Kalibrate

First Quarter 2022
January - March

Canadian Petroleum Prices Reached Unprecedented Highs in the First Quarter Attributable to a Sharp Increase in Crude Prices

Both retail gasoline and diesel prices reached all-time highs in March upon mounting crude prices and expanding refining margins, particularly for diesel fuel, which nearly doubled in March from levels a year ago.

War in Ukraine has contributed to an extraordinary increase in crude prices in the first quarter of 2022. Global crude oil markets began the year in what was already considered a tight market as world petroleum demand had outpaced supply through much of 2021, leading to contracting crude oil inventories. As the conflict escalated in Ukraine, many countries, including Canada, sanctioned crude oil purchases from Russia, leading to a further tightening of global crude markets. Russia is the third-largest global crude producer, producing 11 percent of total world production (as of 2020, EIA). The Organization of Petroleum Exporting Countries and allied countries (OPEC+) continued to set crude oil monthly curtailment levels in the first quarter despite the Russia/Ukraine situation and rising global demand as many countries ease pandemic restrictions, further contributing to higher crude prices. Consequently, Canadian crude prices reached unprecedented levels by March, having risen over thirty cents per litre from the end of 2021.

By March, North American gasoline inventories had recovered from unseasonably low levels in the fourth quarter of 2021, caused by unusually strong gasoline demand in the fall. Strong gasoline production in the fall, coupled with declining gasoline demand in the first quarter, have enabled gasoline inventories to fall within comparable levels to recent years for this past quarter. Consequently, Canadian gasoline wholesale prices rose in line with the rise in crude prices in the first quarter, as refining margins averaged just a half a cent higher from the previous quarter.

Global distillate supplies contracted throughout 2021 and into the first quarter of 2022, leading to a sharp increase in global diesel prices. In North America, distillate inventories averaged seventeen percent below the previous five-year average for the first quarter. There are several factors contributing to the diesel supply shortage globally, including strong demand as economies begin recovering from the pandemic, reduced production as refineries substitute jet fuel production upon increased travel by air, high natural gas prices causing many European countries to turn to heating fuel (a form of distillates), and the war in Ukraine which has contributed to less distillate production coming from Russia. Consequently, Canadian wholesale diesel prices rose nearly fourteen cents per above the increase in crude prices in the first quarter as refining margins expanded to an all-time high in Canada, averaging nearly fourteen cents per litre higher than the previous five-year average for the first quarter. **Figures 1 & 2** show the historical movement of retail gasoline and diesel prices in Canada, along with their component prices.

Figure 1: Canadian Average Regular Gasoline and Component Prices

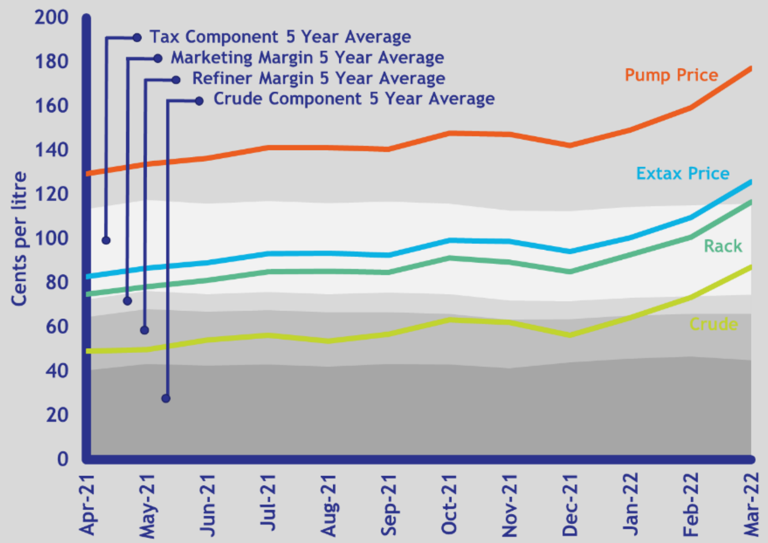
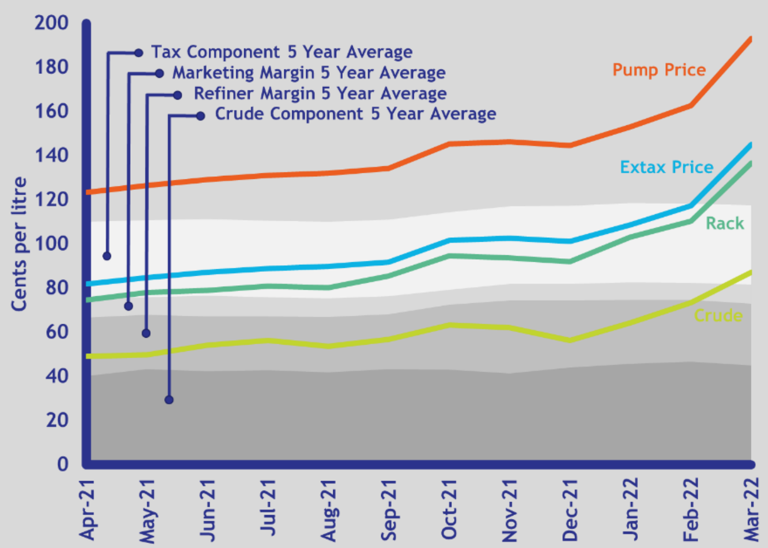


