



## Retail Petroleum Prices Reached an All-time High this past Quarter upon High Crude Prices and Robust Refining Margins

*Canadian crude prices reached a seven-year high in October and, along with strong refining margins for both gasoline and diesel, led to record-high retail prices in the fourth quarter.*

Several planned and unplanned outages in the fourth quarter saw crude oil supply fall short of demand and crude oil markets tighten. The effects of Hurricane Ida in the previous quarter severely affected North American crude oil production in the Gulf of Mexico, leading to lower crude oil supplies at the start of the fourth quarter. Also, the Organization of Petroleum Exporting Countries and allied countries (OPEC+) continued to set crude oil monthly curtailment levels despite increasing global crude oil demand. In addition, a natural gas shortage in Europe and subsequent price spike led many utilities to switch to cheaper oil by-products. In late November, Crude oil markets received a mild jolt as oil prices dropped over \$14 a barrel upon discovering the Omicron variant and its potential impact on crude oil demand. However, the negative price impact was short-lived, as it soon became apparent that the variant produced milder cases, and crude oil prices resumed an upward trajectory during the remainder of the quarter.

During the fourth quarter, retail gasoline prices also found strength, reaching an all-time high in Canada in October. Contrary to normal cyclical patterns, the demand for gasoline in North America remained unseasonably strong throughout the fourth quarter. With gasoline inventories already at the low end at the beginning of the quarter from the heavy hurricane season and fall refinery maintenance limiting gasoline production, gasoline refining margins remained elevated throughout the fourth quarter. Canadian gasoline refining margins in the fourth quarter averaged 6.5 cents per litre above the previous five-year average, and along with higher crude prices led wholesale gasoline prices to a thirteen-year high in October.

Similar to gasoline, lower production in the previous quarter from the heavy hurricane season led to lower North American distillate supplies heading into the fourth quarter, a time when distillate demand usually picks up from increased agricultural and home heating use. Along with strengthened demand for diesel fuel in the trucking sector from increased shipping activity, Canadian diesel refining margins reached a two-year high by December. Strong diesel refining margins coupled with rising crude prices led retail diesel prices to reach an all-time high in November.

Crude prices experienced extreme volatility in the fourth quarter primarily upon worries of the effect on crude oil demand from the Omicron COVID-19 variant's spread, and as crude oil demand outpaced production. The price of Brent crude (a global benchmark) reached as high as 86.40 \$US/BBL in October, then fell to as low as 68.87 \$US/BBL in early December, before ending the quarter at 77.78 \$US/BBL, 1.1

