Calgary

Fall 2019

Calgary and Region Economic Outlook

2019 – 2024

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Introduction

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

The City's fall economic outlook typically follows a spring release of the Alberta government budget. The fall 2019 economic outlook is different. The spring 2020 economic outlook will incorporate information from the provincial budget release later this fall. The mid-October release of the fall 2019 economic outlook is to support work leading up to decisions at the November 2019 Calgary municipal government budget adjustment discussion.

Purpose

The fall 2019 economic outlook has been created to support The City of Calgary in the financial and physical planning of the city. It provides a useful basis for decision making by outlining and clarifying the economic opportunities and risks the region faces. It features expectations for several economic indicators. The choice of indicators reflects factors considered likely to have a significant effect on the local economy over the forecast period.

Plan

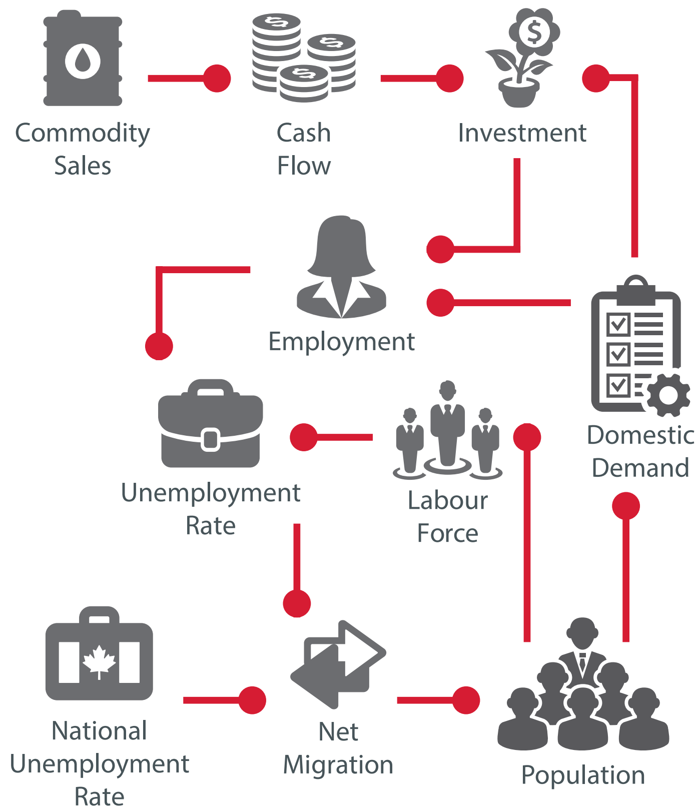
There are two areas or economies of interest. The first is the local (or City of Calgary) economy. The second is the regional economy (Calgary Economic Region or CER).

The CER is a small open economy that is 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.

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 2019 economic outlook uses assumptions about changes in the path for the 2019 to 2024 period as follows:

- A deceleration in world economic expansion;
- Crude oil price stability; and
- Economic growth and job creation in other Canadian provinces and territories that is slightly lower than the local and provincial levels for 2020 to 2024.

Economic Cycle



Payoff

The fall 2019 economic outlook provides a comprehensive set of estimates on the future conditions for Calgary's local and regional economies. Like the work of alternative forecast providers, it uses theoretical and empirical economic underpinnings. Unlike the work of alternative forecasters, it provides the full 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 rate of growth in the local economy?
- What are the drivers of the local economy?
- 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. Market and policy uncertainty remains a risk for an oil and gas industry that drives local and regional growth

Global crude oil consumption increased by 1.5 per cent or 1.4 million barrels per day in 2018. China (+680,000 barrels per day) and the U.S. (+500,000 barrels per day) led contributions to growth. Also in 2018, global oil production grew by 2.2 million barrels per day due to growth in U.S. production by an equivalent amount. It is the largest ever increase in production for a single country in a single year. Production expansion in Canada (+410,000 barrels per day) followed the U.S. along with Saudi Arabia (+390,000 barrels per day). Expanded production in Canada offset declines in Venezuela (-580,000 barrels per day) and Iran (-310,000 barrels per day). For the first seven months of 2019, Canadian crude production has increased by 2.7 per cent. It is a deceleration from 7.7 per cent in 2018.

The U.S. is the major importer of Canadian crude oil (96 per cent). Sustained U.S. production increases make the need for alternative markets for Alberta and Canadian crude essential. In the absence of alternative markets, Alberta producers would be compelled by market forces to reduce long-term production levels.

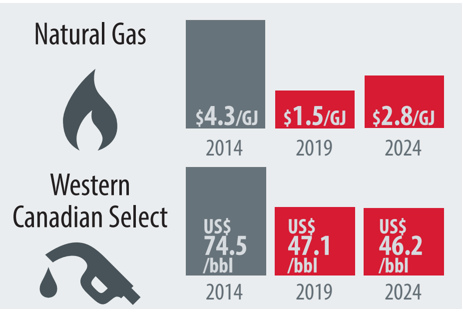
West Texas Intermediate (WTI) is forecast to average just under US$61.00 per barrel in 2019 and 2020. Crude transportation will remain a constraint keeping Western Canadian Select (WCS) at a substantial discount to WTI. Apart from the impact of the delay to the completion of Enbridge Line 3 until the second half of 2020, federal and provincial policies and energy strategies play a role. Delays to the approval of the Trans Mountain Expansion would sustain market access constraints. The government of Alberta plans to alleviate market access by divesting a $3.7-billion crude-by-rail contract, purchased by the previous provincial government in 2018, to the private sector.

As well, there is a pipeline constraint for natural gas. It affects access to external markets for natural gas produced in Alberta. Due to transportation costs, Alberta natural gas prices have traded at a discount to Henry Hub (the U.S. benchmark). The differential has widened in the past few years due to a surge in U.S. natural gas production and transportation bottleneck in the domestic NOVA Gas Transmission (NGTL) system. A production surge in the northern areas of British Columbia and Alberta beyond existing gas transmission capacity has played a role. A proposed expansion to the NGTL system is expected to alleviate these constraints but is not likely to be operational for at least a few more years.

Given the current environment, low natural gas prices are expected to continue in the near to midterm. The benchmark Alberta natural gas price at the Alberta Energy Company (AECO) hub is expected to average $1.49/GJ in 2019 and $1.82/GJ 2020, before gradually increasing to $2.82/GJ by 2024. The price differential between AECO-C and Henry Hub is expected to remain significant in the near term pending increased gas transmission capacity.

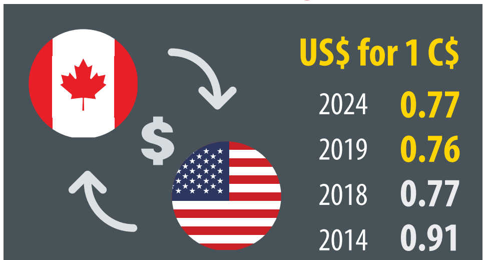
For the duration of the forecast period, the exchange rate should average about US$0.77 per CAD$. Exchange rate stability would support trade, as trading partners benefit from increased price certainty. Typically, a weak Canadian dollar combined with strong U.S. economy should boost economic activity in Canada. For Calgary, a weak dollar has translated into higher prices for imports, which puts upward pressure on consumer price inflation.

Energy Prices



The Western Canadian Select **oil price** is expected to be stable at just under US$50/barrel for the forecast period. Natural gas prices should rise gradually impacting capital investment.

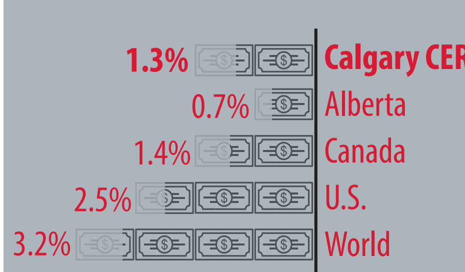
Canada/US Exchange Rate



The **loonie** is expected to remain stable as Canadian and U.S. monetary policy is expected to converge. As well, stable levels of trade actvity between the U.S. and Canada would support exchange rate stability.

GDP Growth Comparison

In 2019, the **real GDP growth rate** for the regional economy would be above the provincial economy but behind the national, U.S. and world economy.



2. Weak short-term investment outlook for housing and government investment would shrink parts of the municipal tax base

The 2019 level of housing and business fixed investment would be lower than in 2018. Both would have negative contributions to GDP growth. Housing and business fixed investment are expected to recover in 2020 and beyond. The base case forecast is a decline in spending and investment by the three orders of government in 2020.

Between 2006 and 2011, only four Canadian regions increased their additions to the stock of dwellings – Alberta, Manitoba, Nunavut, and Saskatchewan. For Alberta, additions to the stock of dwellings increased from 134,575 to 137,355 units. Calgary had a vital role to play in Alberta's past success. City of Calgary housing starts were 13,800 and 10,700 units in 2014 and 2015 respectively. More recently, activity in Calgary has slowed with a significant drop to 8,900 housing units started in 2018. For 2019, the 7,800 units of housing starts expected is comparable with 2016 when Calgary was in a recession. Subsequently, the forecast is for housing starts to recover to an average of about 8,500 units per year for the 2020-2024 period.

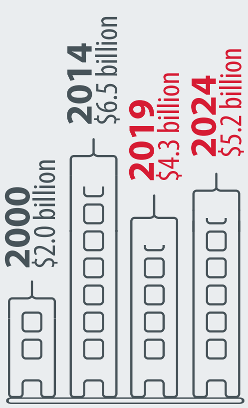
The decline in business fixed investment would be due, primarily, to a slowdown in downtown office investment. For an extended period, Q1 2013 to Q4 2017, the buildup of 4.0 million square feet of additional office space supply accompanied a sustained reduction in demand by 6.1 million square feet. The current demand and supply balance has discouraged future investment activity. Future investments in the downtown Calgary office market over the next decade would be limited to quality improvements or enhancements later in the forecast horizon.

The value of building permits is a useful aggregate measure of investment intentions over the coming year or two. In 2018, the value of proposed building investments in the city of Calgary was $4.6 billion. Two out of every three investment dollars in new buildings gets directed at residential properties. For 2019, the base case forecast is a decline to $4.3 billion. It is consistent with the expected deceleration in housing starts. Subsequently, investment intentions would improve with building permit values expected to increase to $4.6 billion in 2020. For 2020 to 2024, the forecast average is $4.9 billion per year.

The average house price would fall for the second straight year in 2019. A lot of excess housing inventory would lead to a drop in the average house price by 1.6 per cent. For the first half of 2019, the average house price had fallen to $446,246 from the 2018 average of $458,093. Higher-end house prices have fallen further. New additions are mostly lower-valued multi-family units. It means that the overall wealth of residential property owners would drop more than 1.6 per cent. As a result, the 2020 residential tax base that is calculated using July 2019 property values would be lower. Housing starts would decline in 2019 and remain smaller than pre-2017 values, which would reduce the accumulation of inventory. The base case is that house prices are expected to be flat in 2020 before appreciation resumes in 2021.

Financing costs for new investments are at the highest level in a decade. The most recent interest rate change was a hike in October 2018. In the short-term, the Bank of Canada is expected to shift away from interest rate increases; there were three last year. The primary driver is because international trade conditions have worsened. As a result, the outlook for global growth is much lower. The base case forecast is that the Bank of Canada would be patient and maintain the current level of the overnight rate for the next few years. Consequently, the prime lending rate should remain at 3.95 per cent for 2019.

Calgary Building Permits

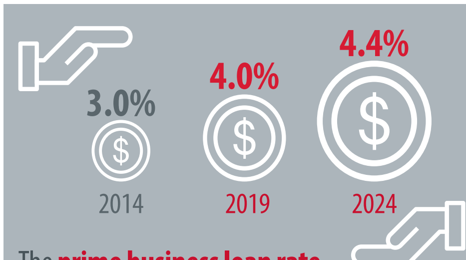


The forecast for **building permits** in 2019 is $4.3 billion. This estimate is significantly higher than $2.0 billion at the turn of the century but lower than the pre-recession high of $6.5 billion in 2014.

Calgary (CMA) Housing Starts

Housing starts in the Calgary Census Metropolitan Area (CMA) would be much lower than the heights of 17,100 in 2014 but well above the lows of 9,200 during the last recession in 2016.

Prime Business Loan Rate



The **prime business loan rate** increased aggressively in 2018. It is expected to remain stable in 2019 and 2020 before proceeding toward higher rates at the end of the forecast period.

3. Population growth would boost consumption and increase labour supply as a buffer from lower investment and government spending

The 2019 municipal census put Calgary's population at 1.286 million. The annual rate of population increase was 18,367 people or 1.4 per cent, which is a deceleration from 1.7 per cent last year. Consequently, the contribution of personal consumption to local GDP growth is expected to decelerate in 2019. Nevertheless, personal consumption expenditure is expected to continue to be the most significant contributor to economic growth in the city and region throughout the forecast period.

Sustained high levels of net migration of individuals in the 35 to 44 age range would mitigate a slowdown in personal consumption spending. This age range continues to dominate population growth. For 2019, population growth due to net migration was 52 per cent (or +9,560 people). Natural increase, the difference between births and deaths, added 8,807 persons.

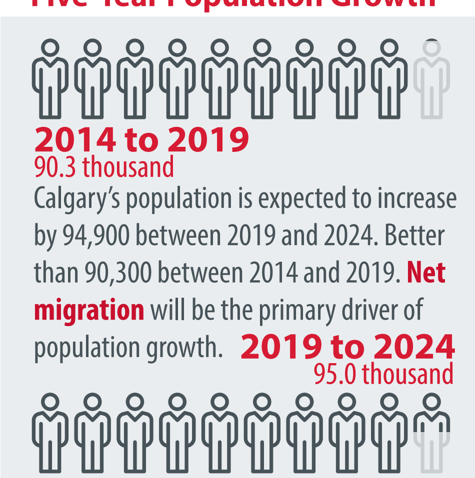
Calgary's population is expected to increase by +95,000 persons between 2019 and 2024 with a shift in the population age structure. The number of elementary and pre-elementary school-aged children (zero to nine years) is expected to increase. The number of youth (aged 15 to 19 years) is also expected to increase. By 2024, the number of seniors aged 65 to 79 years is expected to increase by +35,100 people relative to 2019. Also, by 2024, the population aged 40 to 49 years is expected to increase by +31,100 people relative to 2019. A larger share of the population aged 35 to 54 years is usually a boost to economic prosperity.

The CER labour force should increase to 986,800 persons in 2019. The forecast average growth rate is 1.6 per cent because Calgary's labour force participation rate is expected to lead the country. The labour force should hit one million people sometime in 2020. The working-age population is expected to increase at a faster average rate of 1.9 per cent. The labour force participation rate would decline from 73 per cent in 2019 to 71 per cent by 2024.

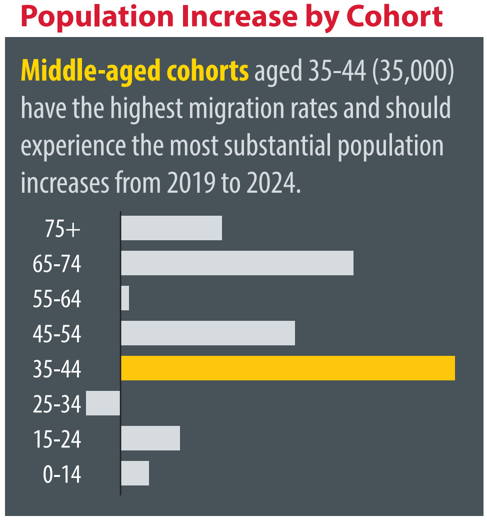
A return to a steady pace of job creation in the CER has had false starts. The services-producing sector lost jobs in 2016 and 2018. The goods-producing sector lost jobs for three straight years from 2015 to 2017, before recovering some of the losses in 2018. For the forecast horizon, employment growth is expected to average two per cent through to 2024. A 2.4 per cent average annual pace of growth of services-producing sector jobs would occur through to 2024. It would offset a much slower average annual pace of goods-producing sector job growth of 0.5 per cent.

The unemployment rate is expected to decline to 6.5 per cent at the end of the current business plan and budget cycle (2022). The reason for that is that the average growth rate of jobs (+2.0 per cent) should exceed the average growth rate of the labour force (+1.6 per cent). The CER unemployment rate would still be unusually high. Since 2000, the unemployment rate has been 6.5 per cent or higher only during recessions. The forecast assumes economic and employment growth would be slightly lower elsewhere in Canada than it would be in Alberta for 2020 to 2024.