Figure 2: Canadian Average Diesel and Component Prices

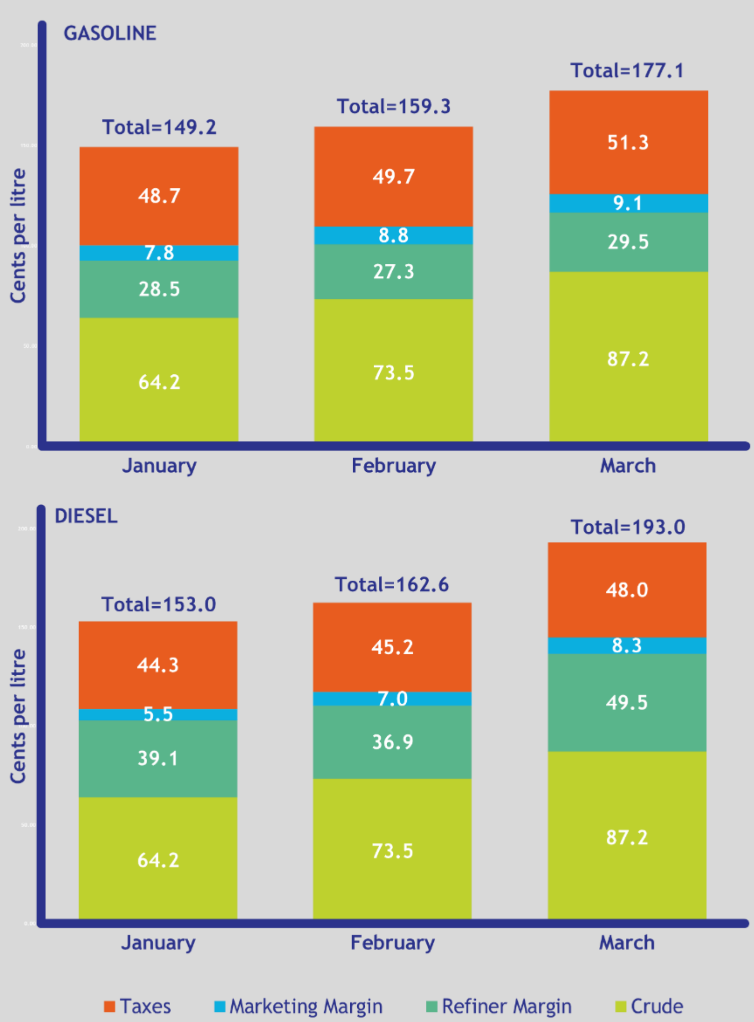


Crude prices climbed throughout the first quarter, peaking in early March before experiencing volatility through the remainder of the month. The price of Brent crude (a global benchmark) reached as high as 133.18 $US/BBL in early March before ending the quarter at 107.29 $US/BBL, 38.9 percent above the end of the previous quarter. Similarly, the WTI benchmark reached as high as 123.64 $US/BBL in early March before experiencing some volatility and ending the quarter at 100.53 $US/BBL, 31.3 percent above the previous quarter's finish. Brent's premium to WTI averaged at 6.29 $US/BBL, up 3.95 $US/BBL higher than the previous quarter, reaching as high as 12.63 $US/BBL in late March when crude prices were experiencing volatility due to the ongoing Ukraine war. A globally tight crude market has increased the demand for all crude blends, including Western Canadian Select (WCS). Consequently, the heavy-light crude oil price spread between WTI and Western Canadian Select (WCS) narrowed in the first quarter, down 5.55 $US/BBL from the end of the previous quarter.

Gasoline and Diesel Market Overview

Canadian gasoline prices reached an all-time high in the first quarter, averaging 35 cents per litre higher in March from the end of the previous quarter, mostly attributable to rising crude prices, which were similarly higher, up nearly 31 cents per litre. Gasoline refining margins also remained elevated, up nearly 8.5 cents per litre in the first quarter compared to the previous five-year average.

Figure 3: Canadian Average Gasoline and Diesel Price Components for 1st Quarter 2022



