Second Quarter 2022
April - June

Canadian Gasoline and Diesel Prices Climbed over the Two Dollar Threshold in the Second Quarter of 2022

Retail petroleum prices reached record-breaking highs in the second quarter, pushed higher by rising crude prices and expanding refining margins – the latter having almost doubled by the end of the quarter from the beginning of the year.

The ongoing war in Ukraine, and subsequent sanctioning of crude oil from Russia, continue to pressure crude prices higher as crude inventories remain tight. In June, Canadian crude prices reached an all-time high, having risen 36.2 cents per litre since the end of 2021. However, retail petroleum prices rose at a faster pace in the second quarter than crude prices as wholesale prices climbed and refining margins expanded. Low product inventories, particularly for diesel fuel, have led to expanding petroleum crack spreads. Although refined product demand remains below pre-pandemic levels in 2022, inventories contracted as refiners struggled to meet demand amid lower refining capacity. North American refining capacity has declined since 2020 as several refineries closed and others began the process of changing over to renewable fuel plants. So although refinery utilization rates are high in the second quarter, production of refined products has not kept up with inventory withdrawals. Consequently, Canadians experienced record retail prices, rising above the two dollar threshold in the second quarter.

Figure 1: Canadian Average Regular Gasoline and Component Prices

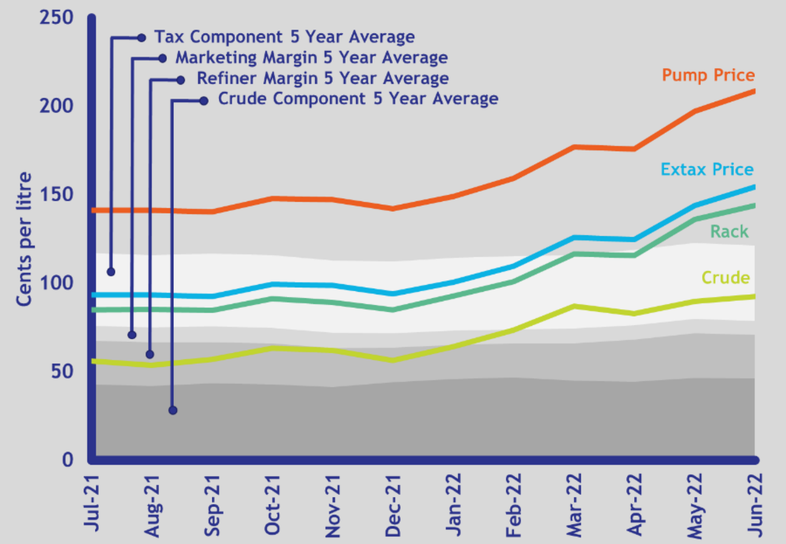
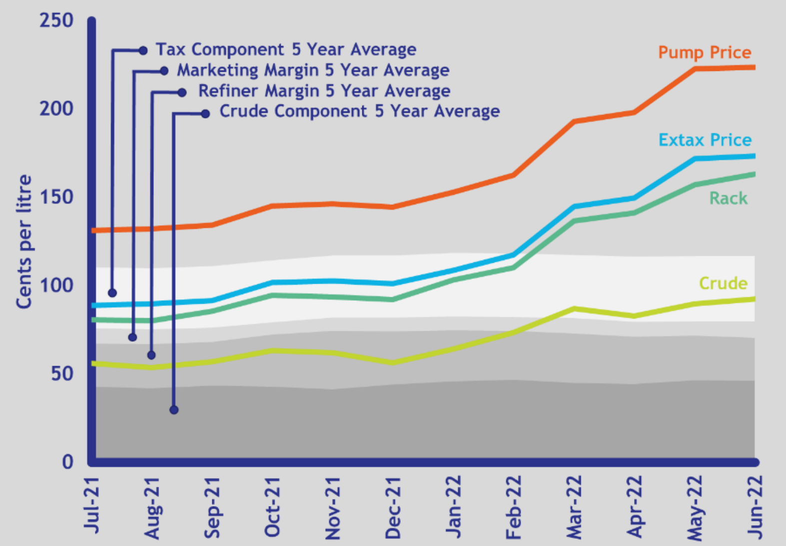


Figure 2: Canadian Average Diesel and Component Prices



This past quarter, higher gasoline pump prices led to lower North American demand as consumers sought conservation methods and averted optional trips. Despite gasoline demand trending below levels from a year ago during the second quarter, gasoline inventories have contracted as refinery production lagged demand. As of the end of June, gasoline inventories were 7.0 percent below levels from a year ago (EIA), contributing to higher refining margins. The Canadian gasoline refining margin reached an all-time high of 51.5 cents per litre in June, 22 cents per litre higher than the end of the last quarter.

