Gasoline Recovers as Diesel Hits the Ropes

Mixed response to price signals.

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Data Sources for This Publication
CME Group
EIA

To discover more about the data sources used, click here.

Inadvertent Glut

The U.S. gasoline market is showing early signs of recovery in May as inventories fall and demand stirs to life. The diesel market is still hurting. From the latter half of March through the end of April refiners struggled to adjust their output to match the coronavirus-inspired collapse in transport fuel demand. Initially demand for diesel remained relatively buoyant as truck deliveries continued, while gasoline consumption tanked. Refiners responded by boosting diesel production at the expense of gasoline. This note explains how refiners' and product importers' response to the market crisis kept gasoline out of the emergency room but inadvertently created a diesel glut that's still building.

Previously

As we explained in a March note (see Early 2020 Refining Boost Hit by Demand Destruction), up until the third week in February United States refiners experienced a strong start to 2020 as they successfully navigated the International Maritime Organization's new ship's bunker regulations and benefited from higher gasoline prices caused by the use of vacuum gasoil to make low-sulfur fuel oil. Then came the onslaught of a double whammy in early March as COVID-19 began to seize up demand while a battle between Russia and Saudi Arabia over market share unleashed unwanted surplus crude onto the world market.

Rough Ride

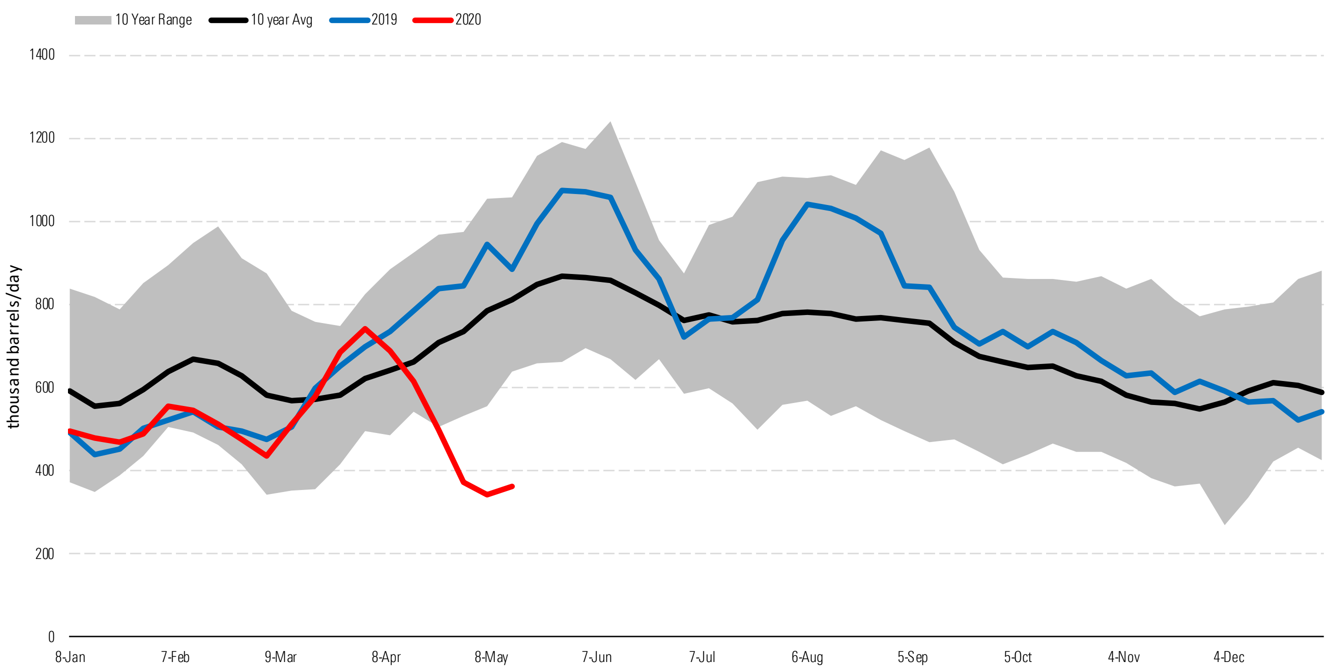
Based on the last three weekly reports from the Energy Information Administration, the U.S. gasoline market appears to have turned a corner without the drama of negative prices experienced in crude futures (see Crushing Cushing – Wider Impact of Negative Crude). That recovery comes after a rough ride as the lockdown crushed demand and CME Nymex gasoline futures prices touched a low of \$0.42/gallon on March 23. On the same day the six-month contango (a market structure meaning future prices are higher than for immediate delivery) in gasoline futures peaked at \$0.27/gallon incentivizing storage over immediate consumption. U.S. gasoline inventories peaked at a record 263 million barrels on April 17 and the four-week average gasoline demand bottomed out on April 24 at 5.4 million barrels a day, according to weekly Energy Information Administration, or EIA, data.

