



Third Quarter 2018
July – September

Canadian Gasoline and Diesel Prices Fell in the Third Quarter Following Crude Prices.

After closing in on a four-year high in July, Canadian crude prices declined steadily throughout the quarter, bringing lower prices for both gasoline and diesel.

While global crude prices edged higher this past quarter, Canadian crude prices dipped, leading to a significant and widening gap between them. Global crude prices rose following supply concerns regarding the looming U.S. sanctions on Iran, and the Organization of Petroleum Exporting Countries (OPEC) signalling that they will hold production levels despite the expected squeeze on world supply. In contrast, both heavy and light blends of Canadian crude fell as rising production was met with constrained pipeline capacity and a sudden drop in demand from PADD 2 refineries that were brought offline for maintenance.

Canadian gasoline prices fell modestly over the past quarter as the average crude input price for Canadian refineries decreased. Refining margins held relatively steady from the previous quarter as high late-summer demand was countered by increased refining activity both in Canada and in the U.S., where refinery throughputs reached record levels in August.

North American distillate inventories remained below historical averages during the last quarter, particularly in Eastern regions, which has kept diesel refining margins above seasonal norms. Canadian diesel margins averaged nearly six cents per litre higher than the third quarter of the previous year. **Figures 1 & 2** show the historical movement of retail gasoline and diesel prices in Canada along with their component prices.

Uncertainty around global supply has contributed to higher international global crude prices this past quarter. Brent rose 4.19 \$US/BBL, ending the quarter at 82.72 \$US/BBL, or 5.3 percent higher than the previous quarter. The key North American light crude benchmark (WTI) remained relatively stable; the upward pressure from global supply concerns was countered by U.S. crude production that reached record levels in September. WTI fell marginally 0.97 \$US/BBL, ending the quarter at 73.21 \$US/BBL, or 1.3 percent lower than the previous quarter. Brent's premium to WTI expanded to as high as 9.71 \$US/BBL in late September, an increase of 5.16 \$US/BBL from the end of the previous quarter.

Increased production combined with logistical constraints and a dip in demand from PADD 2 (a primary landing spot for western Canadian crude) had the effect of increasing crude inventories and significantly lowering western Canadian crude prices. Consequently the price of Western Canadian Select (WCS) fell 30.3 percent this past quarter, and the WCS discount to WTI grew by 14.50 \$US/BBL over the quarter

Figure 1: Canadian Average Regular Gasoline and Component Prices

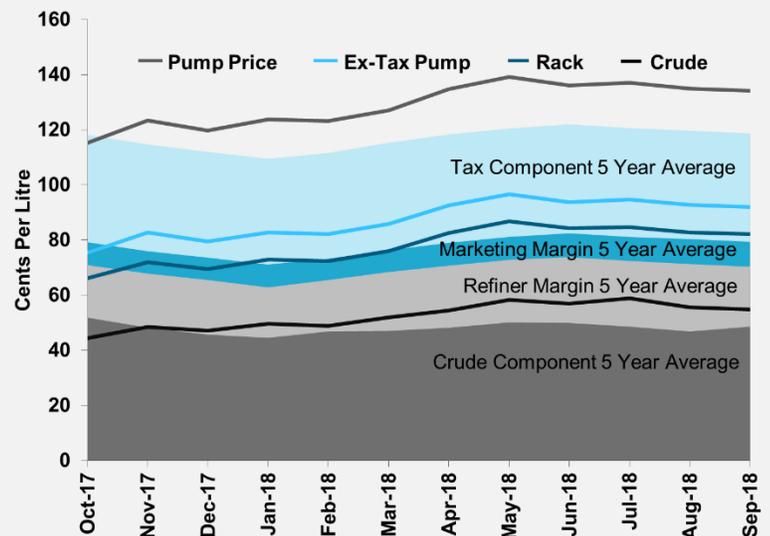
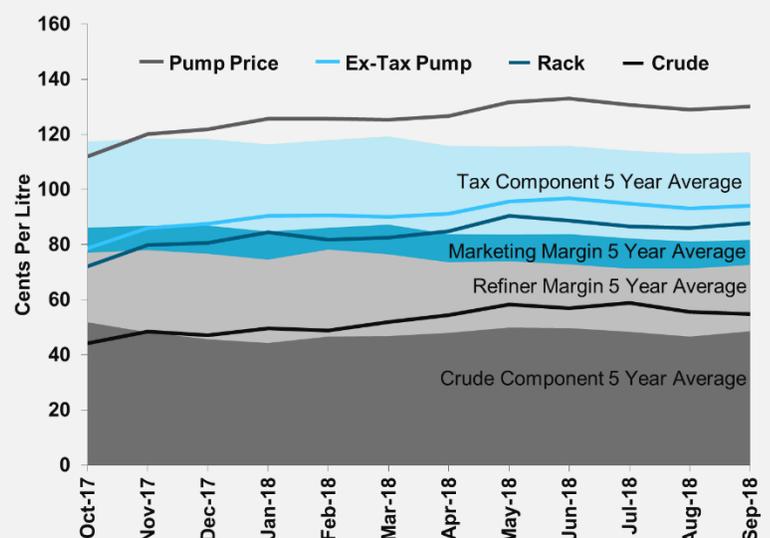