Regionally, wholesale gasoline prices along the West Coast increased higher than the rest of Canada, rising 37.5 cents per litre from the end of the previous quarter. The West Coast of Canada is logistically isolated from the rest of Canada when it comes product supply, relying on imports which were reduced early in the year from extreme cold weather. Consequently, the West Coast region of Canada is prone to price spikes that may linger as product re-supply competes with product heading to the U.S. West Coast.

In March, retail diesel prices in Canada reached an all-time high at 193.0 cents per litre as crude prices climbed and refining margins expanded to a record 49.5 cents per litre. North American inventories are well below seasonal norms as global demand increases while production is unable to keep up.

Regionally, West Coast diesel rack prices expanded early in the quarter, likely weather-related; however, the differential eased as the quarter went on. Meanwhile, diesel refining margins expanded greater in Eastern Canada during the first quarter and was likely due to increased demand for heating fuel in the winter while supplies were declining. The North American East Coast is more reliant on distillate fuels to heat homes than other parts of Canada and the U.S. (**Figure 3**)

Next Quarter Market Outlook

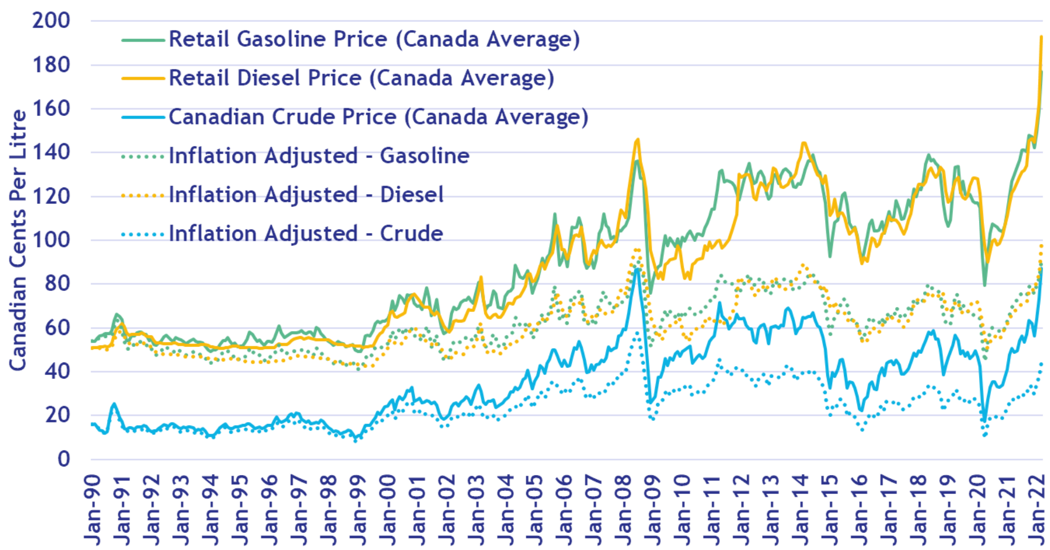
Looking ahead to the second quarter, we expect crude price volatility to continue bringing some volatility to retail petroleum prices in Canada. There are currently no indications that the war in Ukraine will end, and with that, crude oil sanctions on Russian oil. An extraordinary coordinated emergency release of crude oil from 31 member nations of the International Energy Agency and a remarkable release by the U.S. above the IEA coordinated efforts may help ease some of the supply constraints currently facing the markets. However, demand uncertainly exists as China battles another wave of the COVID-19 virus, while at the same time, many countries ease travel restrictions.