Rapid Response

In response refiners limited gasoline production as best they could—by increasing the diesel cut in their distillation units and favoring heavier crudes like Light Louisiana Sweet that produce more middle distillates. Refineries also cut crude throughput below 70% of capacity from closer to 100% in the buildup to a normal summer driving season. In addition, U.S. gasoline blenders slashed imports during

April, which helped balance the market. Exhibit 1 shows the seasonal pattern of gasoline imports since 2010 based on four-week average EIA data. The black line is the seasonal average between 2010 and 2019, the gray shaded area is the 10-year range, the blue line is 2019 and the red line is 2020. The data shows 2020 gasoline imports were just 45% of their 10-year average on May 8, falling by 49% since the end of March with a slight uptick in the first week of May.

Exhibit 1 Seasonal Four-Week Average U.S. Gasoline Imports



Source: EIA, Morningstar.

Recovery

The sharp fall in imports at the same time as refiners cut output helped balance the gasoline market and set the seeds for the early recovery we're seeing now. Gasoline inventories as of May 8 had fallen 4% since their peak in mid-April according to the EIA and the market contango structure returned to backwardation (the opposite market structure where prices are lower than today in the future–discouraging storage) in early May. Gasoline demand increased by 979 thousand barrels/day since April 24 to reach to a four-week average 6.3 million barrels/day on May 8. Gasoline production recovered 10% in the last three weeks to 6.8 mmb/d and CME Nymex gasoline prices have more than doubled since March 23 to average $0.92/gallon during the week ending May 15.