Figure 2: Canadian Average Diesel and Component Prices

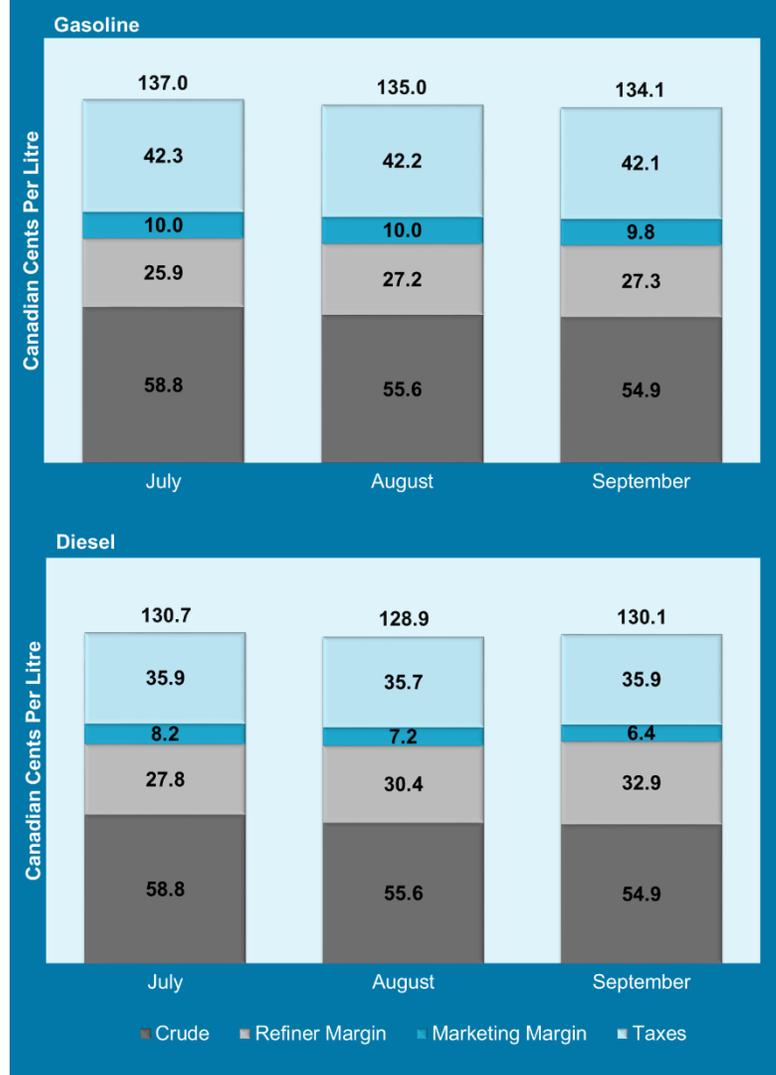


to 35.48 \$US/BBL at the end of September. Other Canadian benchmarks were also affected by the similar factors; Canadian Synthetic Crude (SCO) and Canada Light Sweet fell 20.3 percent and 23.8 percent, respectively. The SCO discount to WTI increased 12.49 \$US/BBL to 15.55 \$US/BBL by the end of last quarter, and similarly the Canada Light Sweet discount to WTI increased 14.58 \$US/BBL to 19.50 \$US/BBL.