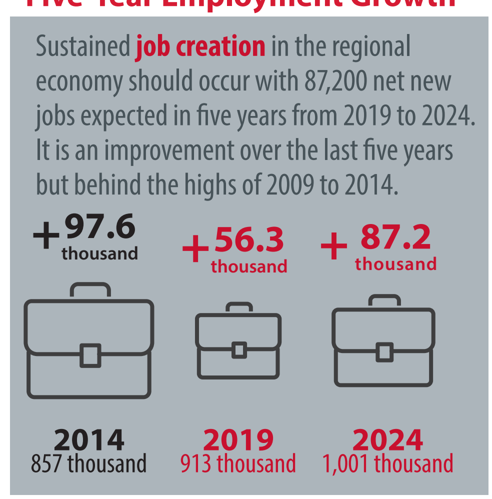
Five-Year Population Growth



Population Increase by Cohort



Five-Year Employment Growth



4. Cost pressures are expected to persist and remain higher for businesses and government than for consumers

For consumers, increases in the cost of food and shelter have been the most significant source of inflation in 2019. Prices of agricultural commodities and those commodities (e.g. wood and steel) used in construction have strengthened. They have contributed to making finished food and shelter products more expensive. Transportation costs have had less of an impact due to the elimination of the provincial carbon tax. After a 2.4 per cent increase in 2018, the expectation is moderate annual price change for consumer goods of 1.6 per cent for 2019. Four forces are expected to contribute to the forecast path for the consumer price index.

- Transportation costs would increase because the federal government is expected to introduce a federal carbon tax in 2020 with the tax rate escalating through to 2022.
- Shelter costs would be stable because lower local housing and rental costs would offset expected increases to heating costs.
- A relatively stable Canadian dollar relative to the U.S. dollar should keep prices for imported consumer goods and services steady.
- Minor adjustments to the Bank of Canada's overnight rate would occur for most of the forecast period because domestic interest rates are already low and monetary policy authorities have little room to manoeuvre in response to adverse shocks.

For businesses, there would be significant upward pressure on labour costs as Alberta wage inflation is expected to increase from 2.5 per cent in 2019. It will average 2.6 per cent for the remainder of the forecast period. After a 2019 fall in the raw material price index, it is expected to increase to a forecast period average of 1.6 per cent. In short, the cost of doing business will drop in 2019 in line with the decline in investment activity before surging in 2020 and beyond. Calgary's businesses will be under pressure to manage operating cost increases.

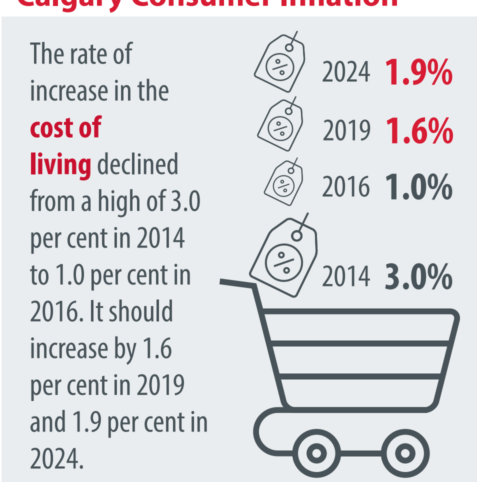
For the government, population growth would add to operating cost pressures. For businesses, with population growth, the market for their goods and services expands and operating cost increases can be spread across more consumers.

The base case forecast for non-residential building construction inflation would impact private sector and government capital spending. Like higher prices for operating activities, non-residential building construction inflation is expected to exceed consumer price inflation over the next four years. Upward price pressure would come from increased world oil prices that increase transportation costs to get materials to construction sites. Continuing international trade disputes would limit the supply and increase the cost of material inputs across borders.

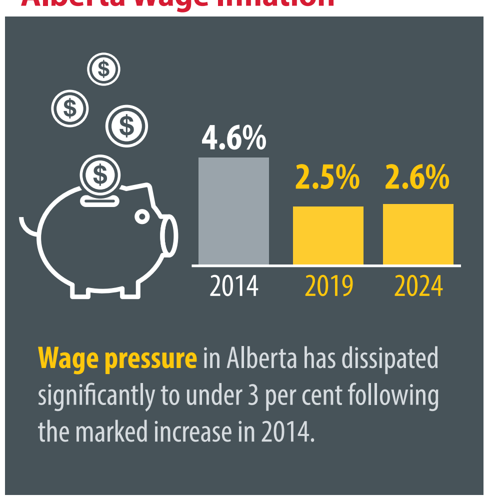
The operating and capital cost pressures on Calgary's municipal government would be higher than consumer inflation because of increased demand from population growth, raw material price increases, a higher product price index, and non-residential building construction inflation. It will require innovation to maintain infrastructure investment and the provision of frontline services that keeps up with population growth.

The new provincial UCP government commissioned a blue ribbon panel that recommended adjusting capital funding allocations to municipalities to bring Alberta's provincial and municipal per capita capital stock to the national average. Alberta's private sector per capita capital stock is more than four times the national average. Accepting the recommendation by lowering capital transfers to municipalities would be adverse for municipalities because public sector investment is a vital complement to private sector investment.

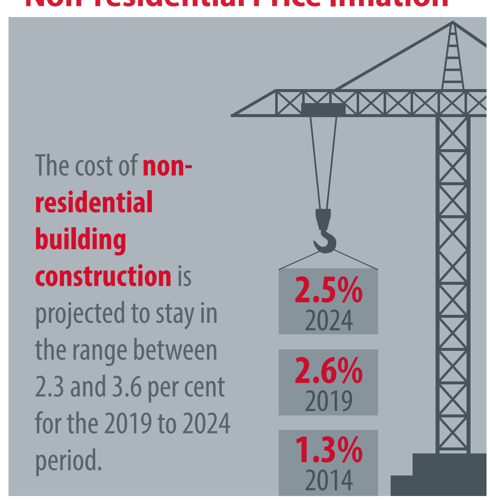
Calgary Consumer Inflation



Alberta Wage Inflation



Non-residential Price Inflation



Executive Summary

Averages: Actual (2015 to 2018) vis-à-vis Forecast (2019 to 2022) Budget Cycle

Economic Indicator	Actual Previous City of Calgary Budget Cycle [2015 to 2018] Average	Forecast Current City of Calgary Budget Cycle [2019 to 2022] Average	Forecast Implications
Assumptions			
World			
Real Gross Domestic Product Growth (%)	3.5	3.5	A larger economic and population base would increase the demand for commodities and place upward pressure on commodity prices. It will have a positive impact on Canadian terms of trade as Canada produces several commodities.
The United States			
Real Gross Domestic Product Growth (%)	2.5	2.1	Deceleration in demand growth for Canadian exports in line with a deceleration in growth for Canada's most significant trading partner.
Canada			
Real Gross Domestic Product Growth (%)	1.7	1.7	The average rate of economic growth in Canada would remain unchanged.
Prime Business Loan Rate (%)	3.0	4.0	Higher borrowing costs for The City's suppliers would increase The City's purchase costs, and should also affect variable rate mortgages for Calgarians.
Exchange Rate (US$ for 1C$)	0.77	0.76	Exchange rate stability would keep the price of imported goods stable limiting the need to hedge.
Alberta			
Real Gross Domestic Product Growth (%)	-0.3	1.9	The Alberta economy would leave the recession behind and move into a phase of economic expansion growing steadily.
Total Employment Growth (%)	0.7	1.2	The pace of job growth would improve as the expansion in gross domestic product takes hold.
Unemployment Rate (%)	7.1	6.7	The unemployment rate would improve with a faster pace of job creation.
Housing Starts ('000 Units)	29.4	27.3	Inventory build-up would ease the pace of housing starts to the pace of household formation.
CPI-Inflation Rate (%)	1.6	1.9	Inflation rate would increase as the economy expands.
West Texas Intermediate - WTI (US$/bbl)	52.0	60.5	Better international price stability together with moderately higher crude oil prices would increase prices for petroleum-based commodities, transportation costs and inflation.
Western Canadian Select - WCS (US$/bbl)	35.4	45.0	The WCS oil price would increase as the provincial government would be motivated to turn on production curtailment lever whenever price drops occur because of limited pipeline capacity. The motivation would come from the need to mitigate drops in provincial resource revenue.
Alberta Natural Gas Price - AECO/NIT ($/GJ)	2.1	2.0	The impact on The City of Calgary would be mixed. Slightly lower prices will put downward pressure on operating costs and at the same time put downward pressure on franchise fee revenue.
Industrial Product Price Index (%)	1.5	1.4	Price growth for finished products would be similar to the previous budget cycle.
Raw Materials Price Index (%)	-1.1	0.8	Raw material prices would remain weak in this new phase of increased protectionism.
Alberta Average Wage Rate Increase for All Industries (%)	-2.6	2.6	Job growth would lower the unemployment rate. Competition for talent should emerge and lead to moderate rates of wage inflation.

Executive Summary

Averages: Actual (2015 to 2018) vis-à-vis Forecast (2019 to 2022) Budget Cycle

Economic Indicator	Actual Previous City of Calgary Budget Cycle [2015 to 2018] Average	Forecast Current City of Calgary Budget Cycle [2019 to 2022] Average	Forecast Implications
Forecast			
Calgary Economic Region			
Real Gross Domestic Product Growth (%)	0.1	2.2	The pace of growth in the regional economy would be above the Alberta and national economies later in the forecast period.
Total Employment ('000 persons)	878.4	937.7	Job growth would increase demand and prices for non-residential space lifting The City's property tax base.
Total Employment Growth (%)	1.0	1.9	Non-residential building construction activity would intensify. The region would lead the rest of Alberta in major investments ($5 million or more) for all five categories of building construction and infrastructure.
Unemployment Rate (%)	7.9	7.0	A lower unemployment rate would increase the competition for skilled workers and increase cost pressure on The City.
Calgary Census Metropolitan Area (CMA)			
Housing Starts ('000 units)	11.2	10.4	Housing investments have dropped significantly at the start of the current cycle. They would be lower, on average, than for the previous cycle.
CPI-Inflation Rate (%)	1.5	1.8	The local inflation rate would keep increases in the cost of living to below the 2 per cent threshold.
Non-Residential Building Construction Inflation (%)	0.1	2.7	The rate of escalation for construction costs would be much higher for the current cycle.
City of Calgary			
Demography			
Total Population ('000 Persons) *at the end of the cycle*	1,244.9	1,313.0	Demand for municipal services would be higher, and the residential property tax base should increase.
Total Population Growth (%)	1.5	1.4	The pace of population growth would be similar to the previous cycle as the local economy enters a gradual expansion phase.
Net Migration ('000 Persons)	7.8	10.3	Positive net migration would exceed natural increase as the primary source of population growth. Most migrants would come from international sources.
Household Formation ('000 Units)	7.9	6.6	The rate of household formation would decrease with the decrease in the number of births.
Real Estate			
Residential Market			
Housing Starts ('000 units)	9.2	8.2	The City's revenues from residential building permits would be slightly lower.
Average Residential MLS Sale Price (% change)	-0.3	1.9	Household wealth would grow at a faster pace.
Building Permits ($billion) (city)	5.0	4.6	The City's residential taxable assessment base would grow more slowly.
Non-Residential Market			
Downtown Office Vacancy Rate (%)	18.9	20.2	The downtown office vacancy rate would remain close to the average for the previous cycle.

Numbers may not add up due to rounding.

Executive Summary

Forecast Risks

Risks arising from activities in the Rest of World:

Worsening global outlook, outstanding trade tensions, and the differences in monetary policy direction for Canada and the U.S.

Risks from policy differences across Canada or policies targeting average conditions in Canada:

Policy to address housing investment imbalances elsewhere is impacting Calgary, sustaining Alberta's crude production and export levels, and different economic conditions across Canada.

Global GDP Outlook

The U.S. has had the longest-lasting business cycle on record, and the possibility of a slowdown has increased. It is a significant driver of a worsening **global GDP outlook**. The U.S. economy is about 24 per cent of the world economy and is Canada's primary trading partner. A slowdown would reduce Canadian exports to the U.S. Without other markets for Alberta's exports, especially crude oil, investment and GDP in Calgary would decline.

Trade Tensions

Despite a 2018 deceleration in global goods trade, **trade tensions** have escalated. U.S. tariffs applied exclusively to Chinese goods have increased to cover goods worth US$550 billion from US$225 billion in April. Chinese tariffs applied solely to U.S. goods expanded to include goods worth US$185 billion from US$50 billion. The movement toward protectionism affects Calgary because imports exceed 50 per cent of domestic demand.

Interest Rate Policy

The Canadian and U.S. **central banks have made different policy choices**. The Bank of Canada has kept the overnight rate the same all year. The U.S. Fed implemented several 2019 rate cuts. The resulting interest rate differential has strengthened the loonie. A Bank of Canada rate cut would weaken the loonie and increase the cost of imports, which are already more than 50 per cent of Calgary's domestic demand. It would decrease Calgary's GDP.

Housing Investments

The federal mortgage stress test has contributed to diverting interest away from single-family to multi-family units in Calgary. It was introduced to address imbalances in the level of **housing investments** in Toronto and Vancouver. Federal political parties, including the governing incumbent, have proposed alternatives to be implemented following the upcoming federal election. The outlook assumptions reflect the current policy regime.

Crude Oil Production

The provincial curtailment program lowered Alberta's share of Canadian crude oil production in the first half of 2019. Delayed or accelerated approval of pipelines would affect Alberta's **crude oil production** and export levels. Also, larger volumes could occur due to Middle East tensions that reduce crude oil transit in the Strait of Hormuz. Lower volumes could be due to a surge in U.S. shale production if WTI prices improve.

National vs Regional

Canada is experiencing a long-lasting business cycle. **Federal authorities have used fiscal and monetary policy tools to manage average economic conditions in Canada**. While Canada has had one business cycle over the last ten years, the CER and the province of Alberta have had to contend with two. Different economic conditions in Calgary and Alberta relative to Canada could lead to policies that do not work for Calgary.

Executive Summary

Risks from potential changes in Alberta provincial government policies:

The uncertainty associated with the policy approach to get Alberta crude to new markets, the path of public sector spending, and the level of capital funding for Alberta municipalities.

Risks from local and regional private and public-sector influences:

A revision to investment intentions, no adjustments to previously approved municipal capital projects, and expectations for the labour force participation rate.

7 Crude Oil Exports

Alberta oil production outpaces crude oil pipeline capacity by a large margin. The previous NDP government used a two-part approach: mandatory production curtailment and the purchase of a $3.7 billion crude-by-rail contract. The new UCP government plans to alter the strategy on **medium-term access to alternative markets for crude oil** by divesting the contract to private industry.

8 Government Spending

The healthcare and social assistance industry, rather than the oil and gas industry, has contributed the most to job growth in Calgary. The industry's employment would face downward pressure as the **provincial government plans to reduce government spending on healthcare and education**. Steady job creation in the summer should sustain 2019 job growth. Beyond 2019, job growth could slow down.

9 Infrastructure Spending

Investment by the three orders of government in Calgary is expected to decline because of a decrease in **capital spending dollars through the provincial government**. A one-time federal gas tax fund increase provides temporary relief. Although the recent MacKinnon Report on Alberta finances recommends further reductions to capital funding to municipalities, the real GDP growth rate forecast assumes no further capital funding cuts.

10 Private Investment

Decreases or increases to non-residential **investment intentions** would lower or expand the need for residential investment and the general level of economic activity. No new downtown office investment is anticipated through to 2024 because of oversupply. Nevertheless, changing the use of existing buildings could occur. The investment dollars for that would alter the forecast.

11 Government Investment

Reductions to government investment at a time when the economy is not firing on all cylinders would lower economic growth. It is accepted wisdom that government infrastructure investments should be countercyclical. It helps moderate non-residential building construction inflation and smoothens demand for material and labour. The forecast assumes that all previously **approved municipal capital projects would go ahead** and support growth.

12 Labour Force Changes

Declines in the labour force participation rate are usually due to an ageing workforce, and the youth spending extended periods in educational institutions to improve their chances of job market success. Using the pattern observed elsewhere in North America, the forecast assumes a drop in the **labour force participation rate**. If Calgary breaks with the pattern and sustains high participation rates, the local unemployment rate would remain high.

Executive Summary

Development Agreements and Off-site Levies

Housing investment is vital for strong growth in Calgary. From 2010 to 2018, investments in new housing units was between 6.3 and 8.7 per cent of final domestic demand. For 2019, housing starts and house prices are both lower than in 2018. Housing investment in 2019 is expected to have a lower contribution to the final domestic demand relative to 2018. Housing investment would represent the biggest drag to economic activity this year.

Population growth would support demand for new housing investments but at a slower pace. The annual addition to housing units in 2018 was 1.8 per cent. The 2019 decline in housing starts would reduce the pace of residential dwelling expansion to 1.1 per cent. The slower pace is due to the cumulative impact of excess housing inventory and reduced affordability. A more stringent mortgage stress test has contributed to reduced affordability.

The decline in housing investment affects the local government directly. The level of housing investment, together with house prices, affects the growth in assessed value for residential property. Property taxes remain an essential source of operating revenue. The local government can lower the mill rate when there is a significant expansion in household wealth.

There is an indirect impact on infrastructure investment. Through development agreements, The City approves the development of suburban lands for use in residential and non-residential investment. The growth rate of development agreements is a leading indicator for future housing investment. The City tracks the growth of development agreements to inform future expectations of housing and non-residential investment.

Development agreements also inform future capital funding flow expectations. Each hectare of land that gets approved through development agreements triggers between $450,000 and $500,000 in off-site levy payments to The City. The City receives payment over three years. It funds the infrastructure necessary for residential and non-residential growth in Calgary's suburbs.