We will likely see Canadian gasoline prices rise in the spring as demand typically picks and with the switchover to more expensive summer formulated gasoline. An increase in carbon taxes April 1st in several provinces will add to retail petroleum prices; however, some provinces have introduced lower petroleum taxes to bring relief from high pump prices. This includes the province of Alberta, which has removed all petroleum taxes, and Ontario, set to reduce petroleum taxes beginning in July.

Record Retail Petroleum Prices – A Canadian Perspective

In March, Canadians experienced the highest retail petroleum pump prices in history. Recorded on March 10, 2022, on Kalibrate Canada's daily pump price survey, retail gasoline prices reached an all-time high of 191.4 cents per litre, and diesel prices reached an all-time high of 213.6 cents per litre. Compared to a year ago, March 2022 gasoline prices were 50 cents per litre higher, and diesel prices were 71.2 cents per litre higher. In this section of the newsletter, we will examine how various pump price components contributed to high retail prices in Canada.

Figure 4: 1990-Present Retail Gasoline Price, Retail Diesel Price, Canadian Crude Price - including inflation adjusted prices



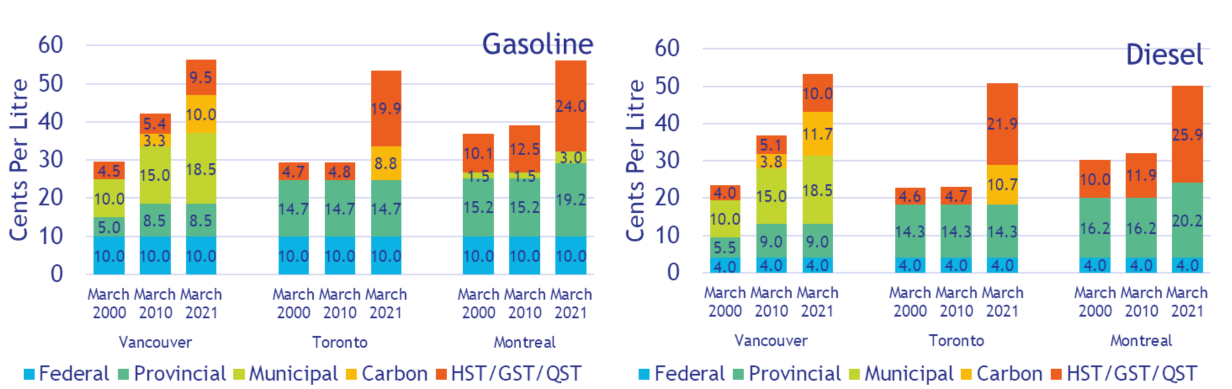
Source: Statistics Canada 18-10-0004-01, Kalibrate Canada, Inc.

Figure 4 shows the average Canadian monthly retail gasoline and diesel prices since 1990. Retail gasoline and diesel prices have tracked each other closely over the last three decades. Retail prices hovered just below the 60 cents per litre mark in the 1990s before climbing in the 2000s, peaking in July 2008 during the peak of the financial crisis at that time, at 136.2 cents per litre for gasoline and 146.2 cents per litre for diesel. Since then, retail prices have experienced increased volatility before peaking again in March 2022 at a monthly average of 177.1 and 193.0 cents per litre for gasoline and diesel, respectively. Even when accounting for inflation, retail prices experienced in March of 2022 are higher than in any other period of Canadian history.