Gasoline and Diesel Market Overview

Retail gasoline prices fell to a six-month low in September, and Canadian rack prices fell at a similar rate over that time; however, refining margins still averaged three cents per litre above their five-year average for Q3.

Figure 3: Canadian Average Gasoline and Diesel Price Components for 3rd Quarter 2018



Over the past quarter, wholesale prices increased similarly across the country, yet regional differences in crude prices led to expanded refining margins in the West and a contraction of refining margins in the East. The only wholesale prices to fall over the quarter were those in Ontario, which was likely attributable to the province’s exit from the cap-and-trade program in June.

Distillate inventories in many North American regions were below their five-year averages during the summer, a result of strong global demand and growing U.S. distillate exports. Consequently, diesel refining margins reached an eight-month high in September as buyers attempted to secure supply and to build inventories in advance of the winter heating season. Despite rising refining margins, retail diesel prices were down slightly as the drop in crude prices offset the change in margins.

There were minimal regional disparities in wholesale diesel prices this past quarter as western wholesale prices fell marginally while eastern wholesale prices rose following slightly higher regional crude input costs. Like gasoline, Ontario’s wholesale diesel prices exhibited the largest decline over the quarter, again attributable to the province’s withdrawal from the cap-and-trade program. (Figure 3)

Market Outlook for the Next Quarter

In the fourth quarter there is typically a softening of gasoline prices as demand wanes and markets fully switch to winter-blended gasoline. Although Canadian crude input prices will likely remain lower in the next quarter, there remains uncertainty as to where global crude prices will trend and how much each may effect refined product prices in North America. Should global crude prices continue to climb, this could offset any expected drop in retail prices over this time.

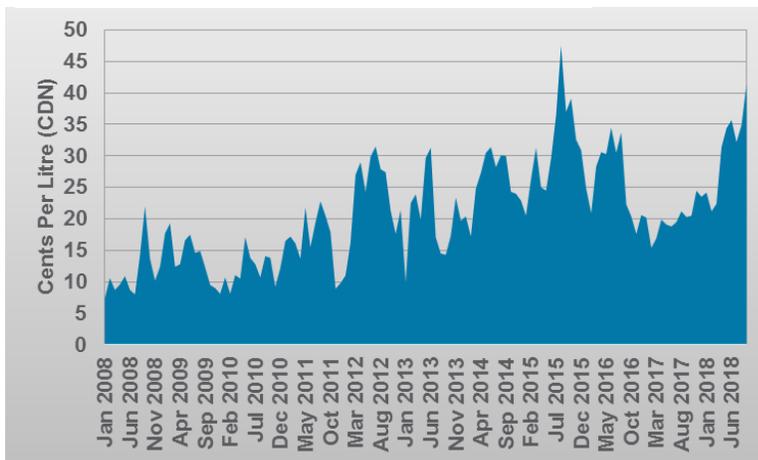
The outlook for diesel prices is typically rising prices into the fall and winter months, as agricultural harvests and the start of the winter heating season increases demand. Rising crude prices combined with diesel refining margins that are above seasonal norms means that retail diesel prices are likely to remain above their historical five-year averages for the remainder of 2018.

High Western Canadian Refining Margins Explained

Gasoline refining margins in Edmonton averaged 41.5 cents per litre in September, and reached as high as 45.3 cents per litre, its highest level since August 2015. **(Figure 4)** The factors influencing the rise in western Canadian rack prices over the last year have been varied: rising crude costs, a weakening Canadian dollar, pipeline constraints, and the compliance costs associated with environmental regulations. Most recently, however, western refining margins rose more sharply, driven higher by a simultaneous rise in wholesale prices and a decline in regional crude prices.