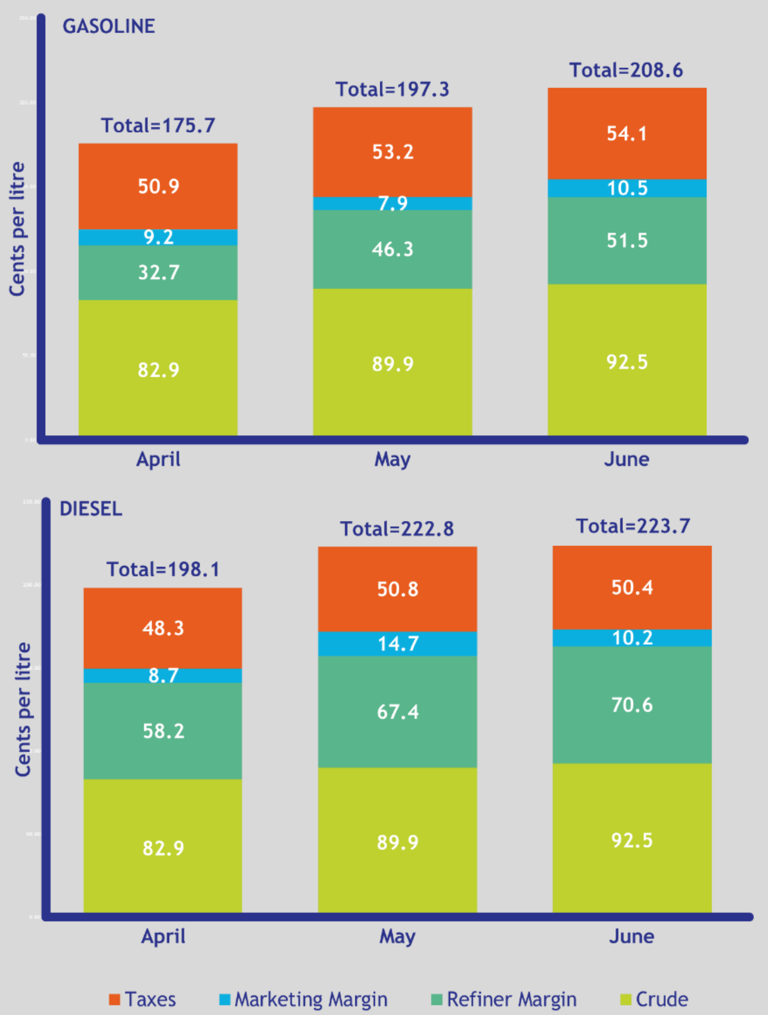
Canadian diesel refining margins also reached record highs by June, averaging 70.6 cents per litre, nearly forty cents per litre above the previous five-year average. Like gasoline inventories, North American distillate inventories were below seasonal norms this past quarter, down 19.9 percent below levels from a year ago by the end of the quarter (EIA). Again, constrictions in refining capacity have limited the ability of refineries to boost production and raise inventories. Consequently, Candian diesel prices reached record levels in the second quarter. **Figures 1 & 2** show the historical movement of retail gasoline and diesel prices in Canada, along with their component prices.

Crude prices climbed throughout most of the second quarter upon supply concerns, peaking in mid-June before mostly falling through the remainder of the month, largely due to recession worries. The price of Brent crude (a global benchmark) reached as high as 123.58 $US/BBL in mid-June before ending the quarter at 114.81 $US/BBL, 6.4 percent above the end of the previous quarter. Similarly, the WTI benchmark reached as high as 122.11 $US/BBL in mid-June before mostly falling through the remaining part of June, ending the quarter at 105.76 $US/BBL, still 5.5 percent above the previous quarter's finish. Brent's premium to WTI averaged at 3.38 $US/BBL, up 0.29 $US/BBL higher than the previous quarter, reaching as high as 9.05 $US/BBL by the end of June, possibly a result of a strong U.S. dollar as the Federal Reserve raised interest rates. The heavy-light crude oil price spread between WTI and Western Canadian Select (WCS) expanded in the second quarter, reaching as high as 19.84 $US/BBL in mid-June as global benchmarks climbed above heavy crude price increases. The quarter ended with the WTI/WCS spread 4.48 $US/BBL higher than the end of the previous quarter.

Gasoline and Diesel Market Overview

Canadian gasoline prices reached an all-time high in the second quarter, averaging 31.5 cents per litre higher in June than the end of the previous quarter and 66.5 cents per litre higher from the end of 2021. Crude prices reached an all-time high in June, but most of the increase was attributed to higher refining margins, averaging 19.0 cents per litre above the previous five-year average for the second quarter.