The levy funds may not be available when the infrastructure is required. Some infrastructure is financed using debt. Debt-financed infrastructure adds to City costs through growth-related annual debt obligations. As necessary, to enable the development to proceed, The City has used other funding sources (e.g. grants, taxes, utility rates) to cover the costs. The expectation is that off-site levy funding would occur as development proceeds.

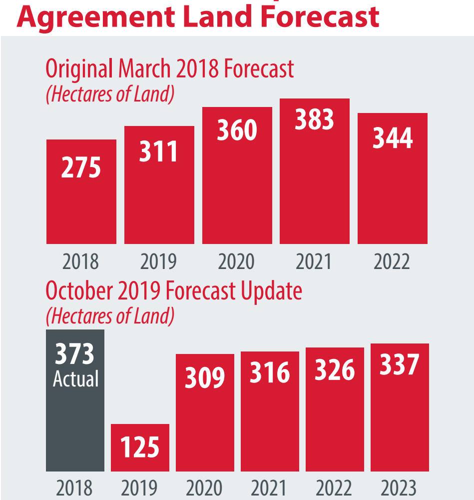
Analysis when developing the 2016 off-site levy bylaw utilized an average of 400 hectares annually. During One Calgary, the expectation was for 1,673 hectares of greenfield development agreement lands between 2018 and 2022. The fall 2019 update has further lowered the expectations to 1,449 hectares of land.

There are two primary driving forces for the change. First, the One Calgary forecast was at a different time in the economic cycle. The level of housing investment and affordability have worsened.

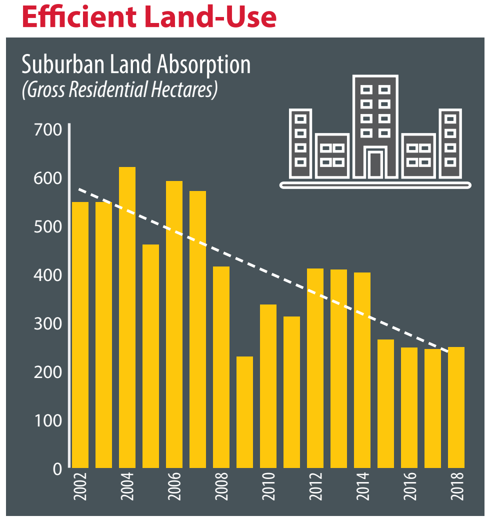
The second driving force is more efficient land use. Suburban land absorption has declined. The City introduced Municipal Development Plan targets in 2009. It encouraged more density, and the local development industry responded. Today, on average, each investment dollar gets applied to less land. It is evident in the increase in multi-family housing investment relative to single-family housing investment.

By mid-September 2019, the local industry had entered into Development Agreements for 85 hectares of land. The development industry has indicated that at least another 53 hectares of land will enter into a development agreements by the end of 2019.

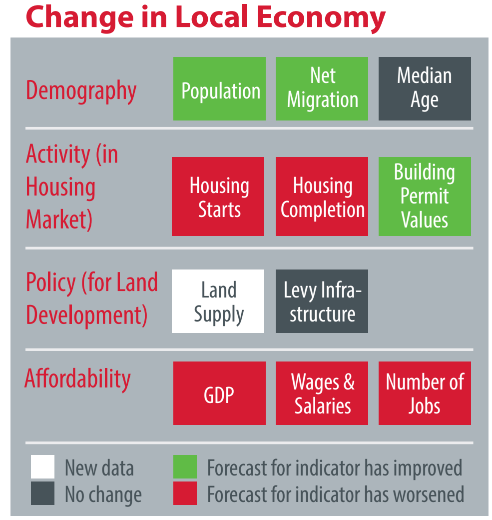
Greenfield Development Agreement Land Forecast



Efficient Land-Use



Change in Local Economy



Forecast

The Local City of Calgary Economy

The Sources of Economic Growth in Calgary

Personal consumption expenditure is expected to continue to be the most significant contributor to economic growth in the city and region throughout the forecast period. Lower growth, relative to trend, is expected in 2019 due to negative contributions from housing and business fixed investment. Housing and business fixed investment are expected to recover in 2020 and beyond. The base case forecast is a decline in investment by the three orders of government in 2020. It is attributable to expected spending cuts by the Alberta provincial government and the Calgary municipal government.

The latest (2016) Federal Census showed that the city of Calgary made up 83 per cent of the regional population. A useful rule of thumb is to consider that at least five out of every six dollars of economic activity generated in the region is attributable to the city of Calgary.

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

Non-Residential Activity – Significant Public Investment to complement Private Investment

Non-residential building investment should decline in 2019 relative to 2018. Many Calgary businesses are not investing in expansion. Instead, they are taking advantage of lower corporate income taxes to buy back shares or explore mergers and acquisitions. Infrastructure investments initially expected to limit reductions in the level of investment in the spring would be affected by the provincial government's plan to implement further cuts to capital spending. Infrastructure investments support local economic activity. Transportation engineering construction, for example on road infrastructure investments, like the Southwest Ring Road and Crowchild Trail upgrades, generate more than $3 in local GDP for every dollar spent.

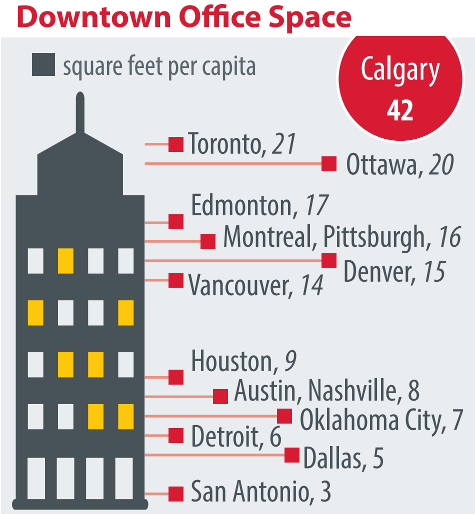
The office segment of the non-residential building investment would be hard hit. Downtown Calgary had a supply of 42 square feet of office space per Calgarian in Q2 2019. It is the highest level of supply across Canadian cities. Toronto, in second place, for a group of comparable cities, was at 21 square feet per person. Calgary's high level of downtown office supply is due to the addition of millions of square feet of office space. For an extended period, Q1 2013 to Q4 2017, the buildup of 4.0 million square feet of additional office space supply accompanied a sustained reduction in demand by 6.1 million square feet. Unfavorable conditions in the oil and gas industry contributed.

More downtown office space is occupied today than at any time in Calgary's history and relative to other Canadian cities. Downtown Calgary office space utilization was 31 square feet per Calgarian in Q2 2019 compared with 20 square feet per person in downtown Toronto. There is limited room for further growth in demand. As a result, future investments in the downtown Calgary office market over the next decade could be limited. Enhancements, later in the forecast horizon that improve the quality of offerings could occur. Calgary's downtown office vacancy rate is expected to decline gradually with job growth, especially for office workers.

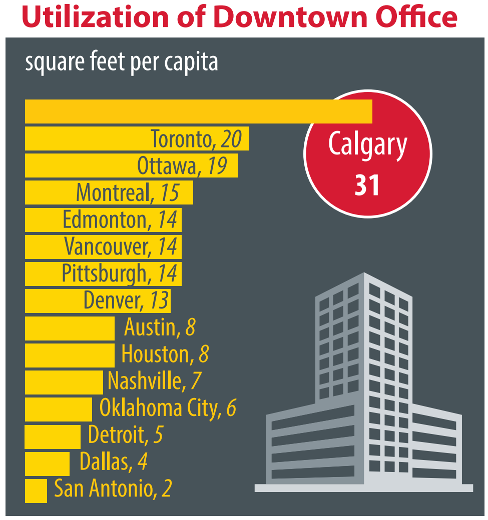
Non-Residential Building Construction Inflation – Impact on City Costs

Non-residential building construction inflation captures the value of all materials, labour, equipment, overhead and profit to construct a new building. Any rush to get multiple building

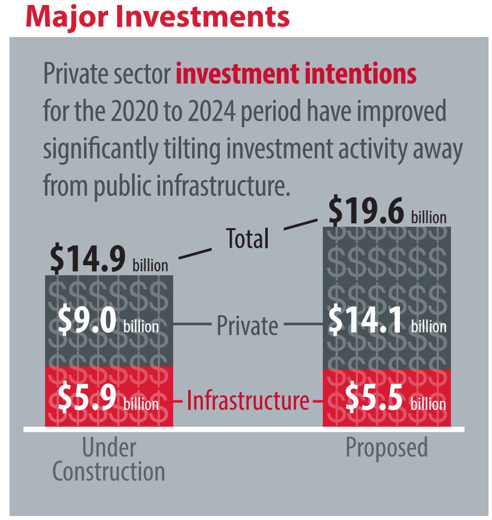
Downtown Office Space



Utilization of Downtown Office



Major Investments



construction projects going on at the same time risks inserting inflation because of higher cost inputs into the local economy. Inflation would occur mostly through increases in material and labour costs.

In 2019, The City of Calgary, either directly or through its civic partners, added new infrastructure investments to those in the 2019-2022 capital budget approved in 2018. Because these investments do not commence in 2019, the impact on the local economy would occur later. In Alberta and Calgary, public sector investment typically fluctuates between nine and 16 per cent of private sector investment in any given year. Ideally, public sector investment should be countercyclical. The practice would moderate non-residential building construction inflation by smoothening out the demand for material and labour inputs across time. For 2019, delays to completing the Cancer Centre, as well as private sector investment in Telus Sky, support a balance between demand and supply for construction inputs.

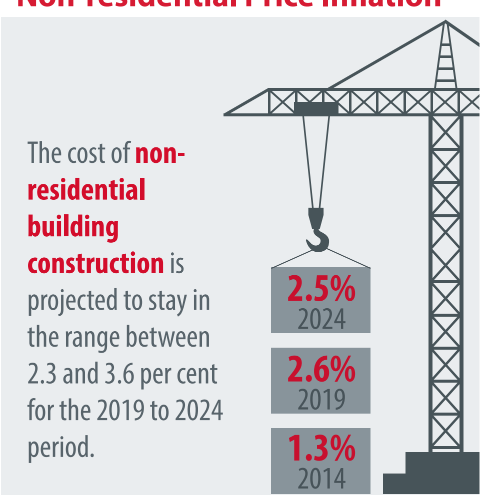
The base case forecast is that non-residential building construction inflation would average slightly above consumer price inflation over the next four years. Upward price pressure from increased world oil prices would, in turn, increase transportation costs to get materials to construction sites. Also, continuing international trade disputes would limit the supply and increase the cost of material inputs across borders. There would be upward price pressure from a weaker Canadian dollar relative to the U.S. dollar. The primary risk to the forecast would be the accelerated approval of pipelines to transport crude. It would lead to growth in other projects and put pressure on material and labour inputs. The outcome would be an increase in construction inflation.

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

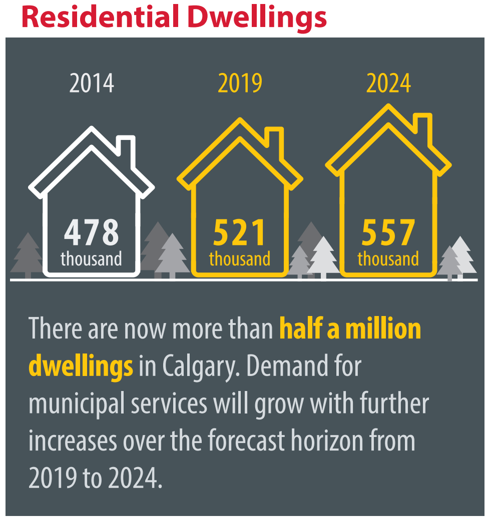
The 2016 Federal Census showed that increases to the number of dwellings in Canada, over five-year intervals, is decelerating. Between 2006 and 2011, there was an addition of 886,014 dwelling units. Fast forward to the 2011 to 2016 period, and there was an addition of 750,410 units. Only four regions increased their additions to the stock of dwellings – Alberta, Manitoba, Nunavut, and Saskatchewan. For Alberta, additions to the stock of dwellings increased from 134,575 to 137,355 units over the same five-year intervals. Calgary had a vital role to play in Alberta's past success. More recently, activity in Calgary has slowed. In 2018, 8,900 housing units started in the city of Calgary. It is a significant drop from 13,800 and 10,700 units in 2014 and 2015 respectively. For 2019, the 7,800 units of housing starts expected is comparable with 2016 when Calgary was in a recession. Subsequently, the forecast is for housing starts to recover to an average of about 8,500 units per year for the 2020 to 2024 period.

The value of building permits is a useful measure of investment intentions over the coming year or two. In 2018, the value of proposed building investments in the city of Calgary was $4.6 billion. Two out of every three dollars gets directed at residential property construction. The execution of some of the investments would occur in 2019 due to the time required for completion. For 2019, the base case forecast is a decline to $4.3 billion. It is consistent with the expected deceleration in housing starts and a shift to multi-family units. Subsequently, investment intentions would improve with building permit values expected to increase to $4.6 billion in 2020. For 2020 to 2024, the forecast average is $4.9 billion per year. Residential investment is expected to continue to dominate non-residential investment.

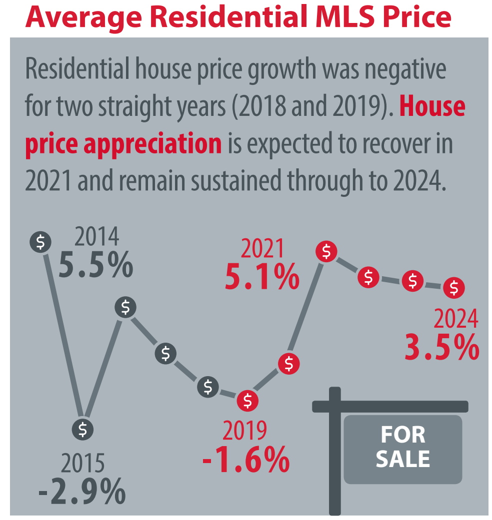
Non-residential Price Inflation



Residential Dwellings



Average Residential MLS Price



Forecast

The average house price would fall for the second straight year in 2019. Weak 2018 job growth triggered lower demand growth that, in turn, led to a drop in house prices. Improvement in real wage and job growth for 2019 has been insufficient to erode the buildup of inventory. The 2019 decline in housing starts is expected to help reduce the accumulation of inventory. The base case is that house price appreciation is not likely to resume until 2021. Lower house prices in 2019 would affect the 2020 residential assessed values.

The Contribution of Private Consumption and Upward Pressure on Municipal Services

Local Population Growth to support Growth of Personal Consumption Expenditure

The 2019 municipal census put Calgary's population at 1.286 million. The annual rate of population increase was 18,367 people or 1.4 per cent, which is a deceleration from 1.7 per cent last year. Consequently, the contribution of personal consumption to local GDP growth is expected to decelerate in 2019. Sustained high levels of net migration of individuals in the 35 to 44 age group would mitigate a slowdown. The age group continues to dominate population growth. For 2019, population growth due to net migration was 52 per cent (or +9,560 people). Natural increase, the difference between births and deaths, added 8,807 persons.

The 2019 population forecast update for 2020 to 2024 lies midway between the 2017 and 2018 population forecasts. In 2017, Calgary had just endured back-to-back years of economic decline increasing fears of a prolonged recession and a delayed return to moderate rates of growth. In 2018, population growth expanded at a remarkable pace, and Calgary's population was expected to increase to 1.399 million people by 2023.

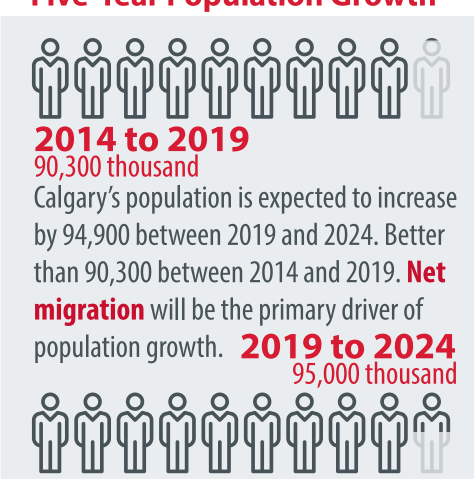
The 2019 forecast update revises the 2023 population downwards by 2.8 per cent to 1.360 million people. There are downward revisions to the pace of both natural increase and net migration. For natural increase, the 2019 census showed that the number of births in Calgary is declining faster than anticipated as the prime childbearing age group declines. Baby boomer deaths have increased in tandem. The decline in the natural increase from 2018 to 2019 was particularly dramatic (-6.5 per cent). For the forecast horizon, net migration would continue to account for most (59 per cent) of the population increase from 2020 through to 2024. However, downward revisions to the pace of investment and economic growth translate to fewer new residents getting attracted to Calgary. It reduces the average annual level of net migration to 11,200 persons between 2020 and 2024.