Figure 4 also shows historical Canadian crude prices over the last three decades. It would appear that fluctuations in the crude component of the pump price also led to fluctuations in retail prices. Like retail prices, crude prices in the 1990s were relatively flat, hovering around 15 cents per litre. And, like retail prices, crude prices climbed in the 2000s, peaking in July 2008 at 86.8 cents per litre. Crude prices have since experienced volatility before peaking again in March 2022 at 87.2 cents per litre, just 0.4 cents per litre higher. As explained earlier in this newsletter, crude prices have found strength in 2022 from a combination of political unrest in Ukraine limiting crude supplies while demand has increased as the economy recovers from the pandemic. When accounting for inflation, Canadian crude prices were actually highest in July 2008, in fact, 12.2 cents per litre higher than in March 2022. Therefore, the record pump prices experienced in March 2022 in Canada cannot be solely explained by fluctuations in crude prices.

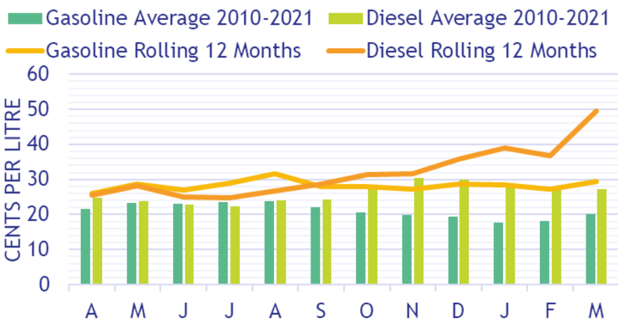
One component of retail pump prices is the tax component. Looking at historical changes in select Canadian cities (**Figure 5**), we can see that the tax component of the pump price has increased substantially. Although federal taxes have not changed, some provinces have increased provincial taxes, and most notably, carbon and HST/GST/QST taxes have increased in all regions of the country. Although not shown, the Canada average tax component of the pump price was 24.7 cents per litre for gasoline

Figure 5: Gasoline and Diesel Tax Component Prices, Select Months/Years for Vancouver, Toronto, and Montreal



Source: Kalibrate Canada, Inc.

Figure 6: Gasoline and Diesel Refining Margin Comparison



Source: Kalibrate Canada, Inc.

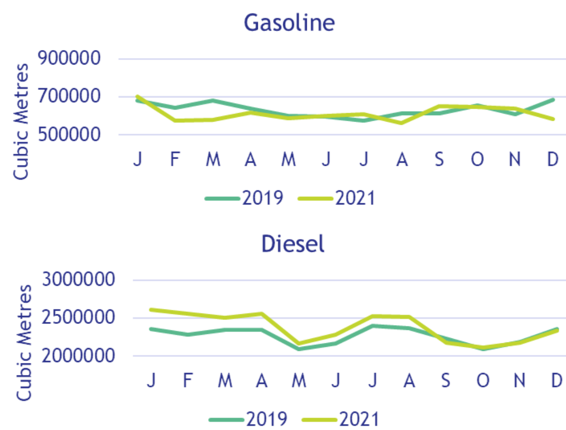
and 19.7 cents per litre for diesel in 1991. In March of 2022, the tax component for the Canada average had reached 51.3 and 48.0 cents per litre for gasoline and diesel, each respectively, accounting for a significant portion of the increase in retail pump prices above the increase in crude prices.

Refining margins represent the portion of the pump price attributable to refining crude oil into usable petroleum products. As calculated in its simplicity, it is a gross margin expressed as the difference between wholesale and crude prices. Refining margins can fluctuate with size representing the supply and demand conditions of refined products. If supplies are low and demand high, wholesale prices can climb, expanding refining margins. As shown in **Figure 6**, gasoline and diesel refining margins follow a distinct pattern. Gasoline margins tend to rise during the peak summer demand driving season, while diesel margins peak in the winter months when demand is highest due to its correlation to heating fuel (a similar product). **Figure 6** also shows Canadian refining margins over the last 12 months showing both gasoline and diesel refining margins have averaged higher than in the last decade, particularly for diesel fuel. By March 2022, gasoline refining margins were 9.3 cents higher than in the last decade, and diesel refining margins were 22.2 cents higher.