Figure 3: Canadian Average Gasoline and Diesel Price Components for 2nd Quarter 2022



Regionally, wholesale gasoline prices along the East Coast increased higher than in other regions of Canada, likely a consequence of lower gasoline inventories in PADD 1 of the U.S. (the East Coast). The East Coast of the U.S. consumes more petroleum products than the region has the capacity to produce. Reduced refinery capacity within the East Coast region in the last couple of years has disproportionately affected gasoline inventories in the area.

Like gasoline prices, Canadian retail diesel prices reached an all-time high in June, up 30.7 cents per litre from the end of the previous quarter and up 79.0 cents per litre from the end of last year. Higher refining margins were also the main contributor to higher diesel prices, although wholesale diesel prices were pressured higher than gasoline prices due to more significant inventory constraints.

Regionally, West Coast and Prairie Provinces' wholesale diesel prices rose higher than other parts of the country this past quarter. This is likely related to demand disparities between coastal regions of the country. Diesel demand is highly correlated with economic activity. Stronger GDP growth in western provinces may be driving diesel demand up, while the demand for heating fuel (a similar product to diesel) used primarily along the East Coast is generally low during the summer months. (**Figure 3**)

Next Quarter Market Outlook

Looking ahead to the next quarter, crude price volatility will likely continue as opposing factors push and pull crude prices up and down. The ongoing war in Ukraine will likely continue to affect crude inventories, pressuring prices higher, while an impending global recession and the continuous emergence of various COVID-19 strains threaten crude oil demand pressuring prices lower.

As we head into the remaining summer months, lower product inventories will likely keep refining margins elevated for gasoline and diesel; thus, retail prices will likely continue to trend higher than in previous summers. Higher retail prices will probably subdue gasoline demand this summer driving season, likely tempering further increases, particularly as the summer driving season ends.

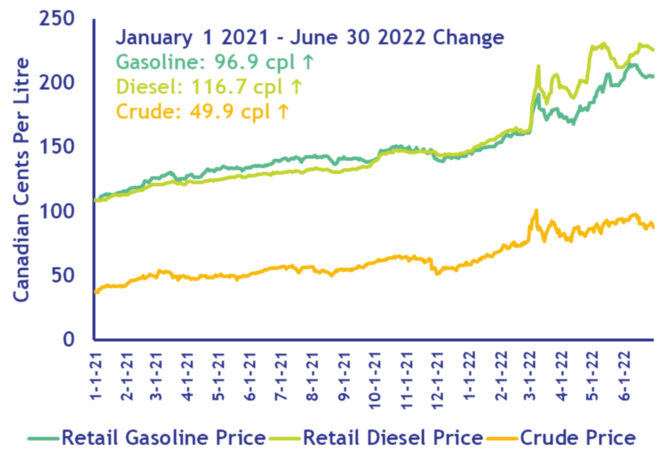
North American diesel demand is already trending lower from reduced manufacturing and trucking demand. Higher interest rates and a looming recession will likely further reduce diesel demand. However, far lower than typical distillate inventory levels heading into the fall may mute any wholesale price decreases as refiners need to build inventories for the upcoming heating season.

Retail Petroleum Prices Rose Higher than Crude Prices in 2022

Crude prices comprise a significant component of the pump price and largely influence retail petroleum prices. Yet, it is less understood that retail petroleum prices are influenced by their own supply and demand dynamics and can often trend differently than crude prices. During the first half of 2022, there were 56 days out of 129 weekdays when retail gasoline prices moved in the opposite direction as crude prices. Similarly, there were 59 days when retail diesel prices trended differently than crude prices. This indicates that for nearly half the time, crude prices moved in the opposite direction as retail petroleum prices on a daily basis. So, although both retail petroleum and crude prices trended upward in the first half of the year, daily movements did not always match.

Although daily movements of crude prices do not translate into equal movements in retail petroleum prices, over a more extended period of time, these prices will generally move in the same direction (**Figure 4**). However, the magnitude of price changes over a longer-term do not always match. An example of this can be seen in retail gasoline and diesel prices in the last year and a half. At the beginning of January 2021, crude was 38.0 cents per litre before rising 49.9 cents per litre by June 30, 2022. By comparison, retail gasoline prices rose 96.9 cents per litre, and retail diesel prices rose 116.7 cents per litre, far greater than the increase in crude prices. Retail petroleum prices have significantly increased after plummeting in 2020 when lockdown measures were implemented to stop the spread of the coronavirus; however, the increase can not be solely attributed to the rise in crude prices over that time.