The Shifting Age Structure to Impact City Services to the Local Population

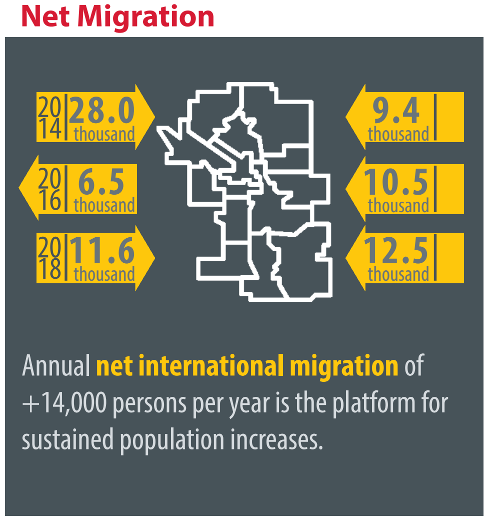
Calgary's population age structure is expected to shift from 2019 through to 2024. While Calgary's population is expected to increase by +95,000 persons, a lot of the increase is forecasted to occur in the 40-44 age group (+22,500) and the 45-49 age group (+12,000).

The number of elementary and pre-elementary school-aged children (zero to nine years) is expected to increase. The number of youth eligible for post-secondary education (aged 15 to 19 years) is also expected to increase. By 2024, the number of seniors aged 65 to 79 years is expected to increase by 35,100 people relative to 2019. Also, by 2024, the population aged 40 to 49 years is expected to increase by +31,100 people relative to 2019. A larger share of the population aged 35 to 54 years is usually a boost to economic prosperity.

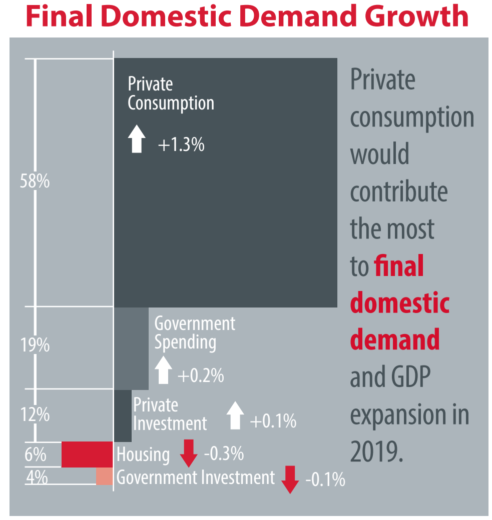
Five-Year Population Growth



Net Migration



Final Domestic Demand Growth



Forecast

Forecast: The Broader Regional Economy (Calgary Economic Region)

The Pace and Magnitude of Economic Output Growth

The duration of the average business cycle is getting longer at the national level. It is an outcome of federal authorities' deployment of fiscal and monetary policy tools. They have been active at managing average conditions but not regional variations. While Canada has had one business cycle over the last ten years, the CER and the province of Alberta have had to contend with two. The most recent CER and Alberta business cycle demonstrates the difference. The CER's 0.1 per cent average annual GDP growth rate for the 2015-2018 business plan and budget cycle period is like that for Alberta (-0.3 per cent). For the same period, the Canadian average was 1.7 per cent as part of the continuation of cycle that started in 2009.

The regional economy has gotten off to a slow start for the 2019-2022 business plan and budget cycle. Although annual Statistics Canada estimates are not due for a few years, estimates are available from private-sector forecasters. The Conference Board of Canada's September 2019 forecast update indicated that the Calgary Census Metropolitan Area (CMA) was in a technical recession. They referenced GDP declines in Q4 2018 and Q1 2019. Estimates from other private-sector forecasters are different. Oxford Economics (for the CMA) and Stokes Economics (for the CER) suggest economic expansion at a slow pace. Their projections are growth rates of 1.7 and 0.9 per cent respectively. The City's 2019 corporate forecast for the CER puts economic growth in line with the other private-sector forecast estimates. The 2019 forecast for GDP growth in the Calgary region is 1.3 per cent. More generally, the pace of growth after the 2015-16 recession is different from the past when Calgary rebounded at a much faster pace.

While a GDP decline in Q4 2018 is very plausible, a continuation in Q1 2019 is less. After increasing for the first three quarters of 2018, revenue from Alberta crude sales fell more than 60 per cent in Q4 2018. The fall was partly due to a glut of crude oil output that triggered a sharp fall in WCS prices. WCS prices recovered in 2019 with the provincial government's curtailment program. Quarter-over-quarter revenue from crude sales increased more than 130 per cent from Q4 2018 to Q1 2019. Alberta crude sales from the first half of 2019 were above 60 per cent of the total 2018 revenue. The base forecast for 2019 is a positive but modest GDP growth rate. Subsequently, the GDP growth rate should improve with better prices and an end to the curtailment program. Trade in crude oil is volatile due to responsiveness to previously unanticipated events across the world. As a result, there are forecast risks, and future revisions could be required.

Contribution to CER Economic Expansion

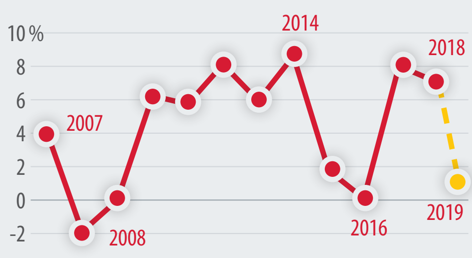
Increased Public Infrastructure, Oil Sands and Other Investments

Major investments ($5.0 million or more) that are underway in Fall 2019 for the CER across eleven sectors are estimated to cost $14.9 billion to complete (up from $12.0 billion in the Spring 2019 Outlook). Another $19.6 billion in major investments is expected to commence later in 2019 or by no later than 2021 (up from $14.4 billion in the Spring 2019 Outlook). The total short-to-medium-term investment in major projects is $34.5 billion (up from $26.4 billion). Proposed investments are higher than investments underway and would contribute to future economic growth.

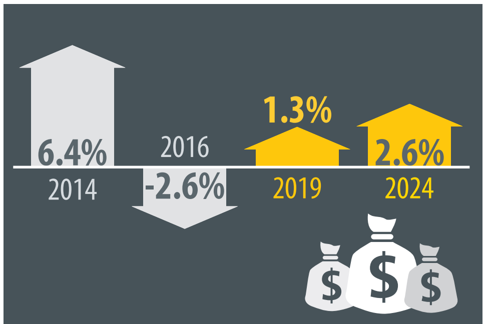
The CER would be home to more than half of Alberta private sector investments in five categories – retail property (78 per cent), commercial property (74 per cent), mixed-use (74 per cent), tourism or recreational (63 per cent), and residential investments (58 per cent). Projects (underway in 2019 or to commence by no later than 2021) in these five categories would cost $19.6 billion in investment dollars. Three private-sector investments of at least a billion dollars are either underway or planned in the latest tally.

Crude Oil Production

For the third time in the last fifteen years, Canadian **oil production** would decelerate in 2019 with implications for private sector investment.

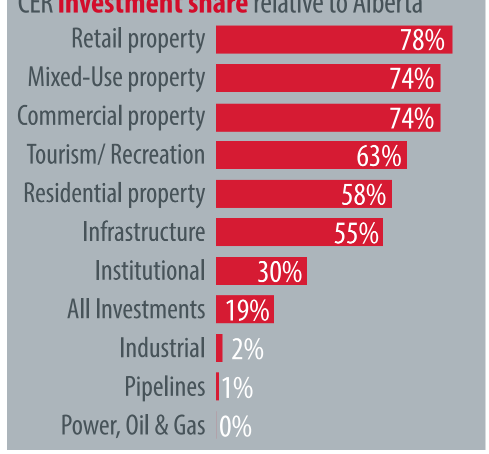


GDP Growth



1.3 per cent **GDP growth** is expected for the Calgary Economic Region in 2019. Slow growth continues to take hold in Calgary.

Major Investment ($5M or more)



Forecast

The projects are the StoneGate Landing mixed-use property development, Highland Park Redevelopment, and Ribstone Ranch Residential Redevelopment.

Municipal, provincial and federal infrastructure investments, underway or proposed, in the CER are expected to cost about $11.4 billion. The multi-billion-dollar investments on the list include the Crowchild Trail project, the Calgary Cancer Centre, the Green Line LRT, and the Southwest Calgary Ring Road project. Additions to planned infrastructure investments in 2019 include the BMO Centre expansion and an Event Centre.

Investment activity in Alberta is also expected to strengthen over the 2019-2022 period. For Alberta, there are 670 major projects in the books, with 352 already underway, and 318 should commence by 2021. Projects that are underway are expected to cost $67.7 billion (up from $55.2 billion in Spring 2019 Outlook). Projects that are scheduled to begin later in 2019 or by no later than 2021 would cost $118.8 billion (down from $131.1 billion in Spring 2019 Outlook).

Oil and gas, as well as pipeline projects, would account for 54 per cent of projects underway or proposed in Alberta. These projects would occur outside the CER but are initiated by businesses with headquarters in the CER. The three most substantial investments are Frontier Oil Sands Mine ($20.6 billion), MEG May River Project ($10.0 billion), and Keystone XL Pipelines ($10.0 billion). Keystone XL is expected to feed crude in a 36-inch pipeline from Hardisty, Alberta to Steel City, Nebraska. The pipeline would be 1,897 kilometres (1,179 miles) in length and be able to handle 800,000 barrels per day helping to resolve some of the ability to get Alberta crude to market.

Services-Producing Sector Job Growth to Drive Economic Expansion

The CER labour force is expected to increase to 986,400 persons in 2019, from 965,400 in 2018. The forecast average growth rate is 1.6 per cent because Calgary's labour force participation rate is expected to lead the country. The labour force should hit one million people sometime in 2020. The working-age population is expected to increase at a faster average rate of 1.9 per cent. The labour force participation rate would decline from 73 per cent in 2019 to 71 per cent by 2024.

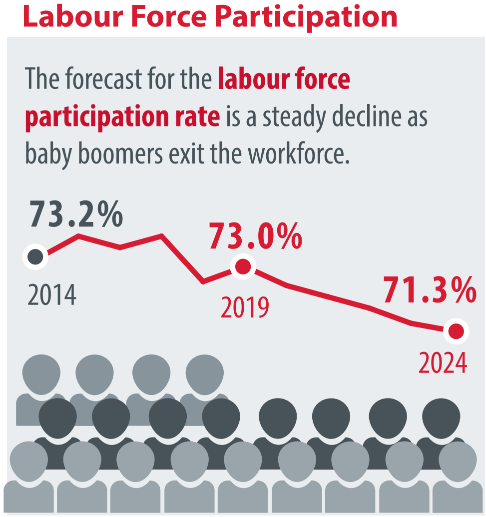
A return to a steady pace of job creation in the CER has had false starts. The services-producing sector lost jobs in 2016 and 2018. The goods-producing sector lost jobs for three straight years from 2015 to 2017, before recovering some of the losses in 2018.

The 2019 pace of job creation in the CER is expected to exceed that for 2018. For 2019, the economy is expected to add 21,200 net new jobs. It is a significant increase from 8,200 net new jobs in 2018. For the current business plan and budget cycle (2019-2022), most of the employment increase (+71,500) should arise from the services-producing sector. The goods-producing sector is expected to be relatively unchanged in 2022 from 2018 (+600). By the end of the forecast period, goods-producing sector jobs are expected to be less than the 2014 peak (-17,500). A transformation in the types of skills needed in the new economic environment is at work.

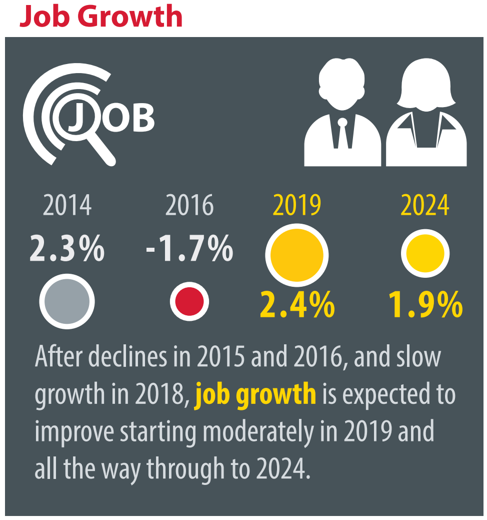
Employment growth is expected to average 2.0 per cent through to 2024. A 2.4 per cent average annual pace of growth of services-producing sector jobs would occur through to 2024. It would offset a much slower average annual pace of goods-producing sector job growth of 0.5 per cent.

The unemployment rate is expected to decline to 6.5 per cent at the end of the current business plan and budget cycle (2022). An unemployment rate of 7.4 per cent should materialize at the beginning of the budget cycle (2019). It is because the average growth rate of jobs (+2.0 per cent) should exceed the average growth rate of the labour force (+1.6 per cent). The CER unemployment rate would still be abnormally high. Since 2000, the unemployment rate has been 6.5 per cent or higher only during recessions. The forecast assumes economic and employment growth would be slightly lower elsewhere in Canada than it would be in Alberta for 2020 to 2024.

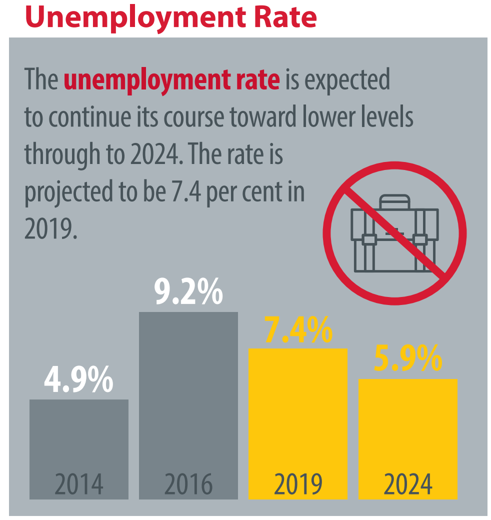
Labour Force Participation



Job Growth



Unemployment Rate



Forecast: Commodity and Consumer Prices – Local and Regional Economic Impact

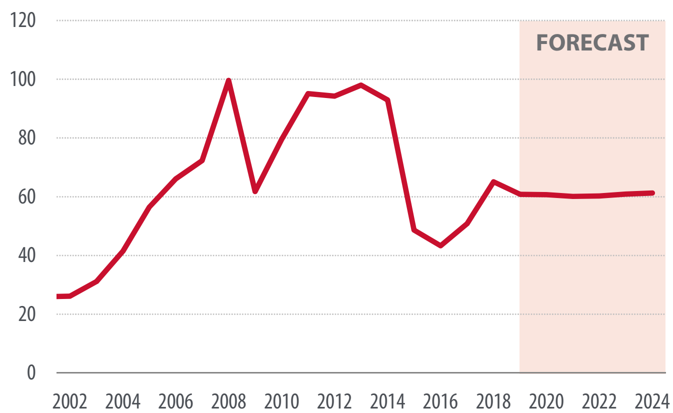
Commodity Prices

Energy Commodities

Crude Oil: WTI crude oil prices averaged US$57.0 per barrel for the initial eight months of 2019. It is down from an average of US$65.1 per barrel in 2018. Price growth at the start of 2018 encouraged Alberta crude production in the second half of 2018. Increased output exacerbated the effects of transportation bottlenecks leading to an unprecedented price spread that saw WCS decline by as much as US$50 per barrel less than WTI in October 2018. Between 2015 and 2017, the average annual price difference was US$13.5. In response, Alberta's government instituted mandatory production curtailment. Consequently, Alberta crude production is down 5.8 per cent for the first half of 2019, relative to the second half of 2018.

Looking ahead, WTI is forecast to remain stable at an average just under US$61.0 per barrel in 2019 and 2020. There would be upward price pressure as members of the Organization of the Petroleum Exporting Countries (OPEC), including Venezuela and Iran, reduce output. Downward price pressure from reduced demand attributable to trade disputes and reduced global economic activity would provide offsets.

WTI Crude Oil Price Forecast
(US$/bbl)



Source: U.S. Energy Information Administration, Bloomberg, Consensus Economics, Corporate Economics.

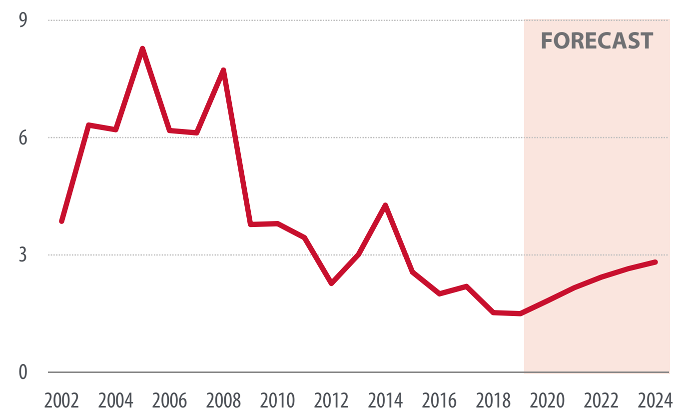
Crude transportation will remain a constraint throughout the forecast period, keeping WCS at a substantial discount to WTI, for three reasons. First, the delay to the completion of Enbridge Line 3 until the second half of 2020 would sustain transportation bottlenecks. Second, the Trans Mountain Expansion approved in June 2019 is not expected to be operational until 2022. Third, the new Alberta provincial government now plans to divest to the private sector a $3.7-billion crude-by-rail contract that was purchased by the previous provincial government in 2018.