Is there a supply crunch in Canada for gasoline and diesel fuel, pushing refining margins to new heights? The simple answer is no. Looking at **Figure 7**, comparing ending stocks of gasoline and diesel fuel in Canada to pre-pandemic markets in 2019, 2021 data shows there is no supply crunch in Canada as gasoline and diesel fuel inventory levels have closely matched 2019 levels. This contrasts with U.S. data which shows that gasoline inventories in 2021 averaged below the previous five-year range for much of the year, and distillate inventories have fallen throughout much of 2021, averaging 17 percent below the previous five-year average during the first quarter of 2022 (U.S. Energy Information Administration).

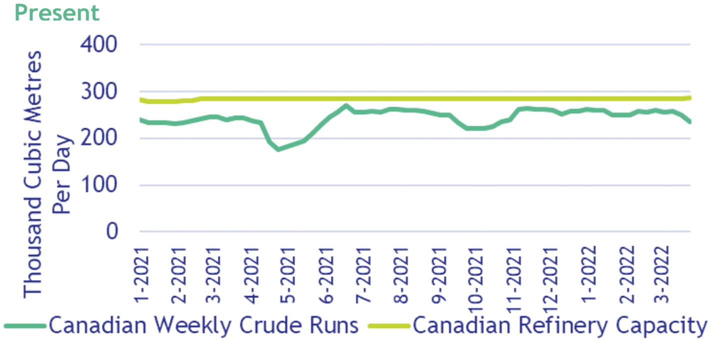
Since November 2021, Canadian refinery utilization rates have averaged 89.0 percent, which is 4.6 percent higher than the previous five-year average (**Figure 8**). Yet, Canadian consumption of gasoline and diesel fuel has not yet returned to pre-pandemic levels. Canadian consumption of gasoline in Canada was 15.0 percent lower in 2021 compared to 2019, and diesel fuel consumption was 3.1 percent lower (Statistics Canada, table 25-10-0081-01). Strong refinery activity coupled with lower consumption have enabled gasoline and diesel inventories to remain at normal levels in 2021 in Canada.

Figure 7: Canadian Gasoline and Diesel Fuel Ending Stock Comparison, 2019 and 2021



Source: Statistics Canada, Table 25-10-0081-01

Figure 8: Canadian Refinery Crude Runs and Capacity, 2021-Present



Source: Canadian Energy Regulator, Weekly Crude Run Data

So, if Canadian refiners have been able to keep up with demand in Canada, and Canada is not experiencing the same supply crunch as in the U.S. and other global markets, particularly for diesel fuel, why are refining margins climbing in Canada? Canada is experiencing an increase in wholesale prices because refined markets in Canada are heavily connected to refined markets in the U.S. Product trades freely along the border, and due to arbitrage, prices closely match. Hence, Canadian refining margins have climbed along with those in the U.S.

In conclusion, Canadian retail prices have reached extraordinary heights in the first quarter of 2022. High prices have been a result of several factors, including higher crude prices, higher taxes, and higher refining margins. Crude prices will likely remain high until the political unrest in Ukraine settles allowing more Russian crude oil to reach markets. The Organization of Petroleum Exporting Countries (OPEC) seems resistant to increase beyond monthly crude production limits set during the pandemic and often missed production limits, which may continue into 2022. Similarly, higher wholesale diesel prices are likely to stay until global markets balance. Typically taxes do not decrease, but petroleum taxes in Alberta have been suspended temporarily, and Ontario is expected to lower petroleum taxes during the second half of 2022. It would seem that even with some relaxing of petroleum taxes in some provinces, higher retail petroleum prices appear not to be going anywhere in Canada in the near future.

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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