Figure 4: Daily Retail Gasoline, Diesel, and Crude Prices, 2021 to Present

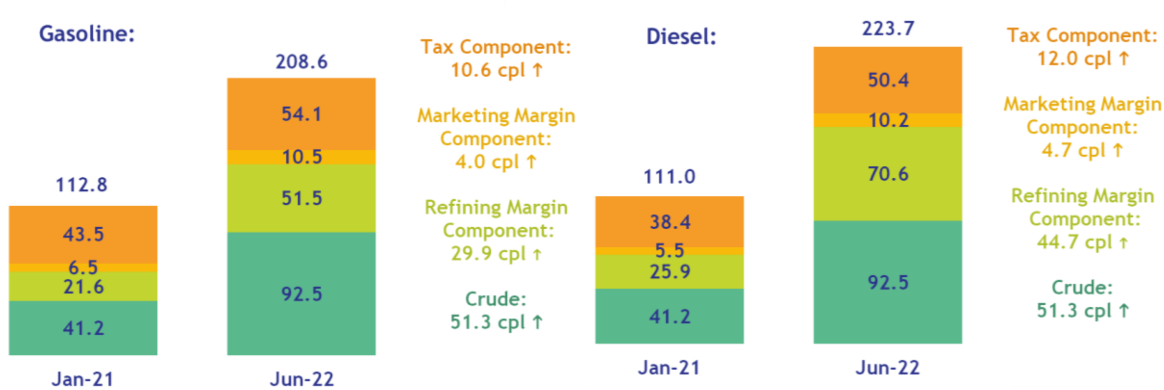


Source: Kalibrate Canada, Inc.

Part of the increase can be attributed to increased taxes. Petroleum taxes are generally charged at a fixed cent per litre rate. Since the beginning of 2021, all provinces that price carbon using a fixed rate carbon tax have increased this tax. We must also consider that all provinces and territories charge some form of GST/HST/QST, which are charged on a percentage basis. Consequently, as crude prices and other components of a litre of fuel rise, the percentage portion of the tax component will also rise.

The retail marketing margin component of a litre of fuel has also increased since the beginning of 2021. Comparing January 2021 to June 2022, the gasoline marketing margin rose 4.0 cents per litre, and similarly, the diesel marketing margin rose 4.7 cents per litre. This may be attributable to rising costs likely associated with increasing inflation. However, the increase in marketing margins experienced with these fuels in the last year in a half hardly explains the much more significant increase in retail prices experienced during the same timeframe. And if we look at the average marketing margin in the ten years before 2020, June 2022 gasoline marketing margins were only 2.4 cents per lire higher, and diesel marketing margins were just 0.9 cents per litre higher. As **Figure 5** illustrates, most of the increase in retail prices beyond the rise in crude prices is primarily due to the increase in the refining margins for gasoline and diesel.

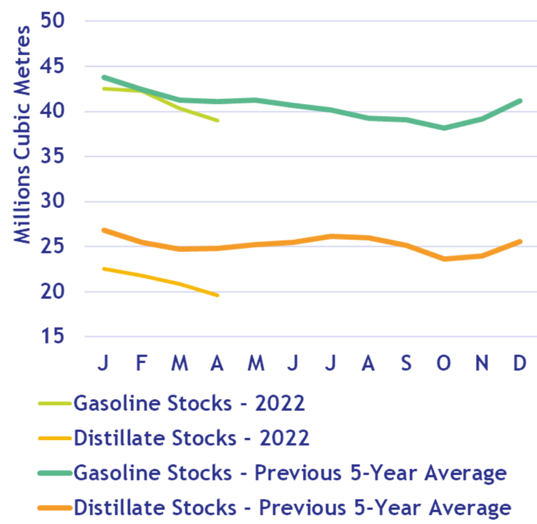
Figure 5: Monthly Gasoline and Diesel Monthly Margin Component, January 2021 and June 2022



Source: Kalibrate Canada, Inc.

Wholesale prices for refined products can move up and down with crude price fluctuations, but are also affected by each product's own supply and demand conditions. Product inventories in North America have fallen to low levels despite lower product demand. As **Figure 6** illustrates, North American gasoline inventories have averaged below the previous five average for January to April. Similarly, diesel inventories have been even further below the previous five average in 2022. During the first four months of the year, North American stocks of gasoline and diesel averaged 2.6 percent and 16.8 percent below the previous five-year average, respectively. Although data is not available for Canada, U.S. stock data shows that as of the end of June, gasoline stocks were 8.5 percent below the previous five-year average for the same month, and distillates were 23.1 percent below.