Figure 1: Canadian Average Regular Gasoline and Component Prices

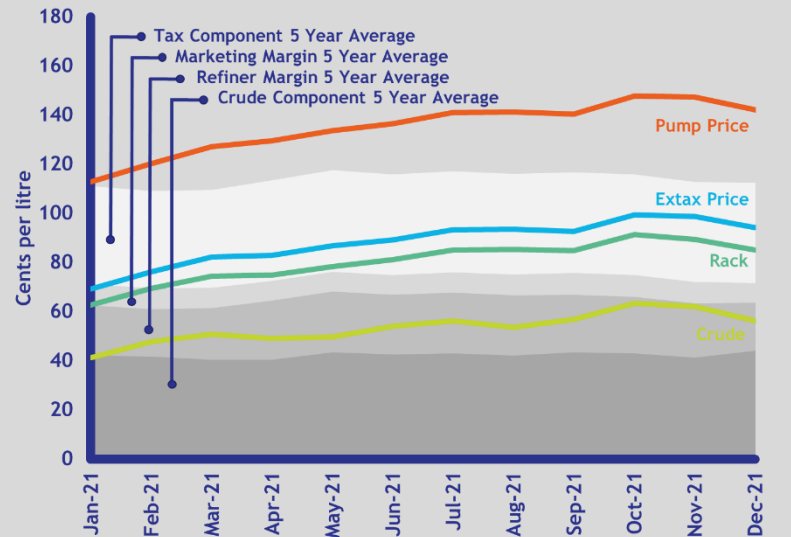
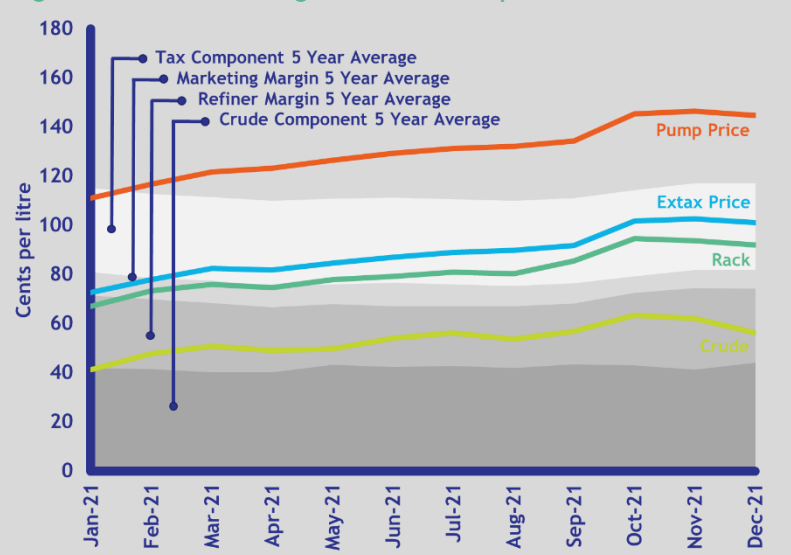


Figure 2: Canadian Average Diesel and Component Prices





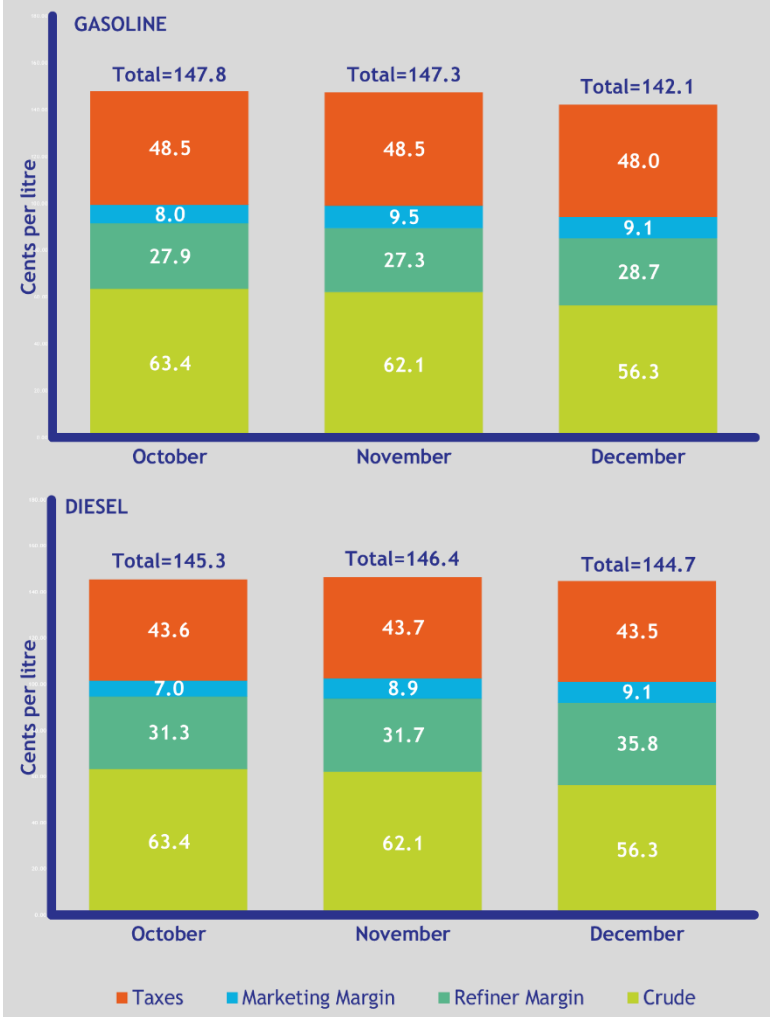
percent below the end of the previous quarter. Similarly, the WTI benchmark reached as high as 84.65 \$US/BBL in October, fell to 65.57 \$US/BBL in early December, before ending the quarter at 75.21 \$US/BBL, 0.5 percent above the previous quarter's finish. Brent's premium to WTI averaged at 2.59 \$US/BBL, just 0.10 \$US/BBL lower than the previous quarter, but reached as high as 4.57 \$US/BBL in November when crude prices experienced one of the largest one-day declines in the last two decades upon the announcement of the discovery of the Omicron COVID-19 variant.