The upside risk to the base case forecast arises from continued tensions in the Middle East that may affect crude oil transit in the Strait of Hormuz, thereby disrupting supply. The downside risk is attributable to a surge in U.S. shale production because WTI price is attractive enough for additional production.

Natural Gas: Global natural gas prices have been on a downward trajectory since December 2018, largely the result of rising liquified natural gas supplies and slowing global demand. Natural gas prices at the Henry Hub benchmark in Louisiana have not been immune to this decline, as it is now trading at half the value it was trading at in December. Due to transportation costs, Alberta natural gas prices have traded at a discount to Henry Hub. The differential has widened in the past few years due to a surge in U.S. natural gas production and transportation bottlenecks in the domestic NGTL system. The bottleneck is due to a boom in domestic production in the northern areas of British Columbia and Alberta beyond existing gas transmission capacity. A proposed expansion to the NGTL System is expected to alleviate these constraints but is not likely to be operational for at least a few more years.

Given the current environment, we expect low natural gas prices to continue in the near to midterm. The benchmark Alberta natural gas price at the AECO hub is expected to average $1.49/GJ in 2019 and $1.82/GJ 2020, before gradually increasing to $2.82/GJ by 2024. The price differential between AECO-C and Henry Hub is expected to remain ample in the near term pending increased gas transmission capacity.

AECO-C Natural Gas Price
(C$/GJ)



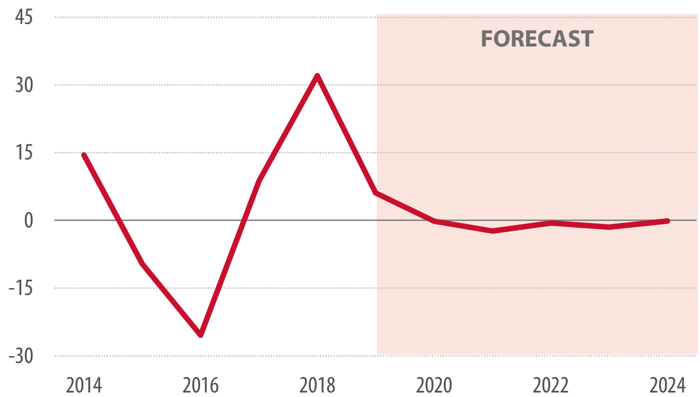
Source: GLJ Publications, Corporate Economics.

Asphalt: Carbon taxes have weighed heavily on asphalt prices recently. Carbon taxes have increased prices in Canada by about $140 per tonne over the past few years. Carbon taxes are expected to be the one significant source of changes in asphalt prices over the forecast horizon. Asphalt is 95 per cent aggregates and five per cent petroleum products, but there are significant emissions from the refining of asphalt and from installation (the heating of asphalt mix takes place before installation). Should federal carbon taxes be imposed in Alberta, the price of Asphalt could rise from $830 per tonne today to about $1,100 per tonne in

2022. For comparison, to re-do a typical single-family, two-car driveway in Calgary would take about 0.75 tonnes of asphalt while a similar space of roadway would double that (double thickness).

Asphalt Price Inflation

(per cent)

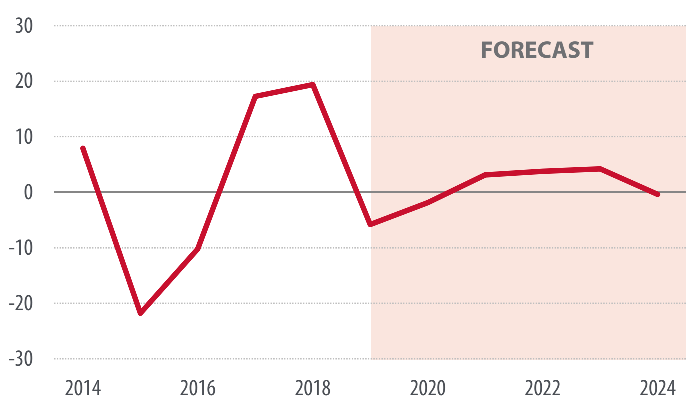


Source: Statistics Canada, Corporate Economics.

Diesel: The May 2019 elimination of carbon taxes in Alberta led to a price reduction. Prices have dropped from $1.262 (2018) to an average of $1.19 (first half of 2019). Permanent elimination of the carbon tax would lower prices to about $1 later in the forecast period. The base forecast assumes a federal carbon tax in the diesel price. As a result, prices should average $1.20 in 2020 before increasing to $1.30 by 2026.

Diesel Oil Price Inflation

(per cent)



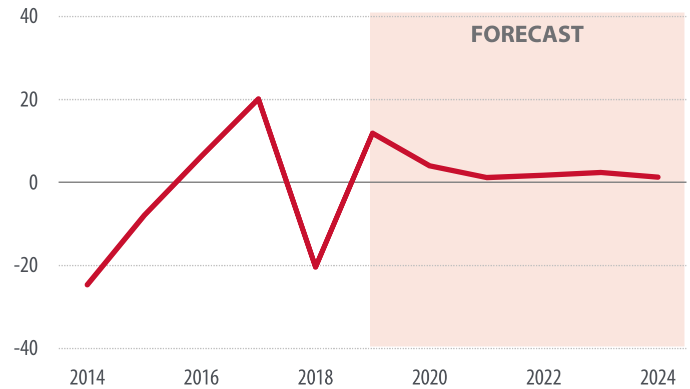
Source: Statistics Canada, Corporate Economics.

Raw Materials

Rubber: The 2019 decline in natural rubber production due to unfavourable weather and tree diseases in many producing countries was offset by higher production in Thailand, Cambodia, Indonesia and the Philippines. Demand for rubber in China is up this year, by less than three per cent – significantly lower than expected. Demand from India more than covered the gap. The outlook for rubber prices balances two factors. First, the soft demand growth from China for as long the China – U.S. trade dispute persists would put downward pressure on prices. Second, increasing demand from India, as the outlook for the Indian economy expands, puts upward pressure on prices.

Rubber Price Inflation

(per cent)

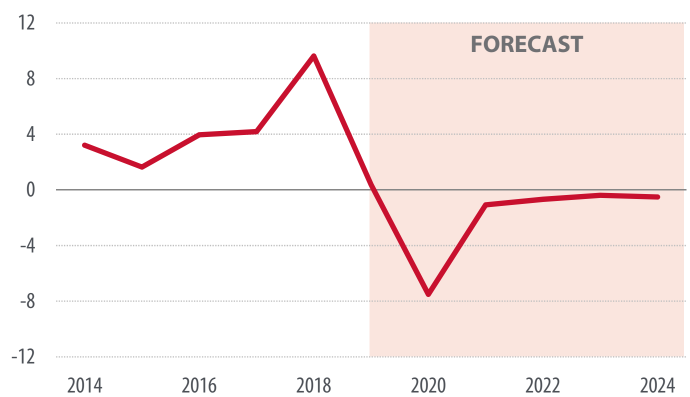


Source: Statistics Canada, Corporate Economics.

Wood: Price spikes for softwood lumber in 2018 are attributable to expectations of increased demand for lumber due to advancing markets in the U.S. as well as Toronto and Vancouver. In 2019, housing activity in those markets cooled. After 2019, only modest price increases that do not keep pace with inflation should occur. There are two potential risks to the base case. First, the Bank of Canada could lower rates significantly lowering the qualifying rate for mortgages and putting upward pressure on prices in the short-term. Second, a new softwood lumber agreement between the U.S. and Canada could raise domestic prices at the end of the forecast period. Price increases would occur because many mills in British Columbia have temporarily reduced their production capacity or shut down. Four mills have closed so far in 2019, and some 4,000 forestry workers in 27 communities have lost their jobs this year. Reopening shuttered mills and expanding capacity would take a while to complete.

Wood Price Inflation

(per cent)

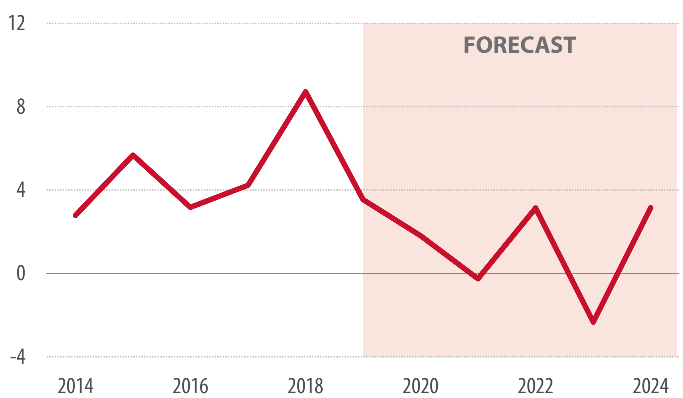


Source: Statistics Canada, Corporate Economics.

Metals and Minerals

Steel: U.S. imports of steel have dropped by about 10 per cent this year, but domestic production of steel is down further. It would ordinarily suggest expanded export opportunities for Canada. The Canadian steel industry has significant extra capacity to meet domestic and external needs but is vulnerable to a growing wave of protectionism. In 2018, steel prices were up marginally in Canada due to increased anti-dumping surveillance by Canadian officials. The average price for 2019 is expected to be higher than the 2018 average. The movement away from free trade toward protectionism will put downward pressure on external demand and prices.

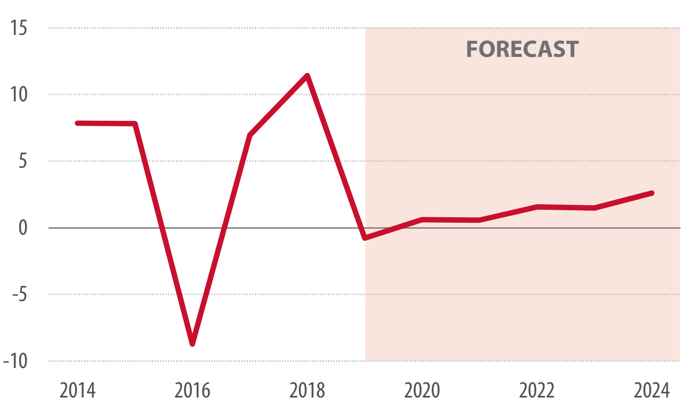
Iron and Steel Price Inflation
(*per cent*)



Source: Statistics Canada, Corporate Economics.

Aluminum: The outlook for Canadian aluminum prices is for price changes in line with U.S. demand. Demand for Canadian aluminum is expected to be robust to protectionism and tariffs.

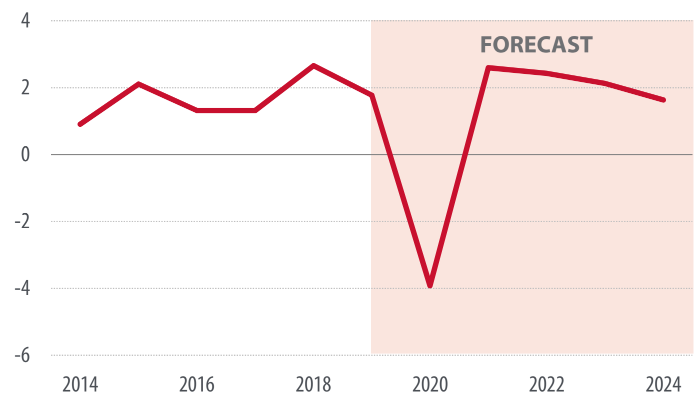
Aluminum Price Inflation
(*per cent*)



Source: Statistics Canada, Corporate Economics.

Automotive Parts: Mexico has two relative advantages over Canada in the automotive parts market – lower wages and a climate that permits lower heating costs for manufacturing plants. It has led to the migration of manufacturing from Canada to Mexico, especially after natural gas prices increased sharply a decade ago. Consequently, parts prices are driven by external factors like exchange rate differences and trade agreements. Due to anticipated exchange rate stability and eventual resolution of outstanding trade agreements, the outlook is modest price increases during the forecast period. The 2020 decline assumes CUSMA ratification in that year.

Vehicle Parts Price Inflation
(*per cent*)



Source: Statistics Canada, Corporate Economics.

Consumer Prices

Consumer Price Inflation in the Calgary Economic Region

Increases in the cost of food and shelter have been the most significant source of inflation in 2019. Prices of agricultural commodities and those commodities (e.g. wood, steel) used in construction have strengthened. They have been an essential factor in making finished food and shelter products more expensive. Transportation costs have had less of an impact due to the elimination of the provincial carbon tax in May 2019. After a 2.4 per cent increase in 2018, the expectation is a moderate annual price change for consumer goods of 1.5 per cent for 2019.

Four forces are expected to contribute to the forecast path for consumer inflation of below two per cent. Transportation costs would be the primary source of inflation because the federal government is expected to introduce a federal carbon tax in 2020 with the tax rate escalating through to 2022. Three sources of inflation would be stable. First, shelter costs would be stable because lower local housing and rental costs would offset expected increases to heating costs. Second, a relatively stable Canadian dollar relative to the U.S. dollar should keep prices for imported consumer goods and services steady. Third, only minor adjustments to the Bank of Canada 's overnight rate would occur for most of the forecast period because domestic interest rates are already low, and the Bank of Canada is wary of rate reductions.

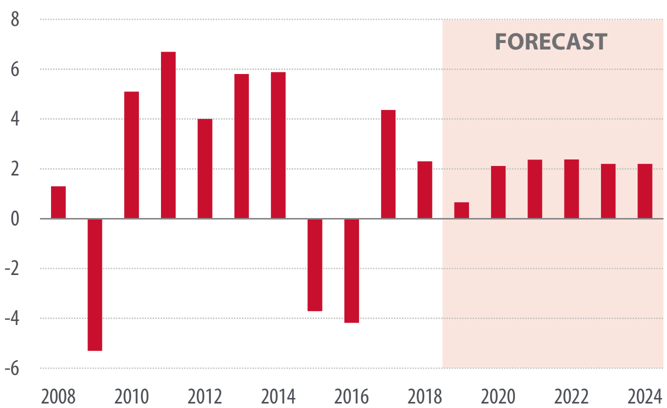
Assumptions

Assumptions: Economic Conditions in Alberta

Alberta Economic Growth

The energy industry accounts for about 30 per cent of Alberta's GDP. The energy commodity cycle and other developments in the industry have a tremendous effect on variations in Alberta's economic growth. Alberta's economic growth slowed late last year, due to a slide in oil prices and a record high discount on WCS. 2019 growth has been sluggish due to mandatory production cuts and continued broader market access issues for Alberta resources. The Alberta government has extended its oil curtailment program to December 2020, citing a lack of pipeline capacity. On a positive note, the curtailment program has helped to narrow the WCS-WTI spread. On a negative note, output curtailment is expected to limit investment and restrict GDP growth in the near term. Alberta's economy is expected to slow to 0.7 per cent in 2019 from 2.3 per cent in 2018, before recovering in 2020.

Gross Domestic Product Growth Rate
(per cent)



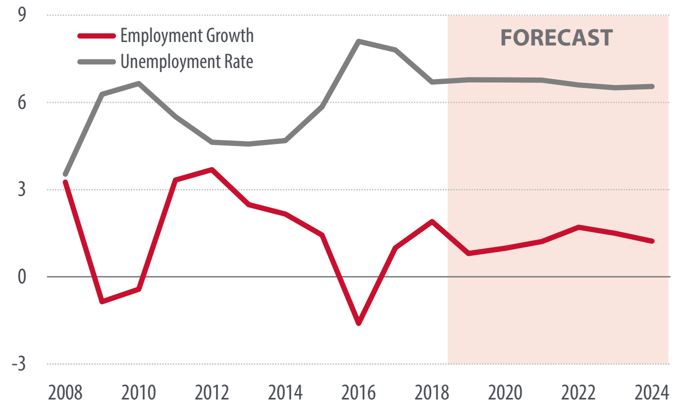
Source: Statistics Canada, Stokes Economics, Conference Board of Canada, Corporate Economics.

Population Growth and The Labour Market

Alberta's population is expected to continue to increase and support labour force growth. The drivers are robust natural increase and improving net migration. Alberta's population growth is projected at 1.6 per cent for 2019, in line with lower economic growth, before increasing its pace to average 1.7 per cent for the forecast period.

The province gained over 42,000 jobs in 2018, led by full-time positions in the private sector. Unfortunately, the CER received a less than proportionate share of the gains. The unemployment rate went down to 6.7 per cent from the 2016 peak at 8.1 per cent. The annual change in employment insurance beneficiaries dropped 26 per cent. Fast forward to 2019, and the pace of job growth has decelerated and is expected to lead to a slight increase in the unemployment rate to 6.8 per cent. After the first eight months of 2019, Alberta gained about 9,900 jobs. Unlike last year, the CER has received a more than proportionate share of the gains.

Labour Market
(per cent)



Source: Statistics Canada, Corporate Economics.

