1	19.1	67.3	61.0	23.6	13.8	14.6	15.4	14.5
Total Births *(April-March)*	15.3	15.6	15.8	15.2	15.6	16.4	16.2	16.3	16.1	16.0	15.9
Total Deaths *(April-March)*	6.5	6.6	7.4	8.0	7.8	8.3	8.5	8.8	9.1	9.4	9.8
Total Natural Increase *(April-March)*	8.8	9.0	8.4	7.2	7.7	8.1	7.8	7.5	7.0	6.6	6.1
Total Households *(as of April)*	489.1	496.7	502.4	512.5	541.2	567.7	579.8	588.2	596.6	605.2	613.3
Total Household Formation *(April-March)*	6.3	7.7	5.6	10.1	28.7	26.5	12.1	8.3	8.5	8.6	8.1
Population by Cohort	2019	2020*	2021*	2022*	2023*	2024	2025	2026	2027	2028	2029
0-4	79.7	79.6	79.0	79.0	80.9	82.1	83.4	83.0	83.8	84.4	83.9
5-9	80.0	79.3	81.5	82.1	84.8	87.9	88.6	88.6	87.9	87.7	87.6
10-14	74.6	77.0	77.8	79.9	84.3	88.0	90.2	91.2	91.7	91.7	92.3
15-19	70.9	70.8	72.6	74.9	81.4	85.9	86.9	88.9	90.3	92.1	93.7
20-24	78.2	78.9	79.7	80.7	90.6	99.4	95.4	94.4	94.8	94.9	94.8
25-29	98.1	97.4	97.3	97.1	105.7	114.7	110.1	110.1	109.4	109.2	109.2
30-34	113.0	113.8	114.3	114.7	123.3	129.4	126.3	125.3	124.7	123.0	122.5
35-39	110.8	115.8	114.8	117.8	124.9	132.2	134.4	134.8	135.2	136.3	135.3
40-44	98.2	101.8	102.8	106.2	113.1	120.4	125.3	129.2	132.3	134.5	136.9
45-49	91.3	93.2	93.9	95.8	99.1	101.9	107.5	111.1	115.0	119.1	123.3
50-54	83.9	84.0	86.5	86.8	87.1	89.2	94.4	96.2	98.5	101.4	103.6
55-59	83.2	83.1	83.9	84.4	84.2	83.5	86.6	87.0	87.7	88.2	90.6
60-64	72.1	73.9	74.9	77.0	79.5	81.3	83.9	84.2	84.7	84.9	84.5
65-69	52.5	55.2	56.4	60.2	64.1	68.1	73.0	75.9	77.8	79.9	81.4
70-74	37.8	40.2	41.2	43.4	47.3	51.6	54.7	57.1	60.5	63.5	66.5
75-79	24.9	25.8	26.9	28.8	31.6	33.5	37.2	40.1	42.2	45.0	48.2
80-84	17.6	17.9	18.5	19.4	20.3	21.5	22.9	24.2	25.8	27.7	28.8
85-89	11.8	12.0	12.3	12.3	12.5	13.0	13.9	14.0	14.7	15.1	15.9
90-99	6.8	7.1	7.1	7.2	7.5	7.8	8.3	8.7	8.9	9.1	9.4
100+	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	**1,285.7**	**1,307.0**	**1,321.6**	**1,347.8**	**1,422.8**	**1,491.9**	**1,523.2**	**1,544.5**	**1,566.2**	**1,588.1**	**1,608.7**
Youth (12-17 inclusive)	85.1	86.7	89.1	91.5	98.1	103.9	106.3	107.8	109.6	111.3	112.1
Primary School Age (6-17 inclusive)	180.7	182.9	186.2	190.5	201.1	209.9	213.5	215.4	217.6	218.4	218.6
Working Age (15-64 inclusive)	899.7	912.7	920.6	935.3	989.1	1,038.0	1,050.8	1,061.4	1,072.5	1,083.8	1,094.4
Seniors 65+	151.6	158.4	162.7	171.6	183.7	195.9	210.2	220.3	230.2	240.5	250.5
Super Seniors 85+	18.9	19.3	19.8	19.8	20.4	21.2	22.5	23.0	23.9	24.5	25.6
Female Super Seniors 85+	12.0	12.3	12.5	12.6	12.8	13.3	14.0	14.3	14.9	15.1	15.8
Average Age	**37.5**	**37.7**	**37.8**	**38.0**	**37.8**	**37.8**	**38.3**	**38.6**	**38.8**	**39.1**	**39.4**

Numbers may not add up due to rounding.