The heavy-light crude oil price spread between WTI and Western Canadian Select (WCS) widened in the fourth quarter, as WCS weakened by 5.75 \$UB/BBL to WTI by the quarter's end. Although October's opening of Enbridge's newly expanded Line 3 crude export pipeline from Alberta was expected to ease the differential by alleviating pipeline capacity restraints, the demand for heavy crude slates fell in the fourth quarter, and WCS weakened. A significant increase in natural gas prices increased the cost to refine heavier crude into petroleum products; thus, producers favoured light and sweet blends of crude over heavier blends.

## Gasoline and Diesel Market Overview

As demand outpaced production in the fourth quarter for both crude oil and gasoline, crude prices reached a seven-year high and wholesale gasoline prices a thirteen-year high, sending Canadian retail prices to an all-time high in October. However, retail prices found temporary relief over the quarter as crude prices declined due to demand fears arising from the spread of the Omicron COVID-19 variant despite refining margins remaining elevated.

**Figure 3: Canadian Average Gasoline and Diesel Price Components for 4<sup>th</sup> Quarter 2021**



Regionally, all parts of the country experienced declining wholesale gasoline prices as crude prices fell over the quarter. However, the West Coast's price drop was less pronounced as the region experienced extreme rainfall in November, taking both pipeline and rail supply routes offline, and limiting the amount of petroleum product supply to the area. Some areas of British Columbia were subjected to temporary gasoline fill-up restrictions for non-essential vehicles.

Wholesale diesel prices in Canada reached a seven-year high in October. In November, wholesale diesel prices remained high, and diesel marketing margins expanded, pushing retail diesel prices to an all-time high. Diesel refining margins continued to expand over the quarter, reaching a two-year high in December, as home heating fuel and trucking demand increased.

A differential between West Coast wholesale diesel prices and the rest of Canada that developed in the second quarter remained throughout the fourth quarter, were likely exasperated by continued supply constraints caused by flooding in the fall. West Coast wholesale diesel prices averaged nearly thirteen cents per litre higher than the rest of Canada throughout the fourth quarter. (Figure 3)

Looking ahead to the next quarter, we expect crude prices to remain elevated early in the quarter upon geopolitical unrest in Libya and Kazakhstan that has kept some crude oil production offline. However, both of these issues are not expected to persist. In addition, although case counts of COVID-19 remain high, the effect on transportation fuels is not expected to be as drastic as earlier waves of the pandemic. Consequently, we expect in the latter part of the next quarter, crude oil markets may move towards balance given the incremental supply increases from OPEC and non-OPEC producers. Retail gasoline prices may see some relief in the coming months as lower seasonal demand will likely lead to lower gasoline refining margins and lower wholesale prices. However, lower North American distillate inventories coupled with higher demand for heating fuel and shipping will likely keep diesel refining margins and retail prices elevated in the coming months.