Alberta has been unable to keep up with the 1.9 per cent 2018 employment growth. Alberta's 2018 rate of job growth was higher than most provinces and the 1.3 per cent national average. In 2019, job growth is expected to slow down to 1.3 per cent, due to lower oil and gas industry investment intentions and weakness in the construction industry. Beyond 2019, the labour market would improve slightly bringing the unemployment rate down to about 6.5 per cent at the end of the forecast period. The gradual improvement in unemployment is expected to be accompanied by steady increases in real wages.

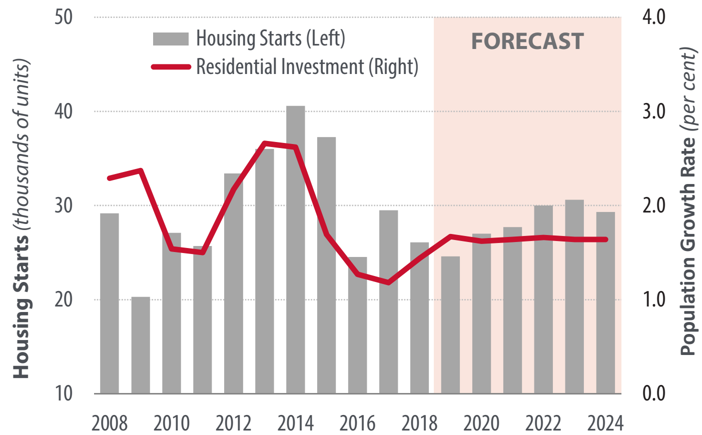
The Growth in Residential and Non-Residential Business Investment

The Alberta housing market has had a surplus of residential supply for some time. It is due to the after-effects of stricter federal mortgage policies introduced in January 2018 and concerns over continued interest rate increases. Going forward, slow but steady provincial population growth, wage growth, and the fall 2019 introduction of the First-Time Home Buyer Incentive by the federal government should help boost residential home sales.

Residential stocks remain persistently elevated in the province, with continued home price depreciation in Alberta. It would impact future residential investment activity. Housing starts already slowed markedly across most regions in the province, from 29,500 units in 2017 to 26,100 units in 2018. In 2019, housing starts are expected to fall further to about 24,600 units due to weakness in the residential sector, particularly high-rise condominiums in Calgary and Edmonton.

Assumptions

Housing Starts and Population Growth



Source: Statistics Canada, Alberta Treasury Board and Finance, Stokes Economics, Corporate Economics.

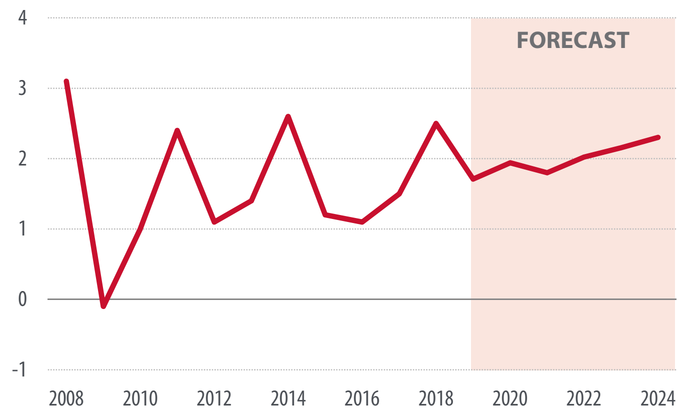
Non-residential business investment is expected to be limited in oil and gas, as external market access issues continue to beset exports of energy from Alberta. Capital expenditure plans for the oil and gas sector are unlikely to exhibit notable increases until there is more certainty on Alberta's pipeline developments and an end in sight to provincial production curtailments. Significant non-residential investments outside of oil and gas include Inter Pipeline's $3.5 billion Heartland petrochemical complex that is scheduled to come online in 2021 and the gradual replacement of retiring coal-fired power generation plants with more economical natural gas-fired generators.

Alberta Consumer Price Index (CPI) Inflation

Following the 2018 annual inflation rate of 2.5 per cent, Alberta consumer prices increased by 1.8 per cent in the first half of 2019. Significant drivers were higher costs for food, shelter and transportation. As expected in the Spring 2019 outlook, three one-time influences have dissipated, limiting price growth. First, many BOC rate increases stopped in Fall 2018. Second, the rollout of minimum wage increases that added costs to restaurants, retail, and housekeeping services got completed in 2018. Third, the effect of the introduction of the price of recreational cannabis on the index has expired. Later in the forecast period, with excess capacity expected in the province, consumer price inflation is expected to remain below 2.0 per cent until 2022.

Consumer Price Inflation

(per cent)

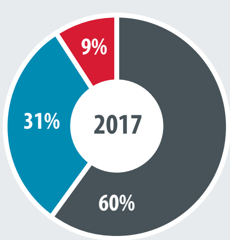


Source: Statistics Canada, Corporate Economics.

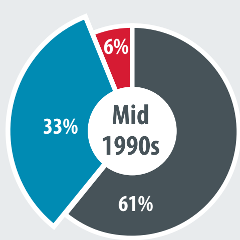
A Case of Fiscal Imbalance: The Calgary Experience (1981 to 2017)

Where Does Taxpayer Revenue from Calgarians Go?

Distribution of Taxes from Calgary Households to:

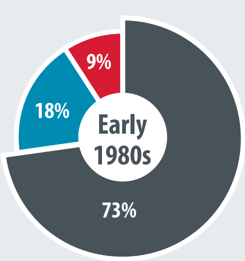


The **latest** distribution of total government tax revenue from Calgarians to the three orders of government is for 2017.



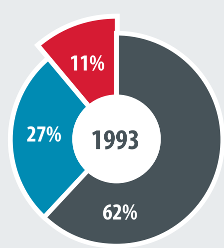
Government of Alberta

Alberta experienced its highest Real Gross Domestic Product growth in 1997 of 7.9 per cent. This translated to an increase in revenues generated from income taxes among others.



Government of Canada

Before the oil price crash in the early 80s, the **Federal Government** received as much as 73 per cent of the share of revenue from Calgarians to the three orders of government.

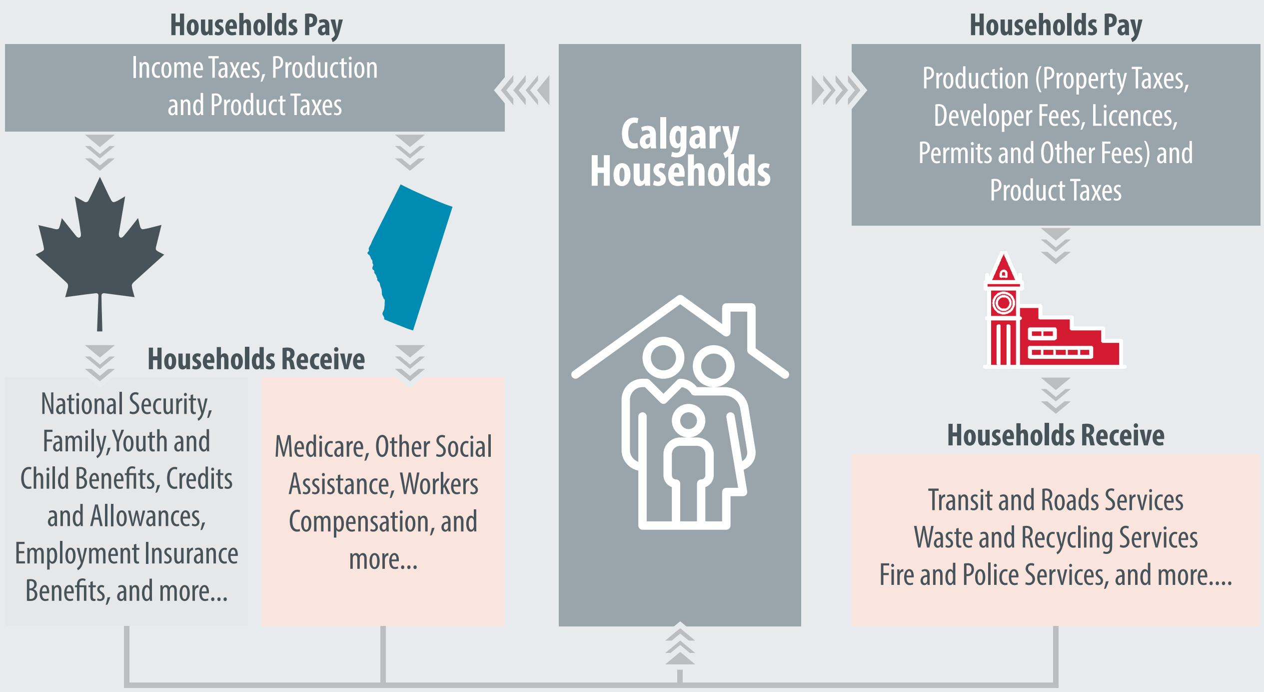


The City of Calgary

In 1993, **The City of Calgary** had its highest residential and non-residential property tax rate. It resulted in the highest tax share received.

(continued from page 22) A Case of Fiscal Imbalance: The Calgary Experience (1981 to 2017)

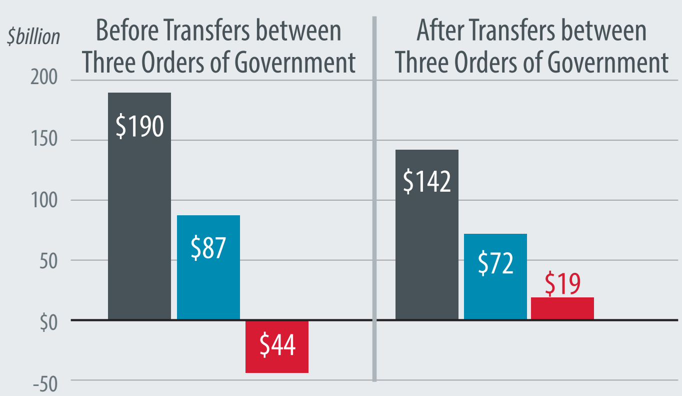
Do Calgary Households Give More or Less Than They Receive Over Time?*

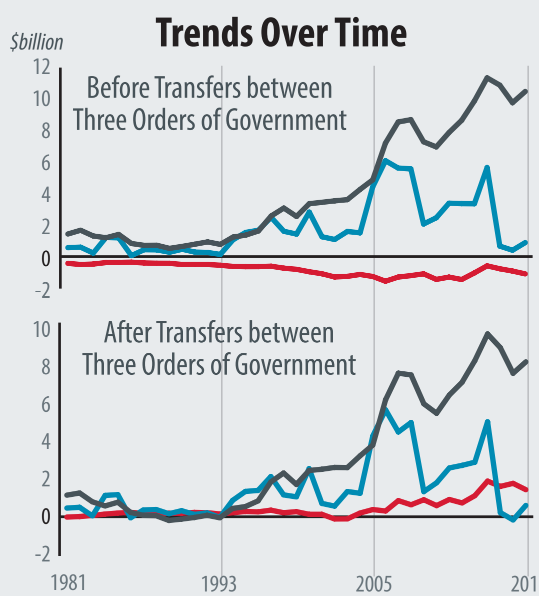


The net financial contribution by Calgarians to the orders of government is defined as the difference between total revenue and current expenditures, plus fixed capital consumption net of net capital spending.

Key Finding: Calgary households made positive net financial contributions to the provincial and federal governments, but made negative contributions to the Calgary local government.

Distribution of $233B in Net Financial Contributions from 1981 to 2017 (2018 dollars)





Data used for comparison is only available from 1981.

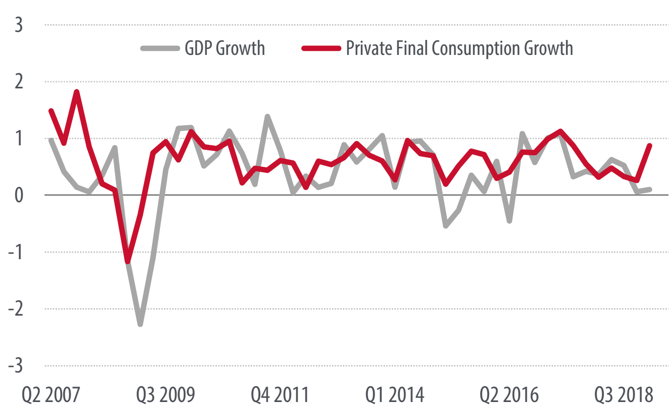
Assumptions: Economic Conditions in Canada

The Pace of Job Creation and Canadian Economic Growth

The Canadian economy had a weak start to the year, with real GDP growth at an annualized rate of 0.4 per cent in Q1 2019 before rebounding to 3.0 per cent in Q2 2019. Q1 declines in residential investment and exports turned around sharply in Q2. Because of the weak start, the annual average GDP growth in Canada is expected to be 1.4 per cent in 2019. Real GDP growth continues to decelerate from 3.0 per cent in 2017 and 1.8 per cent in 2018.

Canadian job creation continues to accelerate. The number of jobs added in the initial eight months of 2019 equals that for all of 2018. Because the labour force participation rate is stable at 67 per cent, the unemployment rate remains at a 40-year low. Better bargaining power for workers in wage negotiations has led to significant wage inflation at 4.5 per cent from July 2018 to July 2019, up from 2.0 per cent from July 2017 to July 2018.

Canada GDP and Private Final Consumption Growth
(Q2 2007 - Q1 2019, per cent)



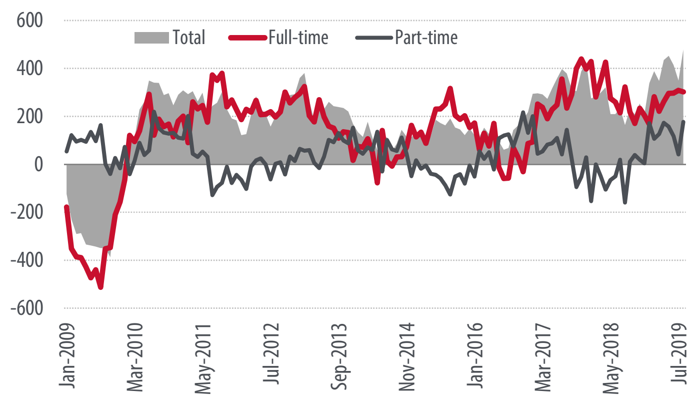
Source: Federal Reserve Bank of St. Louis, Corporate Economics.

The outlook for consumer spending is positive, but the housing market and residential investment (e.g. Toronto and Vancouver) are expected to cool into next year. Newly elected conservative provincial governments in Ontario and Alberta are expected to cut spending in their upcoming budgets, so government spending is expected to slow down. The contribution of net exports to growth is expected to be weak for two significant reasons. First, the Alberta government's crude oil curtailment program will reduce mineral fuel exports in 2019 and 2020. Second, the closure of an Ontario auto plant and weak U.S. demand will cut the industry's contribution to growth next year. The real GDP growth is expected to be 1.8 per cent from 2020 to 2023, increasing to 2.1 per cent in 2024.

Monetary Policy and Implications for the Prime Business Lending Rate

The Bank of Canada raised its overnight interest rate three times in 2018 in response to the fastest rate of real GDP growth among G7 countries in 2017. There were two motivations. First, was an attempt to cool the economy and sustain the economic expansion. Second, was an effort to normalize interest rates to secure tools to respond in the future should the risk of an economic contraction arise.

Year-over-year Job Creations in Canada
(Jan 2009 - August 2019, thousands)



Source: Statistics Canada, Corporate Economics.

The most recent interest rate change was a hike in October 2018. In the short-term, the Bank of Canada is expected to shift away from interest rate increases; there were three last year. The primary driver is because international trade conditions have worsened. As a result, the outlook for global growth outlook is much lower. The base case forecast is that the Bank of Canada would be patient and maintain the current level of the overnight rate for the next few years.

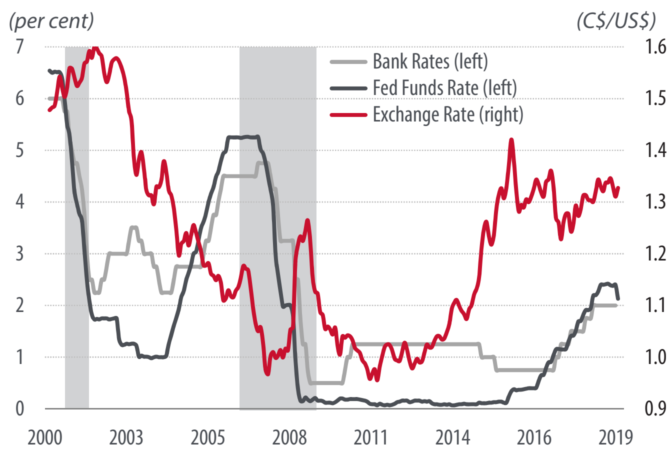
Trade to drive the Evolution of U.S. and Canada Exchange Rate

The Canadian dollar has been weak relative to the U.S. dollar for the past few years – a direct result of low crude oil prices. From 2013 to 2015, there was a rapid depreciation of the loonie from US$0.97 to US$0.78 per CAD$. Typically, a weak Canadian dollar combined with strong U.S. economy should increase economic activity in Canada as the U.S. is the largest trade partner and export market for Canadian goods. The lift for exports has not occurred. Instead, a weak dollar has

translated into higher prices for imports, which puts upward pressures on the overall consumer price inflation in Canada.