Forecast Tables

Table 5 - Calgary Census Metropolitan Area (CMA) Population Projection

Calgary Metropolitan Area (CMA) *(thousands of people)*

FORECAST COMPLETED: June 2024						FORECAST					
	2019	2020*	2021*	2022*	2023*	2024	2025	2026	2027	2028	2029
Total Population *(as of July)*	1,503.3	1,528.3	1,540.2	1,586.7	1,682.5	1,770.9	1,822.8	1,866.3	1,907.5	1,947.8	1,989.1
Total Population Growth Rate (%) *(July-June)*	1.9	1.7	0.8	3.0	6.0	5.3	2.9	2.4	2.2	2.1	2.1
Total Net Migration *(July-June)*	14.7	20.9	19.3	7.7	42.2	45.1	31.8	25.5	22.7	23.2	23.9
Net Migration 18-24 *(July-June)*	17.5	14.4	6.9	30.0	60.2	59.8	29.0	26.4	27.8	27.7	27.8
Net Migration 28-40 *(July-June)*	2.6	3.9	-0.4	8.5	27.9	19.5	12.9	7.2	3.6	3.1	4.1
Total Births *(July-June)*	17.3	17.0	16.7	16.5	16.7	18.6	19.8	20.2	20.5	20.8	21.1
Total Deaths *(July-June)*	7.3	7.8	8.5	8.6	9.0	9.4	9.9	10.4	10.8	11.2	11.7
Total Natural Increase *(July-June)*	10.0	9.2	8.2	7.9	7.7	9.1	9.8	9.9	9.8	9.6	9.4

Population by Cohort	2019	2020*	2021*	2022*	2023*	2024	2025	2026	2027	2028	2029
0-4	91.4	90.7	88.2	87.9	89.0	90.8	92.3	94.8	98.1	102.1	104.7
5-9	93.9	94.4	95.1	97.5	101.6	104.7	104.6	103.2	101.6	99.7	99.8
10-14	90.9	93.9	95.4	98.0	101.8	105.2	107.1	109.4	111.5	112.8	113.5
15-19	84.9	86.4	87.0	91.6	97.6	105.7	109.2	111.8	113.7	114.9	116.1
20-24	93.8	95.1	94.4	97.7	105.6	116.9	121.2	122.7	124.2	126.0	128.3
25-29	111.3	109.0	106.7	110.3	123.3	136.2	142.2	145.1	146.5	147.9	149.3
30-34	127.7	128.5	126.2	128.7	140.6	149.3	152.0	155.2	159.0	162.4	165.8
35-39	128.7	131.4	132.4	135.8	145.3	153.3	158.3	161.7	164.2	167.0	169.1
40-44	114.1	117.0	120.0	125.3	135.4	144.5	151.0	155.8	159.3	162.2	165.6
45-49	106.2	107.6	107.8	109.9	115.2	120.0	124.9	130.8	137.3	144.0	150.2
50-54	96.0	96.6	98.9	101.7	105.5	106.7	108.3	109.5	111.8	115.1	119.7
55-59	96.9	97.2	95.8	94.9	95.7	95.2	95.7	98.2	101.1	103.2	104.8
60-64	86.0	88.8	90.4	92.2	95.1	96.3	96.1	95.1	94.0	93.5	93.4
65-69	64.1	67.8	71.9	76.8	82.1	86.4	89.4	91.5	92.9	94.0	94.9
70-74	46.6	50.3	53.1	55.5	59.2	63.9	68.1	72.7	77.1	80.9	84.1
75-79	29.4	31.1	33.1	36.9	41.1	44.9	48.7	51.9	54.0	56.6	60.1
80-84	20.1	20.6	21.4	22.5	24.2	26.1	28.0	29.9	33.2	36.2	39.0
85-89	13.3	13.6	13.8	14.2	14.6	15.1	15.7	16.4	17.2	18.3	19.4
90-99	7.7	8.1	8.4	8.9	9.3	9.5	9.8	10.1	10.4	10.5	10.8
100+	0.2	0.2	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4
Total	**1,503.3**	**1,528.3**	**1,540.2**	**1,586.7**	**1,682.5**	**1,770.9**	**1,822.8**	**1,866.3**	**1,907.5**	**1,947.8**	**1,989.1**

Average Age	**38.1**	**37.7**	**38.0**	**38.2**	**38.2**	**38.1**	**38.3**	**38.4**	**38.6**	**38.8**	**39.0**

Numbers may not add up due to rounding.