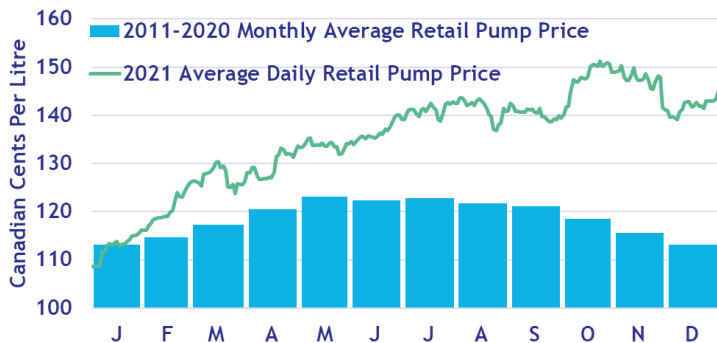
## Next Quarter Market Outlook

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## 2021 Gasoline Prices: A Year of Recovery

**Figure 4: 2021 Canada Average Retail Gasoline Daily Price versus Previous 10-Year Average Monthly Price**

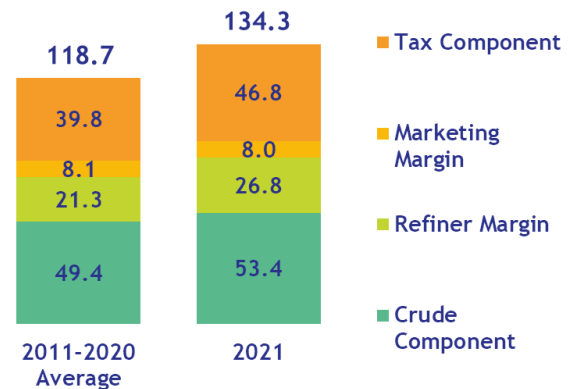


Source: Kalibrate Canada, Inc.

After falling to a low of 75.2 cents per litre in March of 2020, the average Canadian retail pump price has since climbed, reaching an all-time high of 151.2 cents per litre by October 2021. As Figure 4 shows, gasoline prices typically follow a seasonal pattern of rising in the spring and summer while falling in the fall and winter months. People tend to travel more when the weather is nice (typically during spring and summer) and partially hibernate during the winter months when travelling in colder temperatures is not as easy. As Figure 4 illustrates, gasoline prices in 2021 did not follow the typical seasonal pattern, and were above pump prices from the previous decade.

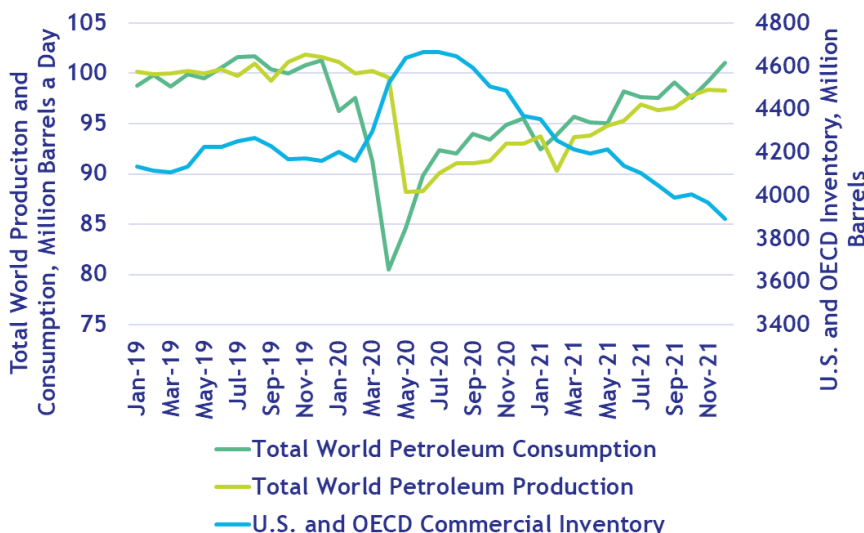
Figure 5 shows that the average pump price in 2021 was 15.6 cents per litre above the previous ten-year average. Most can be attributed to an increase in the tax component of the pump price, up 7.0 cents per litre. In 2011, only the province of British Columbia had a carbon tax; now, nearly all provinces have a carbon tax. Those without a carbon tax (Quebec and Nova Scotia) price carbon through a cap-and-trade program, with the price embedded in the price of gas. In 2021, most provinces with a carbon tax increased by roughly 2.2 cents per litre. Besides carbon taxes, no provinces increased their provincial excise tax on gasoline in the last year, nor did the federal government.