This most recent spike in western refining margins was primarily a result of the shutdown of the BP Whiting refinery just outside of Chicago. This facility is the 7th largest refinery in the U.S. and is a major consumer of western Canadian heavy crude. It was brought offline for scheduled maintenance at a time when there was little spare refining capacity in the region and overall refinery outages are much higher than normal for this time of the year. PADD 2 refinery utilization rates fell to just 78.9 percent in September from near 100 percent in August (EIA).

Figure 4: Edmonton Refining Margins, 2008-2018



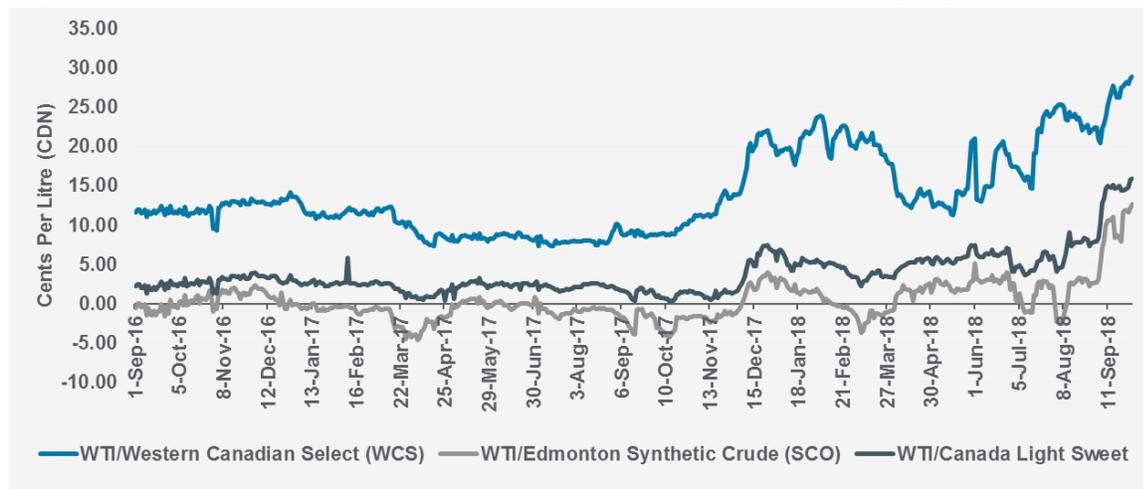
The BP refinery supplies refined products to the U.S. Midwest (PADD 2), a market that is logistically connected to western Canada and is within a competitive supply orbit with western Canadian refineries. This means that refinery issues in PADD 2 can cause western Canadian rack prices to rise because of the squeeze on refined product supply throughout the region.

In addition, PADD 2 refineries process a considerable amount of crude from western Canada, and so their idling causes demand for western Canadian crude to fall, crude inventories to rise, and ultimately western Canadian crude prices to decline. The Alberta Energy Regular (AER) reported that crude oil inventories in Alberta were relatively consistent between August 2015 and latter part of 2017, averaging roughly 8.6 million cubic metres, but have since risen to 11.9 million cubic metres.

Another variable in this equation is the continued rise of Canadian crude production. Average production in Alberta was 506,000 cubic metres a day in 2017; this has grown to 593,000 cubic metres a day by August 2018 (AER). Reduced demand combined with increased production is causing inventories to surge and is widening the price differential between western Canadian crude and other continental benchmarks. With little or no increase in take-away capacity through pipelines, and with the majority of that capacity only able to access the U.S. interior, Canadian crude producers must increasingly find other more expensive methods to move their production to strategic markets. Accordingly, the current differential between WTI and WCS not only reflects the difference in product quality, but also the difficulty in getting Canadian crude to where it can compete with other globally traded crudes.