Table 6 - Calgary Economic Region (CER) Population Projection

Calgary Economic Region (CER) *(thousands of people)*

FORECAST COMPLETED: June 2024						FORECAST					
	2019	2020*	2021*	2022*	2023*	2024	2025	2026	2027	2028	2029
Total Population *(as of July)*	1,614.8	1,640.6	1,652.9	1,700.1	1,797.6	1,888.0	1,941.3	1,986.1	2,028.2	2,069.5	2,111.6
Total Population Growth Rate (%) *(July-June)*	1.8	1.6	0.7	2.9	5.7	5.0	2.8	2.3	2.1	2.0	2.0
Total Net Migration *(July-June)*	20.7	18.7	6.6	39.4	89.9	81.5	43.6	35.2	32.7	32.0	33.1
Total Births *(July-June)*	18.3	17.9	17.6	17.4	17.5	19.3	20.6	21.0	21.3	21.6	21.9
Total Deaths *(July-June)*	8.0	8.6	9.3	9.6	9.9	10.4	10.9	11.4	11.9	12.4	12.9
Total Natural Increase *(July-June)*	10.2	9.4	8.3	7.8	7.6	9.0	9.7	9.6	9.5	9.2	9.0

Population by Cohort	2019	2020*	2021*	2022*	2023*	2024	2025	2026	2027	2028	2029
0-4	97.2	96.4	93.6	93.2	94.3	96.7	98.4	100.8	103.6	107.1	109.5
5-9	101.0	101.4	102.0	104.4	108.6	112.0	112.0	110.6	109.1	107.3	107.3
10-14	98.9	101.9	103.3	106.0	109.7	113.5	115.5	118.0	120.1	121.3	122.0
15-19	92.0	93.6	94.5	99.4	105.6	113.4	117.1	119.9	122.2	123.6	124.8
20-24	99.4	100.5	99.7	103.1	111.3	121.4	125.2	127.0	129.2	131.8	134.6
25-29	116.6	114.2	111.7	115.3	128.3	140.9	146.4	148.8	149.9	151.2	152.7
30-34	133.8	134.6	132.1	134.5	146.6	155.7	158.6	161.9	165.4	168.6	171.7
35-39	136.0	138.6	139.4	142.6	152.0	160.1	165.2	168.8	171.6	174.5	176.7
40-44	121.7	124.7	127.8	132.9	143.0	151.7	157.9	162.6	166.2	169.1	172.6
45-49	113.8	115.2	115.3	117.5	122.8	127.7	132.6	138.4	144.6	151.0	157.1
50-54	103.5	104.1	106.5	109.3	113.1	114.5	116.1	117.4	119.8	123.1	127.6
55-59	105.5	105.5	103.9	102.7	103.3	102.8	103.4	106.0	109.0	111.2	112.7
60-64	94.2	97.2	98.8	100.8	103.7	105.2	105.0	103.7	102.3	101.4	101.2
65-69	70.7	74.9	79.4	84.6	90.3	95.0	98.3	100.6	102.0	103.2	104.0
70-74	52.1	56.1	59.2	61.8	65.7	70.8	75.6	80.6	85.3	89.4	92.8
75-79	32.9	34.9	37.2	41.5	45.9	50.2	54.3	57.8	60.0	62.8	66.6
80-84	22.2	22.9	23.9	25.1	27.1	29.2	31.3	33.6	37.1	40.6	43.7
85-89	14.7	14.9	15.2	15.5	15.9	16.7	17.4	18.3	19.2	20.5	21.8
90-99	8.4	9.2	9.1	9.6	10.1	10.4	10.7	11.0	11.3	11.5	11.8
100+	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.4	0.4	0.4	0.4
Total	**1,614.8**	**1,641.0**	**1,652.9**	**1,700.1**	**1,797.6**	**1,888.0**	**1,941.3**	**1,986.1**	**2,028.2**	**2,069.5**	**2,111.6**

Average Age	**38.3**	**38.0**	**38.3**	**38.4**	**38.5**	**38.4**	**38.5**	**38.7**	**38.9**	**39.1**	**39.3**

Numbers may not add up due to rounding.