Because the expectation is for stability in WTI oil prices at around US$60 per barrel, the base case forecast is a stable Canadian dollar. For the duration of the forecast period, the exchange rate should average about US$0.77 per CAD$. Exchange rate stability would support trade, as trading partners benefit from increased price certainty.

Canada-U.S. Currency Exchange Rate vs Central Bank Policy Rates
(July 2000 - August 2019)



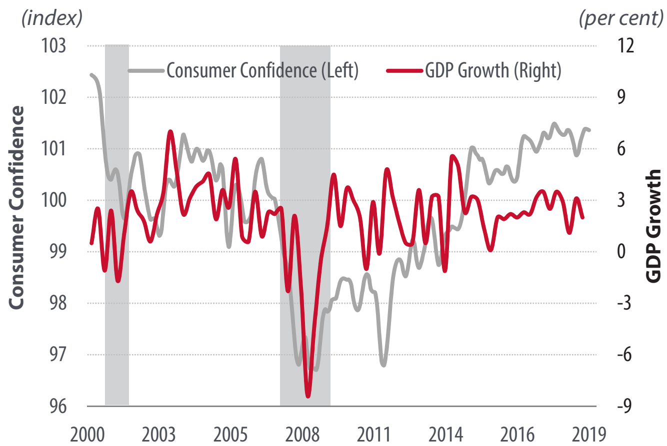
Note: Shaded areas indicate recession
Source: Federal Reserve Bank of St. Louis, Corporate Economics.

Assumptions: The United States Economy

The Record-Breaking Path of U.S. Real GDP Growth

2019 U.S. real GDP growth rate forecast is 2.5 per cent. It is a remarkable pace of growth after a record stretch of continued economic growth. Beginning July 2019, the U.S. entered 121 months of continuous real GDP growth, breaking the previous record of 120 months from March 1991 to March 2001.

U.S. GDP Growth and Consumer Confidence
(2000-2019)



Note: Shaded areas indicate recession
Source: Federal Reserve Bank of St. Louis, Corporate Economics.

Given the longer than average duration of the business cycle, it is no surprise that a Bloomberg monthly survey of economists increased the likelihood of a U.S. recession to 35 per cent in August 2019. The base case forecast is that there would be no U.S. recession, but a deceleration to an average growth rate below two per cent between 2020 and 2024. The significant risk to the growth forecast is that the U.S. economy is not insulated from external influences, particularly slowing global growth and the impact of escalating trade tensions.

Monetary Policy will lead the way in sustaining the Expansion

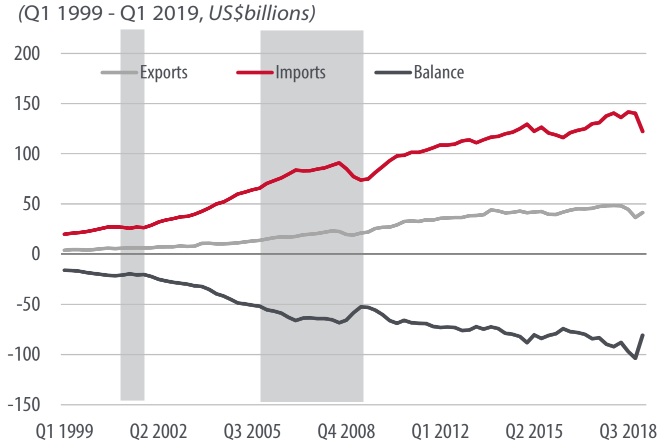
The U.S. unemployment rate has been lower for only five of the last 73 years. The July 2019 average hourly earnings of all private-sector employees increased by 3.1 per cent from July 2018. Fiscal and monetary policy authorities are expected to sustain solid domestic fundamentals through timely interventions.

Given the size of the current budget deficits, monetary policy is

expected to take the lead. A good example is the July 31, 2019 decision of the Federal Open Market Committee to lower the federal funds rate by 0.25 percentage points to 2.00 from 2.25 per cent. It was the first rate cut since the Great Recession in 2008-09. It reversed the path the Committee set in 2018 to start bringing the rate up to neutral levels.

Two weeks after the Fed rate cut, the yield on U.S. 10 year Treasury notes dipped below two year Treasury notes. It was the first occurrence of this yield curve inversion since the Great Recession, and it typically signals an upcoming recession within ten months to three years. A flight-to-safety likely motivated the inversion amid a deteriorating global economic environment. Because external risks persist, the Fed is expected to provide more cuts in the short-term to sustain the expansion and prevent a recession.

U.S.-China Trade Balance on Goods and Services
(Q1 1999 - Q1 2019, US$billions)



Note: Shaded areas indicate recession
Source: Federal Reserve Bank of St. Louis, Corporate Economics.

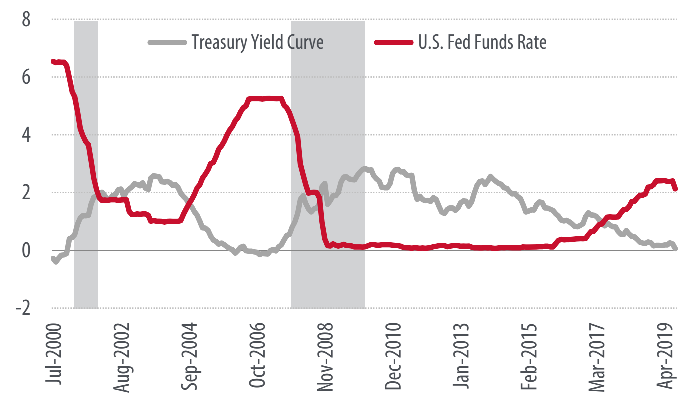
Implications arising from changes to U.S. Trade Policy

The rapid 500 per cent growth in the U.S. trade deficit with China from US$16 billion in Q1 1999 to US$96 billion in Q3 2018 led to a trade policy review. The U.S. government has used tariffs and the threat of tariffs to achieve the objective of lowering the U.S. trade deficit.

A critical risk identified in the Spring 2019 Outlook was that the pause to tariff hikes agreed to by China and the United States at the 1 December 2018 G20 meeting gets reversed. The risk has materialized. Total U.S. tariffs applied exclusively to Chinese goods increased to US$550 billion from US$225 billion in April. Similarly, Chinese tariffs to be applied solely to U.S. goods increased to US$185 billion from US$50 billion. China lodged a WTO tariff case against the U.S. before resuming the 13th round of trade talks in early September 2019.

China also responded with non-tariff tools. China allowed its currency to weaken by 10 per cent against the U.S. dollar in August. Chinese companies have also suspended purchases of agricultural products from U.S. exporters. Canada is in the crossfire with Beijing banning imports of some agricultural products for Canada's role in the Meng Wanzhou extradition battle. It is a trade move by China that will harm Canada's GDP growth.

U.S. Fed Funds Rate vs Treasury Yield Curve (the 2-year to 10-year Spread)
(per cent)



Note: Shaded areas indicate recession
Source: Federal Reserve Bank of St. Louis, Corporate Economics.

Assumptions

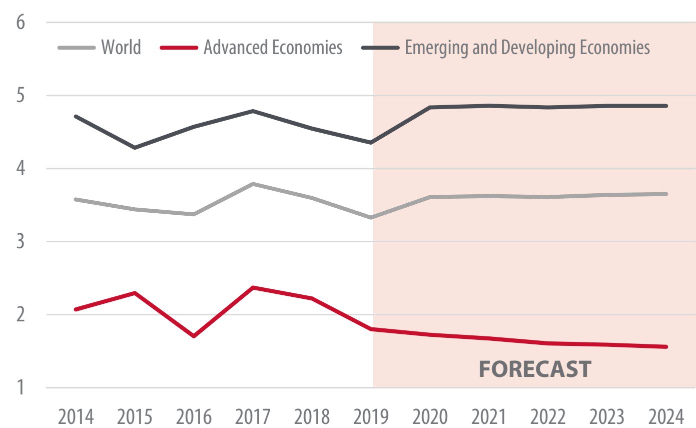
Assumptions: The World Economy

The Pace and Distribution of Real GDP Growth across World Economies

2019 global real GDP growth is expected to be 3.2 per cent, down from the 3.3 per cent expected in the Spring 2019 Outlook. 2020 global real GDP growth is expected to be 3.5 per cent, also down from 3.6 per cent. Despite the downward revisions, beyond 2020, the world economy is expected to expand at a faster rate than the 3.5 to 3.6 per cent average for 2013 to 2018. The assumption is that global and China-U.S. trade relations normalize.

Near-term, advanced economies are expected to experience real GDP growth of 1.9 per cent (2019) and 1.7 per cent (2020). The pace of growth is faster than the average for the forecast horizon (1.6 per cent), but lower than the 2.1 per cent average between 2013 and 2018. The deceleration is primarily due to an ageing population.

Gross Domestic Product Growth
(per cent)



Source: International Monetary Fund, Corporate Economics.

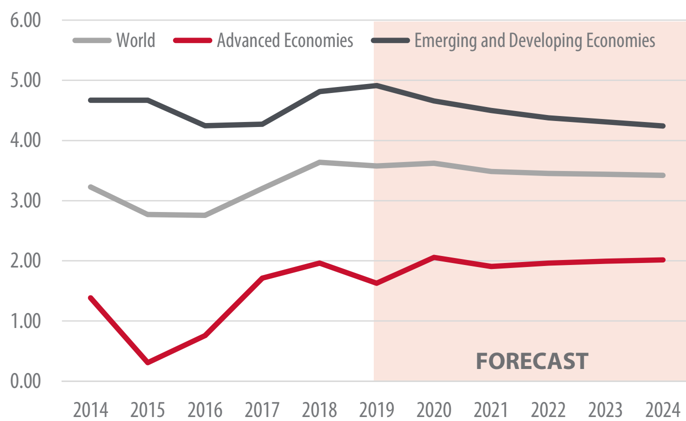
The expectation is different for developing and emerging market economies. Near-term real GDP growth rates of 4.1 per cent (2019) and 4.7 per cent (2020) would resemble the 2013 to 2018 average of 4.6 per cent, but below the 4.9 per cent average for the forecast horizon. China's Belt and Road Initiative (BRI) in developing countries and regions that need infrastructure and investment dollars should be a significant driver of economic growth.

Inflation in Low-Interest Rate Environment Globally Limits Monetary Policy

Apart from lower than previously expected global demand (captured in downward revisions to GDP), the prices for global goods and services would be affected by more considerable political uncertainty and disruption. In Germany, the 2018 change in environmental standards would continue to affect the manufacturing industry with higher prices of goods. The breakaway of the United Kingdom, through Brexit, from the European Union will restrict the availability of goods and services creating upward price pressure. Political disruption anticipated in some oil-producing countries (possibly Venezuela, Nigeria, Libya, Iraq or Iran) would elevate energy commodity prices.

These factors and others are expected to translate into higher inflation rates. Annual world inflation is expected to average 3.5 per cent between 2020 and 2024. The 2013 to 2018 average was 3.1 per cent. For the forecast horizon, the annual average rate for advanced economies is expected to accelerate to 2.0 per cent while emerging and developing economies would experience a deceleration to an annual average of 4.4 per cent.

Inflation Rates
(per cent)



Source: International Monetary Fund, Corporate Economics.

The current low-interest-rate environment makes this a challenging time for monetary authorities everywhere. It is especially true for those countries, including Canada, with high consumer debt levels that already restrain growth in consumer demand. There is little scope to provide monetary stimulus in response to economic shocks. Later in the forecast horizon, there would be a transition toward fiscal stimulus tools (tax cuts or higher spending) to combat shocks.

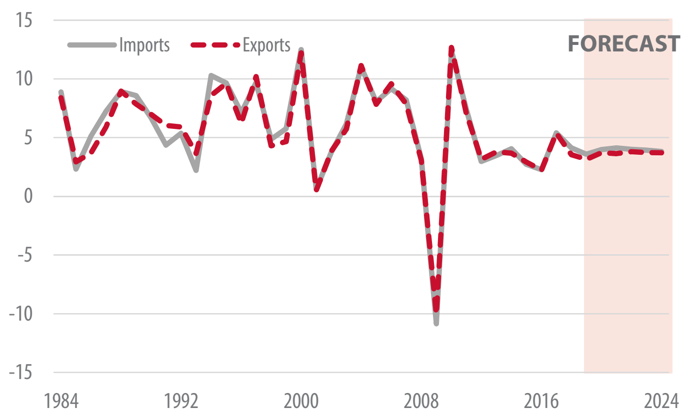
Heightened Trade Uncertainty and Effects on Global Growth

At the Nov. 30 to Dec. 1, 2018, G20 meeting in Buenos Aires, the U.S. and China agreed to pause retaliatory tariff hikes. Fast forward to fall 2019 and bilateral trade between the U.S. and China deteriorated, creating sustained trade-

specific headwinds to global growth. Threats of tariffs and retaliatory tariffs between both countries, which are the two largest economies in the world, does not bode well for global growth. The U.S. economy makes up 24 per cent of global GDP and together with China comprises 39 per cent of the global economy. Closer to home, only Mexico has ratified the Canada-United States-Mexico Agreement (CUSMA) that is expected to replace the current North American Free Trade Agreement (NAFTA).

World trade volume grew at an average rate of 3.6 per cent between 2013 and 2018. It is expected to fall to 3.3 per cent in 2019. If current trade disputes get resolved, the average rate of growth in trade volumes is expected to return to 3.8 per cent between 2020 and 2024.

World Trade Growth
(per cent)



Source: International Monetary Fund, Corporate Economics.

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 2019						BASE FORECAST					
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
ASSUMPTIONS											
World											
Real Gross Domestic Product Growth (%)	3.6	3.5	3.3	3.7	3.6	3.2	3.5	3.6	3.6	3.6	3.6
The United States											
Real Gross Domestic Product Growth (%)	2.5	2.9	1.6	2.4	2.9	2.5	1.8	1.8	2.2	1.9	1.7
Canada											
Real Gross Domestic Product Growth (%)	2.9	0.7	1.1	3.0	1.9	1.4	1.8	1.9	1.8	1.8	2.1
Prime Business Loan Rate (%)	3.0	2.8	2.7	2.9	3.6	4.0	4.0	4.0	4.0	4.2	4.4
Exchange Rate (US$ for 1C$)	0.91	0.78	0.76	0.77	0.77	0.76	0.76	0.76	0.76	0.77	0.77
Alberta											
Real Gross Domestic Product Growth (%)	5.9	-3.7	-4.2	4.4	2.3	0.7	2.1	2.4	2.4	2.2	2.2
Total Employment Growth (%)	2.2	1.4	-1.6	1.0	1.9	0.8	1.0	1.2	1.7	1.5	1.2
Unemployment Rate (%)	4.7	5.9	8.1	7.8	6.7	6.8	6.8	6.8	6.6	6.5	6.5
Housing Starts ('000 Units)	40.6	37.3	24.5	29.5	26.1	24.6	27.0	27.7	30.0	30.6	29.3
CPI - Inflation Rate (%)	2.6	1.2	1.1	1.6	2.5	1.7	1.9	1.8	2.0	2.2	2.3
Crude Oil Price - WTI (US$/bbl)	93.2	48.7	43.3	50.8	65.1	60.8	60.7	60.1	60.2	60.9	61.3
Western Canadian Select - WCS (US$/bbl)	74.5	35.1	29.5	37.6	39.6	47.1	44.2	44.1	44.9	45.8	46.2
Alberta Natural Gas Price - AECO/NIT ($/GJ)	4.3	2.6	2.0	2.3	1.5	1.5	1.8	2.2	2.4	2.6	2.8
Industrial Product Price Index (%)	2.5	-0.8	-0.2	3.1	3.9	0.1	1.6	1.9	1.8	1.7	1.7
Raw Materials Price Index (%)	1.6	-19.9	-4.6	11.0	9.3	-1.7	1.8	1.7	1.5	1.4	1.4
Alberta Average Wage Rate Increase for All Industries (%)	4.6	-3.0	-9.4	1.5	0.7	2.5	2.8	2.5	2.5	2.6	2.6
FORECAST											
Calgary Economic Region (CER)											
Real Gross Domestic Product Growth (%)*	6.4	-3.5	-2.6	4.0	2.5	1.3	2.2	3.0	2.4	2.4	2.6
Total Employment ('000 persons)**	857.1	876.1	860.8	884.3	892.4	913.5	928.6	945.3	963.3	982.3	1,000.7
Total Employment Growth (%)**	2.3	2.2	-1.7	2.7	0.9	2.4	1.7	1.8	1.9	2.0	1.9
Unemployment Rate (%)**	4.9	6.3	9.2	8.4	7.6	7.4	7.2	6.9	6.6	6.0	5.9
Calgary Census Metropolitan Area (CMA)											
Housing Starts ('000 units)	17.1	13.0	9.2	11.5	11.0	10.1	10.3	10.5	10.7	10.8	10.9
CPI - Inflation Rate (%)	3.0	1.2	1.0	1.6	2.4	1.6	1.9	1.9	2.0	2.1	1.9
Non-Residential Building Construction Inflation (%)	1.3	-0.6	-2.6	1.7	2.1	2.6	2.7	2.3	3.0	3.6	2.5

Numbers may not add up due to rounding.