**Figure 5: Canadian Average Gasoline Pump Price Components, 2021 versus Previous 10-Year Average**



Source: Kalibrate Canada, Inc.

**Figure 6: Total World Petroleum Consumption and Production with U.S. and OECD Commercial Inventory Levels, 2019-2021**



Source: U.S. Energy Information Administration, Short-term Energy Outlook, January 11, 2022

Besides carbon taxes, no provinces charge either GST, HST, or GST, and all are calculated as a percentage. Therefore, higher pump prices would increase the amount of total taxes charged. For example, in Ontario, with HST at 13%, an increase of fifty cents per litre in pump prices would lead to an increase in the tax component of 6.5 cents per litre.

Besides taxes, Figure 5 shows that gasoline refining margins were 5.5 cents per litre higher in 2021, and the crude component was 4.0 cents per litre higher than in the previous ten years. Crude prices are generally determined by global supply and demand conditions. In 2020, when pump prices dramatically declined during the onset of the lockdown measures imposed to stop the spread of the COVID-19, refineries quickly reduced crude runs in an attempt to match production with reduced demand. As crude oil production did not immediately decline, a crude oil glut quickly developed. As Figure 6 illustrates, total world petroleum consumption fell more sharply than



production in the spring of 2020, leading to higher inventory levels. **Figure 6** also shows that since that initial lockdown period, total world petroleum consumption has outpaced production leading to falling inventories in 2021. During the second half of 2021, inventories have declined below pre-pandemic levels, which has provided additional support to higher crude oil prices. In 2021, a tighter crude oil market resulted in higher crude oil prices, which has translated into higher retail gasoline prices. In May of 2020, the average Canadian crude component reached as low as 16.9 cents per litre before climbing as high as 63.4 cents per litre in October 2021, 46.5 cents per litre higher.

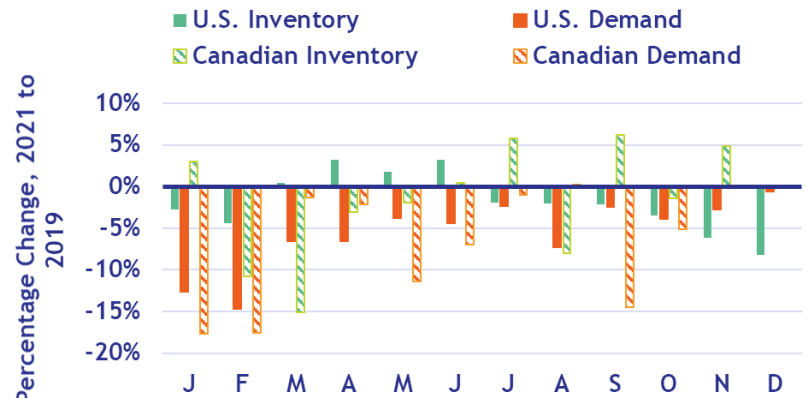
Gasoline refining margins are a measure of the profitability of producing gasoline. Typically, when demand falls below supply and inventories rise, wholesale gasoline prices fall and refining margins contract. When demand is above supply, inventory levels contract and wholesale prices will increase along with refining margins. Consequently, margins act as a signal to refiners. When refining margins for a petroleum product are rising, it is a signal to refiners to increase production of that product. Typically refining margins follow a seasonal pattern, matching rising demand in the spring and summer and declining when demand wanes in the fall and winter. Since the onset of the pandemic, refining margins have not followed typical seasonal patterns, leaving refiners guessing when to alter production, often misaligning to demand. Consequently, product inventories have been affected.