Diesel Lag

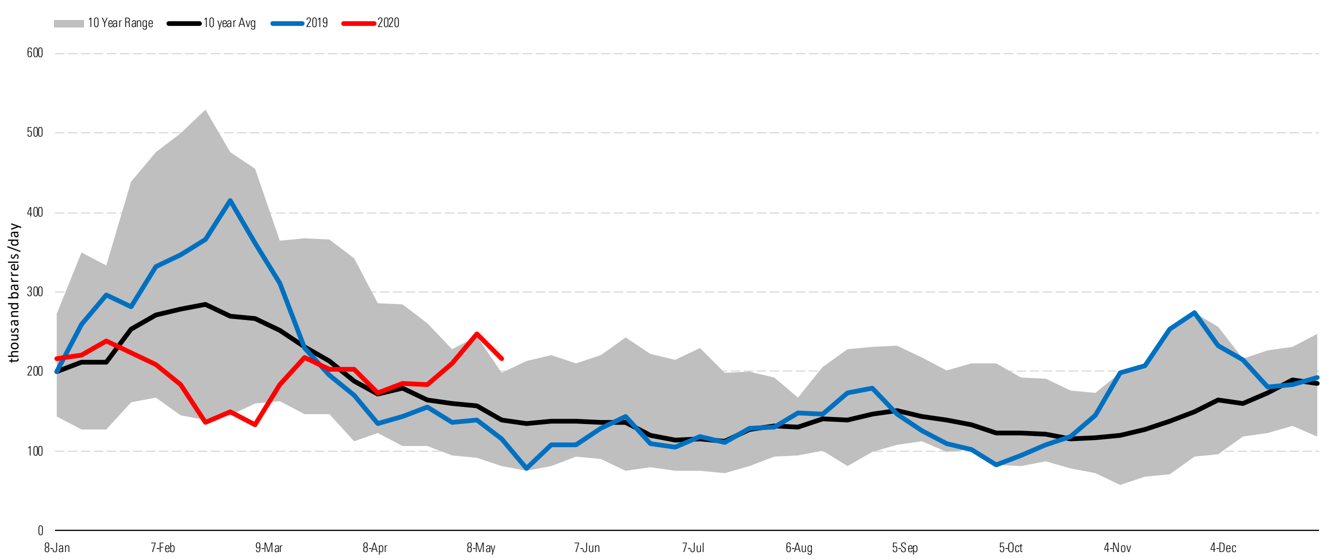
While gasoline is on the mend, the opposite is true for distillate, which primarily consists of diesel fuel for trucks and railroads. Gasoline demand dropped early and hard, causing refiners to respond with output cuts and blenders to slash imports. Diesel demand wasn't affected as quickly early on in the crisis, but then tanked in April just as refiners boosted output relative to gasoline. The early assumption was that truck and rail deliveries would continue through the lockdown leaving diesel demand more resilient. Higher prices in late March persuaded refiners to increase diesel supplies relative to gasoline. The collapse of the aviation market caused a transfer of jet fuel components to the diesel pool. The result was a 280 mb/d increase in four-week average distillate production between March 20 and May 1, according to EIA.

That supply boost came just as four-week average demand for diesel began falling–down about 1 mmb/d to just over 3 mmb/d between March 13 and May 1. Higher supply and lower demand spurred distillate inventories–up 27% to 155 million barrels between the end of March and the week ending May 8. Nymex ULSD prices were over $1/gallon on March 23, the day gasoline slumped to $0.42/gallon, and only recently retreated to bottom out at $0.61/gallon at the end of April before recovering to average $0.87/gallon during the week ending May 15.

Misread Signals

In contrast to apparent quick thinking by gasoline importers in response to the supply glut, EIA data indicates diesel importers misread the signals. Exhibit 2 shows four-week average total U.S. diesel imports reached 10-year seasonal highs on May 1 at 247 mb/d before retreating by 30 mmb/d in the week ending May 8. Diesel imports increased by 43% since early April just as demand was falling and production ramping up–leading to higher inventories and late April pressure on prices.

Exhibit 2 Seasonal Four-Week Average U.S. Diesel Imports



Source: EIA, Morningstar.

Mixed Response

The difference between gasoline, which appears to be recovering, and diesel that is still on the ropes can partly be blamed on the relative inflexibility of refineries to respond to market signals in real time. Adjustments to refinery configuration take time and changing crude yields require different crude inputs to be sourced. Complex U.S. refineries weren't designed to run at low throughput rates. So, while an early refiner response to tanking gasoline demand and prices appears to have paid off, the consequence was an increase in diesel production that came at precisely the wrong time. Refined product importers responded to the same price signals by slashing gasoline purchases and beefing up inbound diesel shipments. Those responses magnified both the positive impact on gasoline balances and the recent swelling of diesel inventories.

Imperfect Signals

This analysis demonstrates how imprecisely refineries can operate in a fast-changing market. Unsurprisingly, refiners prefer gently trending markets with consistent seasonality–a smooth and predictable path. What they're experiencing now is a period of extreme market turmoil. Yet refined product prices haven't approached negative levels and storage capacity hasn't completely filled. Emerging signs of renewed demand and price increases provide hope for a measure of recovery.

The crisis reinforces how complex the oil market is and how difficult it is for refiners to navigate often contradictory signals. Upcoming battles with peak oil demand and environmental pressures won't make the future any smoother.

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