Glossary

Advanced Economies
The International Monetary Fund recognizes 41 developed countries and territories as advanced economies: Andorra, Australia, Austria, Belgium, Canada, Croatia, Cyprus, Czech Republic, Denmark, Estonia, Finland, France, Germany, Greece, Hong Kong SAR, Iceland, Ireland, Israel, Italy, Japan, (Republic of) Korea, Latvia, Lithuania, Luxembourg, Macao SAR, Malta, Netherlands, New Zealand, Norway, Portugal, Puerto Rico, San Marino, Singapore, Slovak Republic, Slovenia, Spain, Sweden, Switzerland, Taiwan, United Kingdom and the United States.

AECO-C
Is the central natural gas spot market price for Alberta, measured in Canadian dollar per gigajoule. Joule is the international measure of energy. One gigajoule corresponds to one billion joules.

Apartment
Within the context ofCalgary's Civic Census, an apartment is a structure originally designed and built to contain at least three dwelling units on three or more levels. The dwelling units share outside entrances. Apartments include rental units and those that are owner-occupied. Within the Canada Mortgage and Housing Corporation (CMHC)'s Starts and Completions Survey, apartment units fall under the broader classification of "Apartment and other," which includes all dwellings not classified as Single-Detached, Semi-Detached, or Row (Townhouse) dwellings. This category covers various structure types, such as stacked townhouses, duplexes, triplexes, double duplexes, row duplexes, and secondary suites or similar configurations.

Bank of Canada
The Bank of Canada is the central bank of Canada tasked to provide monetary and fiscal stability to the economy.

Business Fixed Investment
Business fixed investment represents the spending by businesses to increase production capacity. It is traditionally decomposed into equipment (such as computers and machines), structures (such as plants, shopping malls, or warehouses), and intellectual property (such as software and research and development).

Calgary Economic Region (CER)
Is an Alberta economic region that covers the city of Calgary and its surrounding twenty cities, towns, villages, and Indian reserves including: Airdrie (City), Beiseker (Village), Black Diamond (Town), Carstairs (Town), Chestermere (City), Cochrane (Town), Cremona (Village), Crossfield (Town), Didsbury (Town), Eden Valley 216 (Indian reserve), Foothills No. 31 (Municipal district), High River (Town), Irricana (Town), Longview (Village), Mountain View County (Municipal district), Okotoks (Town), Olds (Town), Rocky View County (Municipal district) , Sundre (Town), Tsuu T'ina Nation 145 (Indian reserve), Turner Valley (Town).

Census Metropolitan Area (CMA)
An urban Census metropolitan area (CMA) is an area consisting of one or more neighbouring municipalities situated around a major urban core. A CMA must have a total population of at least 100,000 of which 50,000 or more live in the urban core. The Calgary CMA includes Airdrie (City), Beiseker (Village), Calgary (City), Chestermere (City), Cochrane (Town), Crossfield (Town), Irricana (Town), Rocky View County (Municipal district), and Tsuu T'ina Nation 145 (Indian reserve).

Commodities
Commodities are tangible goods that can be bought and sold in spot or futures markets. Commodities are goods that are usually produced and/or sold by many different companies. A commodity is uniform in quality between companies that produce/sell it in the sense that we cannot tell the difference between one firm's product and another. Examples of commodities include oil, electricity, metals, cement and agricultural products, such as wheat, corn, and rice.

Consumer Price Index (CPI)
The Consumer Price Index (CPI) is an indicator of the consumer prices encountered by consumers. It is obtained by calculating, on a monthly basis, the cost of a fixed "basket" of goods purchased by a typical consumer during a given month. The basket contains products from various categories, including shelter, food, entertainment, fuel and transportation. Since the contents of the basket remain constant in terms of quantity and quality, the changes in the index reflect price changes. The CPI is a widely used indicator of inflation (or deflation) and indicates the changing purchasing power of money in Canada.