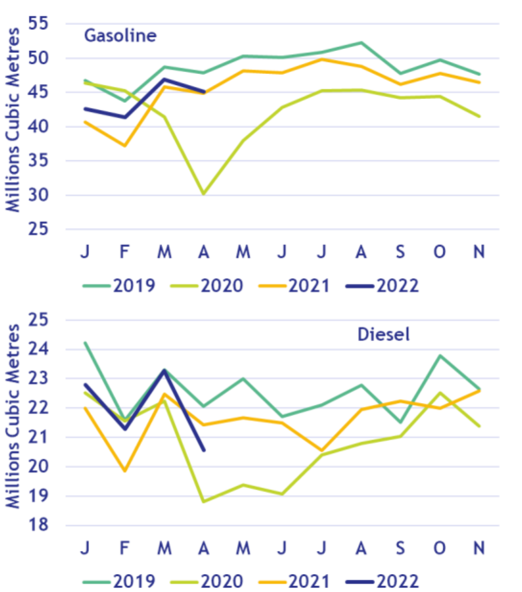
Figure 6: 2022 North American Gasoline and Diesel Inventories Compared to Previous Five-Year Average



Source: EIA, Statistics Canada Tables 25-10-0044-01 & 25-10-0081-01

Lower distillate inventories have disproportionately affected wholesale diesel prices, which have risen above gasoline prices and remained above gasoline prices throughout 2022 – a phenomenon contrary to seasonal norms. During the previous ten years (2011-2021), from November to February, wholesale diesel prices averaged 10.74 cents per litre above wholesale gasoline prices. This is a seasonal tendency due to diesel fuel's similarity to heating fuel, whose demand rises in the winter months. The differential typically subsides as gasoline demand picks up during the busy summer driving season. From 2011 -2021, this differential averaged 0.3 cents per litre from May to August. This year the differential began 2022 like previous years, averaging 10.05 cents per litre in January and February, but has since risen, averaging 21.43 cents per litre from March to June 2022, well above seasonal norms.

Figure 7: North American Gasoline and Diesel Demand, 2019-2022



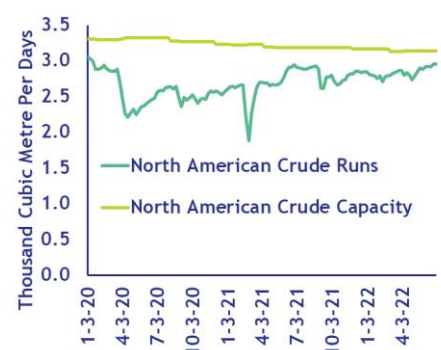
Source: EIA, Statistics Canada Table 25-10-0081-01

Yet as mentioned, product demand has not returned to pre-pandemic levels in 2022 (**Figure 7**). In 2022, North American gasoline demand during the first four months of the year was 6.0 percent below the same four months in 2019. Similarly, demand for distillates was 3.6 percent lower during the first four months of the year.

So if demand is lower, why are refined product inventories so low? Refining capacity in North America declined during the pandemic as demand for refined products waned and some refineries began the process of switching to becoming renewable fuel plants. North American refinery capacity declined by 4.9 percent from the beginning of 2020 to the end of Q2 2022. Although utilization rates are higher, at 94.2 percent at the end of Q2 2022 from 92.7 percent at the beginning of 2020, crude runs into refineries were 3.3 percent lower (**Figure 8**).

Higher wholesale prices for refined products, which in turn expand the refining margin, are needed to entice refineries to continue to run at higher utilization rates, bring product inventories up, and begin to bring prices lower. In the long run, however, it is difficult to imagine, given the environmental push to move towards renewables, that higher wholesale product prices will result in refiners deciding to invest in costly upgrades or new refineries. What we can expect in the near term is that higher wholesale product prices will likely keep refiners pumping at high utilization rates and production up. This, combined with lower demand from higher prices and a possible looming recession, may allow product inventories to return to typical ranges and consequently some relief to retail pump prices.

Figure 8: 2019 to Present North American Refinery Capacity Versus Crude Inputs



Source: EIA, Canadian Energy Regulator (CER)

In summary, refined product prices, particularly for diesel fuel, have risen far above the increase in crude prices during the last year and a half. But this is not a case of refineries accepting larger profit margins on the backs of consumers. Refined product inventories have fallen well below typical levels in 2022, while refiners' capacity to churn out more fuel has declined. Until product inventories fall in line with consumer demand, we will likely continue to see elevated product margins and higher pump prices.

We welcome media enquiries

Contact Suzanne Gray at 226-270-8964

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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Guide and glossary

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