* Source: Stokes Economics, Corporate Economics

** Total population, census divisions and census metropolitan areas, 2001 Census boundaries

Tables

Table 2 - Selected Indicators for City of Calgary

City of Calgary

FORECAST COMPLETED: September 2019						BASE FORECAST					
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
DEMOGRAPHY											
Total Population ('000 Persons)	1,195.2	1,230.9	1,235.2	1,246.3	1,267.3	1,285.7	1,303.6	1,322.0	1,340.7	1,360.2	1,380.4
Total Population Growth (%)	3.3	3.0	0.3	0.9	1.7	1.4	1.4	1.4	1.4	1.5	1.5
Net Migration ('000 Persons)	28.0	24.9	-6.5	1.0	11.7	9.4	10.0	10.5	10.9	11.8	12.8
Household Formation ('000 Units)	11.1	11.1	1.2	7.5	11.6	6.2	5.7	6.2	8.0	7.8	7.4
REAL ESTATE											
Residential Market											
Housing Starts ('000 units)	13.8	10.7	7.8	9.5	8.9	7.8	8.1	8.3	8.5	8.6	8.8
Calgary Average Residential MLS sale price (%)*	5.5	-2.9	2.5	0.5	-1.1	-1.6	0.0	5.1	4.0	3.7	3.5
Total Building Permits ($billions)	6.5	6.2	4.6	4.6	4.6	4.3	4.5	4.7	4.9	5.1	5.2
Non-Residential Market											
Downtown Office Vacancy Rate (%)**	5.4	10.1	18.2	22.5	24.9	22.7	20.5	19.2	18.5	15.6	14.9

Numbers may not add up due to rounding. *Source: CREB, Corporate Economics. ** Source: Altus InSite

Table 3 - Selected Commodity Prices

City of Calgary

FORECAST COMPLETED: September 2019						BASE FORECAST					
	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
CONSTRUCTION COMMODITIES											
Iron and steel products	2.8	5.7	3.2	4.2	8.7	3.5	1.8	-0.3	3.1	-2.3	3.1
Aluminum products	7.9	7.8	-8.7	7.0	11.4	-0.8	0.6	0.6	1.6	1.5	2.6
Wood	3.2	1.6	4.0	4.2	9.6	0.4	-7.5	-1.1	-0.7	-0.4	-0.5
Asphalt*	14.5	-9.6	-25.4	8.7	32.0	6.1	-0.2	-2.3	-0.6	-1.5	-0.1
OPERATIONAL COMMODITIES											
Rubber	-24.6	-7.9	6.4	20.1	-20.3	11.9	4.0	1.2	1.8	2.4	1.3
Diesel oil	7.9	-21.8	-10.2	17.3	19.4	-5.8	-1.9	3.1	3.8	4.2	-0.4
Vehicle parts	0.9	2.1	1.3	1.3	2.7	1.8	-3.9	2.6	2.4	2.1	1.6

Numbers may not add up due to rounding.
NOTE: MLS prices represent significant market differences. Apartment/Condo prices expected to decrease while house prices remain resilient.
* Based on Ontario Ministry of Transportation Asphalt Price Index

Table 4 - City of Calgary Population Projection

City of Calgary *(thousands of persons)*

FORECAST COMPLETED: September 2019		BASE FORECAST						
	2019	2020	2021	2022	2023	2024	2025	2026
Total Population (as April)	1,285.7	1,303.7	1,322.2	1,340.9	1,360.4	1,380.7	1,400.8	1,420.7
Total Population Growth Rate (April - March)	1.4	1.4	1.4	1.4	1.5	1.5	1.4	1.4
Total Net Migration (April - March)	9.6	10.0	10.5	10.9	11.8	12.8	12.6	12.7
Total Births (April - March)	15.3	15.4	15.5	15.6	15.6	15.7	15.8	15.8
Total Deaths (April - March)	6.5	7.4	7.6	7.7	7.9	8.1	8.3	8.5
Total Natural Increase (April - March)	8.8	8.0	7.9	7.8	7.7	7.6	7.4	7.3
Total Households (as April)	489.1	494.7	500.9	508.9	516.7	524.1	531.5	539.1
Total Household Formation (April - March)	6.3	5.7	6.2	8.0	7.8	7.4	7.4	7.6

Population by Cohort	2019	2020	2021	2022	2023	2024	2025	2026
0-4	79.7	79.4	79.0	78.3	77.9	77.2	77.5	77.9
5-9	80.0	79.3	78.7	78.8	79.0	79.5	79.2	78.8
10-14	74.6	76.9	79.0	80.5	80.9	80.7	80.0	79.4
15-19	70.9	70.7	71.2	72.1	74.1	76.5	78.9	81.0
20-24	78.2	78.4	78.6	78.7	78.6	78.9	79.1	79.8
25-29	98.1	96.6	94.5	93.4	93.6	94.4	95.4	96.2
30-34	113.0	113.3	114.3	113.9	113.3	113.0	112.2	110.7
35-39	110.8	115.3	118.8	121.8	123.8	124.9	125.7	127.1
40-44	98.2	101.5	105.2	109.3	114.0	119.1	124.0	127.8
45-49	91.3	93.0	94.9	96.5	98.6	101.5	105.0	108.9
50-54	83.9	83.9	84.9	87.3	90.0	92.0	93.8	95.8
55-59	83.2	83.3	82.8	81.8	80.7	79.8	79.7	80.6
60-64	72.1	74.0	75.4	76.3	76.3	76.5	76.4	75.7
65-69	52.5	55.2	58.2	61.3	64.4	66.9	68.6	69.8
70-74	37.8	40.1	42.7	44.9	46.1	47.8	50.2	53.0
75-79	24.9	25.8	26.9	28.1	30.3	32.6	34.6	36.8
80-84	17.6	17.8	18.0	18.4	19.0	19.8	20.5	21.3
85-89	11.8	11.9	11.8	11.9	12.0	12.0	12.1	12.3
90-99	6.8	6.9	7.1	7.2	7.3	7.4	7.4	7.4
100+	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Total	**1,285.7**	**1,303.7**	**1,322.2**	**1,340.9**	**1,360.4**	**1,380.7**	**1,400.8**	**1,420.7**

Youth (12-18)	85.1	86.6	89.4	91.9	94.3	96.2	97.3	97.9
Primary School Age 6-17	180.7	182.8	185.1	187.1	189.3	190.9	192.7	192.8
Working Age 15-65	899.7	910.1	920.5	931.2	943.1	956.7	970.2	983.6
Seniors 65+	151.6	158.0	165.0	172.1	179.4	186.7	193.9	201.0
Super Seniors 85+	18.9	19.1	19.2	19.4	19.6	19.7	19.9	20.0
Female Super Seniors 85+	12.0	12.0	12.1	12.2	12.3	12.4	12.5	12.6

Numbers may not add up due to rounding.

Table 5 - Calgary Economic Region (CER) Population Projection

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

FORECAST COMPLETED: September 2019		BASE FORECAST						
	2019 (estimate)	2020	2021	2022	2023	2024	2025	2026
Total Population (as April)	1,585.9	1,614.9	1,641.0	1,662.9	1,689.9	1,722.2	1,749.5	1,771.4
Total Population Growth Rate (April - March)	1.8	1.8	1.6	1.3	1.6	1.9	1.6	1.3
Total Net Migration (April - March)	16.3	17.1	13.9	14.9	20.6	21.1	16.3	17.0
Total Births (April - March)	20.8	20.9	20.8	20.7	20.6	20.7	20.7	20.6
Total Deaths (April - March)	9.9	10.3	10.7	11.1	11.5	12.0	12.5	12.9
Total Natural Increase (April - March)	10.9	10.5	10.1	9.6	9.1	8.7	8.3	7.8
Total Households (as April)	609.9	621.1	631.2	639.6	650.0	662.4	672.9	681.3
Total Household Formation (April - March)	10.5	11.2	10.0	8.4	10.4	12.4	10.5	8.5

Population by Cohort	2019 (estimate)	2020	2021	2022	2023	2024	2025	2026
0-4	98.5	100.2	101.8	102.7	104.0	105.0	105.0	104.7
5-9	100.7	99.7	98.8	98.8	99.0	99.5	101.2	102.8
10-14	95.2	98.9	101.9	103.6	104.4	104.6	103.7	102.5
15-19	89.8	90.9	92.3	94.0	97.4	101.5	105.2	108.1
20-24	95.3	96.8	97.7	98.0	98.8	100.9	102.1	103.0
25-29	116.1	114.1	111.1	108.7	108.7	110.6	112.1	112.7
30-34	133.8	133.7	133.7	131.7	130.0	129.2	127.2	124.0
35-39	133.6	137.7	140.4	142.0	143.0	143.2	143.0	142.9
40-44	120.1	123.7	127.2	130.7	135.0	139.9	144.0	146.6
45-49	112.2	114.3	116.6	118.1	120.3	123.5	127.0	130.5
50-54	103.7	103.5	104.6	107.3	110.6	113.2	115.2	117.4
55-59	104.1	105.4	105.5	104.6	103.6	102.7	102.5	103.7
60-64	91.1	94.2	96.8	98.9	100.1	101.5	102.8	102.8
65-69	67.1	70.9	75.1	79.2	83.7	87.6	90.5	93.0
70-74	48.7	52.1	55.5	58.7	60.4	63.0	66.5	70.3
75-79	31.5	33.2	35.0	37.0	40.5	43.7	46.7	49.6
80-84	21.6	22.2	22.8	23.6	24.7	26.2	27.5	29.0
85-89	14.3	14.6	14.7	14.9	15.2	15.4	15.9	16.3
90-99	8.0	8.7	9.2	9.6	10.0	10.6	10.8	10.9
100+	0.3	0.4	0.4	0.4	0.5	0.5	0.6	0.6
Total	**1,585.9**	**1,614.9**	**1,641.0**	**1,662.9**	**1,689.9**	**1,722.2**	**1,749.5**	**1,771.4**

Numbers may not add up due to rounding.

Glossary

Advanced economies

- Currently composed of 31 developed countries: Australia, Austria, Belgium, Canada, Cyprus, Denmark, Finland, France, Germany, Greece, Hong Kong SAR, Iceland, Ireland, Israel, Italy, Japan, Korea, Luxembourg, Malta, Netherlands, New Zealand, Norway, Portugal, Singapore, Slovenia, Spain, Sweden, Switzerland, Taiwan Province of China, 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.

Aggregate demand

- The sum of consumer, government and business spending and net exports.

Baby-Boomer Generation (BBG)

- Those born between January 1st 1946 and December 31st 1964.

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: 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 (Sarcee 145) (Indian reserve), Turner Valley (Town).

Canada-United States-Mexico Agreement (CUSMA)

- Is the new trade deal reached among the U.S., Mexico, and Canada on September 30th, 2018, after more than a year of the renegotiations of the North American Free Trade Agreement (NAFTA) started in August 2017.

Census metropolitan area (CMA)

- 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.

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.

Core inflation rate

- Rate of inflation in the Consumer Price Index excluding food and energy.

Glossary

Countercyclical

- Moving in a different direction from the normal, or current, cycle or trend. Government spending, for example, would fall during times of general prosperity (more people eat out) and rises during economic contraction (more people eat at home).

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.

Emerging economies

- This is a reference to countries that, due to growth performance, are considered in transition between developing and developed countries. The most important emerging economies are Brazil, China, India and Russia, sometimes referred to as BRIC.

Employment rate

- The number of employed persons expressed as a percentage of the working age population.

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.

Goods-producing sector

- Includes agriculture, forestry, fishing, mining, oil and gas extraction, utilities (electric, gas and power), construction and manufacturing.

Great recession

- The Great Recession was a widespread period of economic decline during the late 2000s where most of the world's economies, particularly those of North America, Europe and Japan, fell into a recession. For Canada and the United States, the recession was most acute in 2008 and 2009. Both countries experienced multiple quarters of consecutive negative GDP growth. In response to the Great Recession, many governments around the world introduced multi-billion dollar economic stimulus plans and engaged in numerous interest rate cuts.

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.

Home market value

- An indicator to compare houses across the country. This indicator is based on an 1,800 sq. ft., seven-room, three-bedroom, two-bath home in a suburban community where middle income Canadian families of four reside.

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

Glossary

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.

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.

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.

Inflation rate

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

In-migrants

- Persons currently living within a census metropolitan area (CMA), that five years earlier lived elsewhere in Canada or abroad.

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.

Labour force participation rate

- Is the ratio of the labour force to working age population.

Migrants

- Persons who lived in a different census subdivision (CSD) than the one they lived in five years earlier (internal migrants) or who lived outside Canada (external migrants or immigrants).

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.

Tariff

- A tariff is a tax imposed on imported goods and services from foreign countries.

Recession

- A period in which the economy experiences two consecutive quarters of gross domestic product decreases. During this temporary period there is a decline in industrial production and trade.

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.

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.

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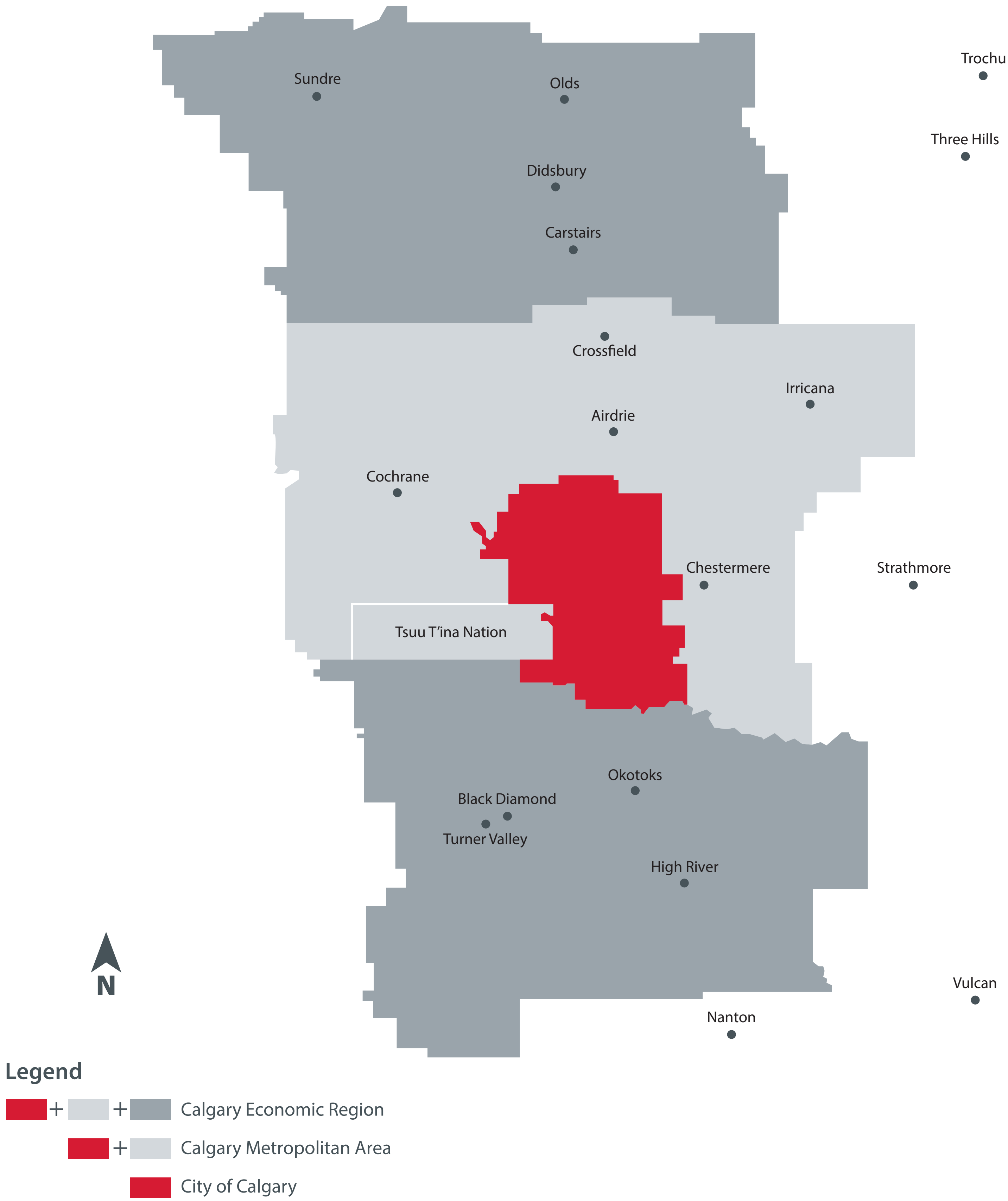
Calgary Economic Region Map



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:
Statistics Canada, CMHC, CREA, CREB, Bank of Canada, Conference Board of Canada, GLJ Energy Publications, The City of Calgary, Stokes Economics, U.S. Federal Reserve Bank of St. Louis (FRED), U.S. Energy Information Administration (EIA), International Money Fund (World Economy Outlook), and others.