Developing and Emerging Market Economies
According to IMF's classification, this group of countries (155) includes developing economies that are low- and middle-income countries, and emerging economies that are in transition from developing economies to developed countries. Some of the largest countries in the world like India, China, Brazil, and Indonesia are emerging economies.

Economic Region
An economic region (ER) is a grouping of complete census divisions (CDs) created as a standard geographic unit for analysis of regional economic activity.

Economy
The term economy refers to the institutional structures, rules and arrangements by which people and society choose to employ scarce productive resources that have alternative uses in order to produce various goods over time and to distribute them for consumption, now and in the future, among various people and groups in society. In a free market economy like Canada's the laws of supply and demand determine what, how and where goods and services should be produced, who should consume them and when. A "strong' or "healthy" economy is usually one that is growing at a good pace.

Employment Rate
The number of employed people expressed as a percentage of the working age population.

European Union
A political and economic union of 27 member states that are located primarily in Europe. The IMF expects the European Union to account for over 14 per cent of global GDP in 2024. Some of the largest economies that are EU member states include Germany, France, Italy, Spain, and the Netherlands.

Federal Funds (or "Fed Funds") Rate
Set by the Federal Open Market Committee of the U.S. Federal Reserve, the Fed Funds rate is the target interest rate at which commercial banks borrow and lend their excess reserves to each other overnight. Domestically, the Fed Funds rate is analogous to the Bank of Canada's overnight rate (also known as the "policy interest rate").

Fiscal Policy
Also called budgetary policy, the overall program for directing government spending and taxation for the purpose of keeping the actual Gross Domestic Product (GDP) close to the potential full employment GDP, but without overreaching that potential and causing inflation.

Federal Reserve
The Federal Reserve System is the central bank of the United States tasked to provide monetary and fiscal stability to the economy.

G7
The international Group of 7 (G7) consists of Canada, France, Germany, Italy, Japan, the United Kingdom, and the United States. The G7 comprises of the world's largest advanced economies and liberal democracies. With its members accounting for over half of global net wealth, the G7 is seen as highly influential in global affairs.

Gross Domestic Product (GDP)
GDP is a measure of the value of all goods and services produced by the economy. Unlike Gross National Product (GNP), GDP only includes the values of goods and services earned by a region or nation within its boundaries.

Hard Landing
Hard landing refers to a scenario in economics in which an economy experiences a steep decline in its economic activities after a growth period. A vital difference between soft landing and hard landing is that the former does not cause recession.

Henry Hub
Henry Hub is a natural gas pipeline in Louisiana that serves as the pricing and delivery location of natural gas futures on the New York Mercantile Exchange (NYMEX).

Housing Markets
Consists of two markets: new house and re-sale markets referred to as MLS® (Multiple Listing Service). Each is described by different parameters and followed closely by different statistical bodies: the Planning and Building Department with The City of Calgary and Statistics Canada for new houses, and The Canadian Real Estate Association for the re-sale market.

Housing Units
A general term that refers to single-family houses, townhouses, mobile homes and/or condominiums.

Housing Starts
A housing start is defined as the beginning of construction work on a building, usually when the concrete has been poured for the whole of the footing around the structure, or an equivalent stage where a basement will not be part of the structure.

IMF
The International Monetary Fund (IMF) is an organization created in 1945, governed by and accountable to the 190 countries that make up its near-global membership. The IMF's primary purpose is to ensure the stability of the international monetary system—the system of exchange rates and international payments that enables countries (and their citizens) to transact with each other.

Index
An economic tool that allows for data comparison over time. An index number is used to indicate change in magnitude (cost or price) as compared with the magnitude at some specified time.

Industrial Product Price Index (IPPI)
The Industrial Product Price Index (IPPI) measures price changes for major commodities sold by manufacturers. The prices collected are for goods sold at the factory gate. As a result, the prices covered by the IPPI refer not to what a purchaser pays, but to what the producer receives.

Inflation Rate
A measure of the percentage change in the Consumer Price Index for a specific period of time.