The logistical constraints affecting western Canadian crude has affected the discount of both heavy and light production. Edmonton synthetic light crude (SCO) averaged one cent per litre above WTI in 2017, but averaged 12.7 cents per litre below WTI in September 2018. Similarly, Edmonton Light Sweet was 2.2 cents per litre below WTI in 2017, but that had expanded to 13.8 cents per litre below WTI in September 2018. **(Figure 5)**

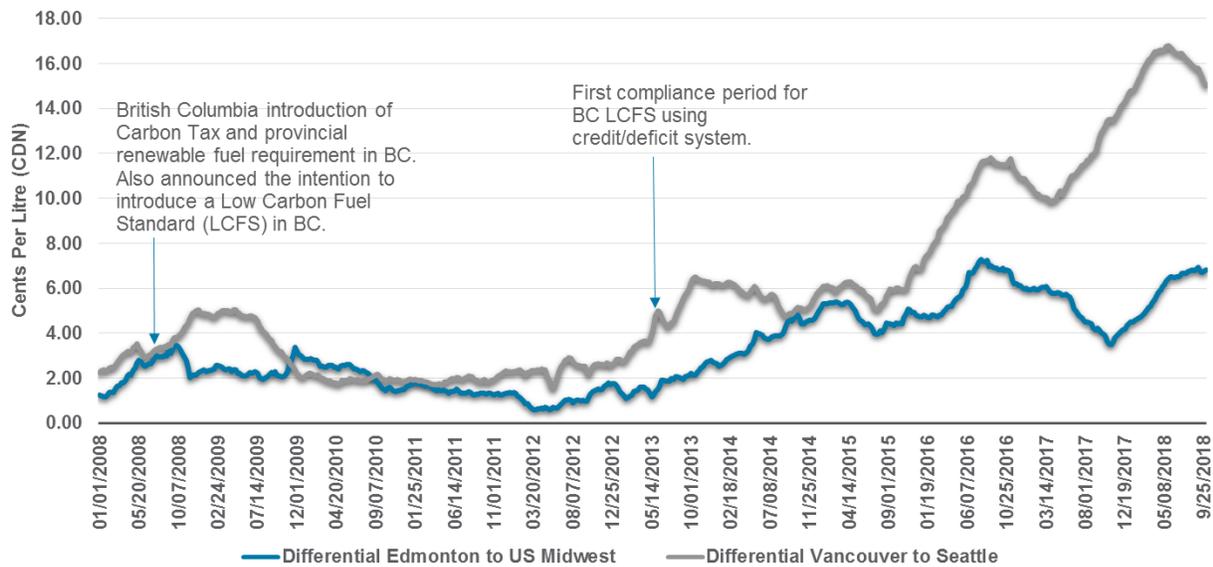
Figure 5: Western Crude Benchmark Differentials to West Texas Intermediate (WTI), 2016-2018



Another factor pushing up western Canadian rack prices and refining margins is British Columbia's low carbon fuel standard (LCFS) and its effect on rack prices throughout western Canada. A program such as LCFS can impact wholesale refined product prices by imposing costs on the refiner/wholesaler that are then passed along the supply chain in the form of higher wholesale prices. Alberta applies its own carbon pricing through a carbon tax, but it is applied at the retail level and has little impact on wholesale prices; however, Alberta's wholesale prices have been pulled upward by British Columbia's higher relative wholesale prices.

As wholesale prices in British Columbia rose (in part due to the costs associated with LCFS), this had the general effect of pulling Alberta's rack prices upward in much the same way that higher prices in the U.S. Midwest can affect prices in Alberta. The exchange-adjusted difference between rack prices in Vancouver/Edmonton and their respective U.S. markets has grown since the early part of 2013, following similar patterns that align with compliance periods and the increased stringency of British Columbia's LCFS program. **(Figure 6)**

Figure 6: Western Canadian Gasoline 52-Week Trailing Average Rack Price Differences to Respective U.S. Markets, 2008-2018



The current situation in western Canada is similar to the confluence of factors that caused the rise in western Canadian refining margins in 2015, which also happened to be triggered by a shutdown of the BP Whiting refinery. In 2015, the WCS discount to WTI grew over five cents per litre after the BP Whiting refinery came offline in August 2015, a result of reduced demand and a growing surplus of western Canadian crude. Similarly, the current WTI to WCS differential has increased 6.5 cents per litre over the last month. The difference in 2018 is that expanded refining margins had already been pushed above seasonal norms by the cumulative effect of a weak Canadian dollar and the compliance costs associated with a patchwork of environmental regulations.