As **Figure 7** shows, in 2021, U.S. gasoline demand at the beginning of the year was well below 2019 levels, but was only marginally below 2019 levels in the latter part of the year as gasoline demand defied typical seasonal patterns, staying strong throughout the fall. Consequently, gasoline inventories declined in the latter part of the year, falling below pre-pandemic levels. Looking at Canadian data, gasoline demand was well below 2019 levels at the beginning of the year as in the U.S., but it appears that Canadian demand for gasoline may not have been as strong in the latter part of the year, following more seasonal patterns. Consequently, Canadian inventories mostly expanded in the latter part of the year.

Despite differing demand trends towards the end of the year between the two countries, Canadian and U.S. wholesale gasoline prices climbed in sync, applying upward pressure on Canadian and U.S. gasoline refining margins. (**Figure 8**) Regardless of differing demand trends, the Canadian refining industry is heavily integrated with the U.S. Unless there is a regional supply interruption, product prices between the two countries closely follow each other. Importers of gasoline in Canada will pay the closest U.S. Petroleum Administration for Defense District (PADD) price, while exporters of gasoline will price their product similar to the closest U.S. PADD export market to prevent arbitrage conditions.

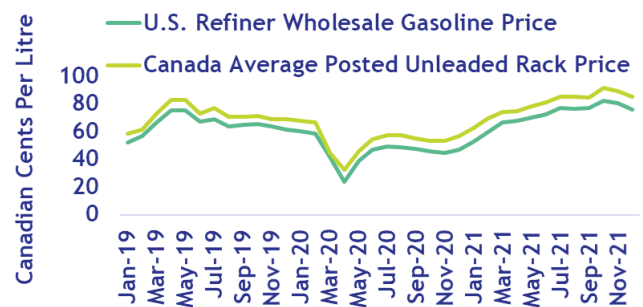
In summary, 2021 saw retail gasoline prices climb to an unprecedented territory as global crude inventory draws outpaced production leading to rising crude oil prices. Additionally, stronger than anticipated gasoline demand in North America, especially in the U.S., led to lower inventory levels in the latter part of the year, even as Canadian gasoline consumption did not match the U.S. recovery. What does this mean for 2022? We live in a world dominated by unpredictable events like the unknown impact of the Omicron and other potential new COVID-19 variants on fuel demand, the uncertainty surrounding OPEC+ crude oil production curtailment levels, the supply value chain impact on economic recovery and inflation, and its corresponding impact on interest rate decisions. Therefore, many variables could either derail or aid crude oil and petroleum product markets leading to more uncertainty and higher volatility over the near term.

**Figure 7: Canadian and U.S. Gasoline Inventory and Demand Change Comparison, 2021 versus 2019**



Source: U.S. Energy Information Administration, Short-term Energy Outlook, January 11, 2022; Statistics Canada, Table 25-10-0081-01.

**Figure 8: Canadian and U.S. Gasoline Wholesale Price Comparison, 2019-2021**



Source: U.S. Energy Information Administration, Short-term Energy Outlook, January 11, 2022; Kalibrate Canada, Inc.



We welcome media enquiries

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#### About Kalibrate

Kalibrate's decision-making software empowers fuel and convenience retailers across the globe with the market intelligence, micro-local data, and precision pricing and planning tools they need to gain real competitive advantage. For over 25 years, Kalibrate has been the chosen decision-making partner of 300+ fuel and convenience retailers in over 70 countries. The firm is headquartered in Manchester UK, with local offices in the USA, Canada, India, China, Australia, and Japan.

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