Labour Force
The working age population (aged 15+) who are actively involved in the labour market, which includes those employed and unemployed people. It does not include people who are at their working age but not working or looking for work (e.g., retirees or full-time students).

MLS®
The Multiple Listing Service, or MLS®, is a local or regional service that compiles available real estate for sale submitted by member brokers and agents, along with detailed information that brokers and agents can access online.

Monetary Policy
Refers to government measures undertaken to affect financial markets and credit conditions with the ultimate objective of influencing the overall behaviour of the economy. Monetary policy is usually the responsibility of the central banks, such as the Bank of Canada.

Non-Residential Construction Price Inflation
Non-residential construction price inflation measures the overall price escalation seen in the construction of non-residential buildings. This indicator includes the impact of input prices, labour costs, taxes, fluctuating profit margins and the effect of the overall economy on demand for local non-residential construction projects.

OPEC
The Organization of Petroleum Exporting Countries (OPEC) is an organization of 12 oil producing countries (Algeria, Congo, Equatorial Guinea, Gabon, Iran, Iraq, Kuwait, Libya, Nigeria, Saudi Arabia, the United Arab Emirates, and Venezuela) that seeks to actively manage oil production in its member countries by setting production targets. OPEC member countries typically produce 40 to 50 per cent of the world's crude oil, and Saudi Arabia is OPEC's largest producer. OPEC is described by most market observers as a cartel whose actions, particularly those by Saudi Arabia, serve as a major influence on global oil production and price.

OPEC+
OPEC+ was established in 2016 amid a global economic slowdown and strong production from U.S. shale producers to stabilize oil prices by jointly cutting production among its members. OPEC+ describes the 12 members of OPEC plus 10 oil exporting non-OPEC countries (Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan, and Sudan). Russia is the largest and most influential oil producing member of OPEC+ who is not a formal member of OPEC.

Overnight Rate
The overnight interest rate is the rate for overnight (between business days) lending among major banks in Canada. It is typically the lowest of all types of interest rates and influences other interest rates. The Bank of Canada sets the target for the overnight rate as one way to conduct monetary policy. Major banks can deposit money overnight with the Bank of Canada and receive an interest rate equal to the target rate (the "deposit rate") or borrow money from the Bank of Canada at a rate one-quarter of a percentage point higher (the "bank rate").

Quantitative Tightening
A contractionary monetary policy implemented by central banks in order to reduce liquidity or reduce money supply. This is usually done by the central bank reducing its assets on the balance sheets.

Raw Materials Price Index (RMPI)
The Raw Materials Price Index (RMPI) measures price changes for raw materials purchased for further processing by manufacturers. As a purchasers' price index, prices include all charges purchasers incur to bring a commodity to the establishment gate. They include transportation charges, net taxes paid, custom duties, as well as subsidies, if applicable.

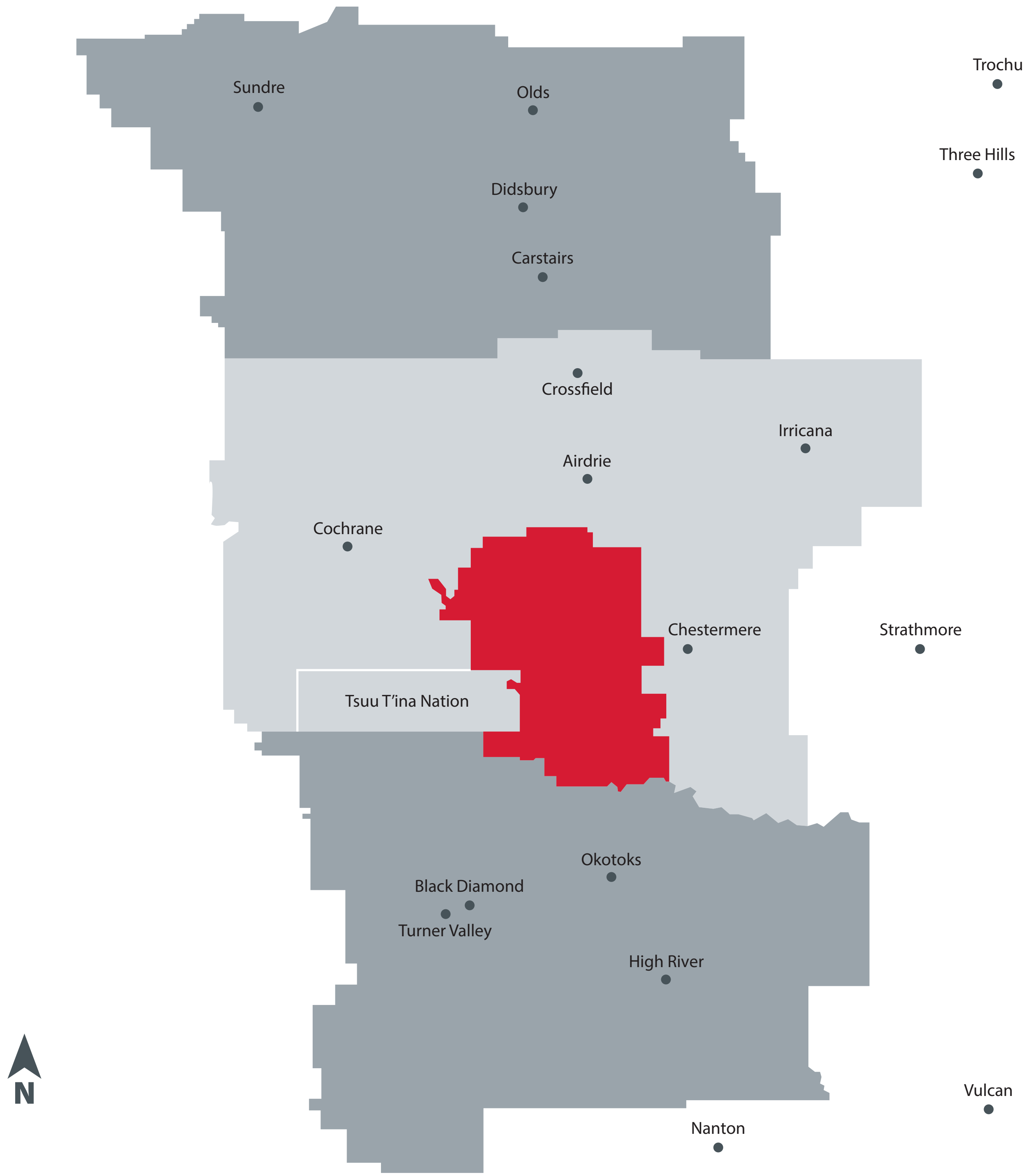
Soft Landing
A soft landing is the goal of a central bank when it implements contractionary monetary policies just enough to stop an economy from overheating and experiencing high inflation without causing a severe downturn. It is the process of an economy shifting from growth to slow growth to potentially zero growth as it approaches but avoids a recession.

Unemployment Rate
In Canada, the unemployment rate measures the number of unemployed people 15 years of age and over as a percentage of the total labour force (employed and unemployed people) 15 years of age and over.

WCS
Western Canadian Select (WCS) is the benchmark for emerging heavy, high TAN (acidic) crudes, one of many petroleum products from the Western Canadian Sedimentary Basin oil sands.

Working-Age Population
Describes people aged 15 to 64.

WTI
West Texas Intermediate (WTI) crude oil is the underlying commodity of the New York Mercantile Exchange's oil futures contracts. Light, sweet crude oil is commonly referred to as "oil" in the Western world.



Legend

- Calgary Economic Region (CER)
- Calgary Census Metropolitan Area (Calgary CMA)
- City of Calgary

Who We Are

Corporate Economics provides services in four areas: forecasting, information provision, policy analysis and consulting. We also monitor the current economic trends which allows us to develop unique insights on how external events are impacting the local economy and the Municipal government. We are experienced at researching different economic topics and have developed reliable methods of forecasting and analysis.

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Sources:
Bank of Canada, Calgary Real Estate Board (CREB), Canada Mortgage and Housing Corporation (CMHC), Canadian Real Estate Association (CREA), Conference Board of Canada, Federal Reserve Bank of the U.S., Government of Alberta, Government of Canada, International Monetary Fund (IMF), Organization of the Petroleum Exporting Countries (OPEC), Statistics Canada, Stokes Economics, The City of Calgary, U.S. Energy Information Administration (EIA), World Bank, and others.