



Francesco Tassello

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EXECUTIVE SUMMARY

- Slower than expected economic recovery from the COVID-19 outbreak will keep demand below historical trends in the short to medium term.
- Despite the economic impact of Covid-19 and reports of lower seaborne trade, so far there is little evidence of any serious decline in bunker sales.
- VLSFO sales now average 70% of the overall market, confirming how well the industry has transitioned from last year, another factor behind the steady drop in VLSFO prices this year.
- Declining oil supply due to cuts from OPEC+ and reductions in US production have supported the price recovery from an all-time low in April. Cuts in refinery runs and diminishing storage capacity for both crude and distillates have been the main drivers of prices and expectations for both HSFO and VLSFO.
- The impact of Covid-19 on refinery operations has enhanced the ability of refiners to supply VLSFO. Low gasoline demand means low fluid catalytic cracker utilisation, and this has freed up vacuum gasoil feedstock for use in the VLSFO bunker blending.
- Due to OPEC+ cuts, refiners have been turning to sweeter crude grades from Africa, Brazil and the North Sea, increasing the product slates of VLSFO compared to high sulphur fuel oil.
- Despite the underlying uncertainty surrounding demand recovery and high volatility, spot and period freight rates have adjusted to the underlying fundamentals
- Moving into 2021, runs will increase as demand levels recover and once the market is rebalanced, producers will be able to increase production again. HSFO prices are expected to weaken relatively to crude and other bunker products.
- Hi5 spreads look likely to remain narrow in the short term but widen in 2021 and afterwards.

Hi5 - THE ROCKET THAT NEVER DEPARTED

The Background

Seven months into 2020, the marine fuel market has endured three shocks that drastically changed its fundamental dynamics. First, the International Maritime Organization (IMO) capped marine fuel sulphur emissions content at 0.5%, down from 3.5% on 1 January. Second, in February, petroleum demand started to slide on the back of lockdowns in response to the Covid-19 pandemic. Lastly, in March, the Saudi Arabia-Russia oil price war caused crude prices to drop. Despite a mid-April OPEC+ agreement to cut production, crude prices crashed as the coronavirus pandemic response intensified, prompting an oil glut and oil tank storage to fill up.

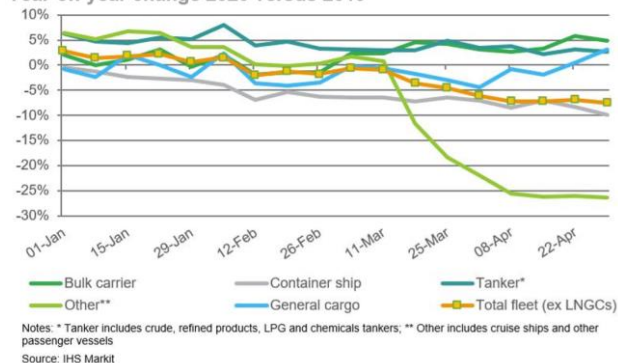
This threefold story and its consequences are summarised well by the evolution of the Hi5, the spread between very low sulphur fuel oil and high sulphur fuel oil. (*In Singapore the Hi5 is based on the differential between the Platts daily assessment price for the low sulphur 0.5% FOB Singapore Marine Fuel and the Platts daily assessment price for the high sulphur 380 CST Singapore Fuel Oil. The Rotterdam Hi5 is the spread between the Platts daily assessment price for 0.5% FOB Rotterdam Barges Marine Fuel, and the Platts daily assessment price for 3.5% FOB Rotterdam Barges Fuel Oil.*)

The IMO rules came into effect on January 1, requiring ships to sail with 0.5% sulphur fuel oil or have the sulphur removed using an exhaust gas cleaning system, or “scrubber”. Refiners and shippers alike regarded the transition with unease since nearly all the world's 3.2 million b/d of international bunker fuel consumption was accounted for by high sulphur (>0.5%) blends.

1st Half 2020

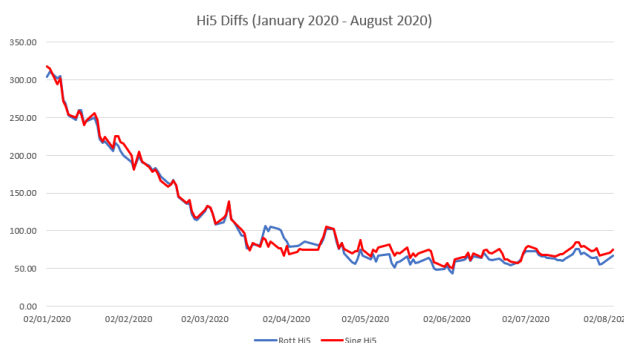
The COVID-19 impact on bunker fuel demand has been limited compared to the toll it has taken on road and aviation fuels. In fact, consumption by some shipping sector sub-segments has increased this year. Overall, though, marine bunker fuel consumption is down around 5% since the beginning of March, primarily driven by lower container shipping activity and a battered cruise liner industry.

Marine bunker fuel consumption
Year-on-year change 2020 versus 2019



However, the pandemic has had a far bigger impact on the shipping industry by helping to blunt the impact of the fuel specification change. Decreased global demand for gasoline and middle distillates (i.e. diesel and jet fuel) due to COVID-19 has also meant greater availability of low-sulphur feedstocks for blending to create bunker fuels. In fact, currently there may be too much middle distillate being blended into the VLSFO pool, making the market largely oversupplied.

Before COVID-19 rendered all other concerns immaterial, IHS Markit analysts expected the Hi5 to average from around \$300/mt to more than \$450/mt during 2020, with only slightly narrower differentials during 2021. However, only in December 2019 was the differential close to \$300/mt, narrowing ever since and has averaged less than \$75/mt in Singapore during April.



The previously predicted HSFO surplus amid the carriage ban introduction and high refining runs never materialised. OPEC+ cuts reducing supply of heavy crudes caused a sharp drop in refinery throughput, therefore dropping HSFO production.

Furthermore, as bunker suppliers have expected low levels of demand for HSFO after January, with vessels using scrubbers being the sole and biggest consumers, US refineries have started to take advantage of the discount price by buying large quantities of high sulphur fuel oil from Europe to run through their coking units.

Volumes to the US Gulf Coast from the Baltic Sea rose to 736,000 mt in June, up from 243,000 mt in June 2019, according to data intelligence provider Kpler. Baltic Sea volumes to the Amsterdam-Rotterdam-Antwerp region, however, fell by 60% to 524,000 mt in June 2020 from 1.308 million mt in June 2019.

This, plus the OPEC+ cuts have led to stronger-than-expected crack margins for HSFO, with the 3.5% FOB Rotterdam Barge crack last assessed at minus \$5.807/b on July 16, up from lows of minus \$33/b in November.

A further drag on the Hi5 was Saudi Arabia buying over 500,000 mt of HSFO in July, mainly 380 CST grade, since June, to meet its demand for power plants and desalination plants according to Platts. The country is expected to buy further 1-1.5 million mt/month of HSFO in July and August.

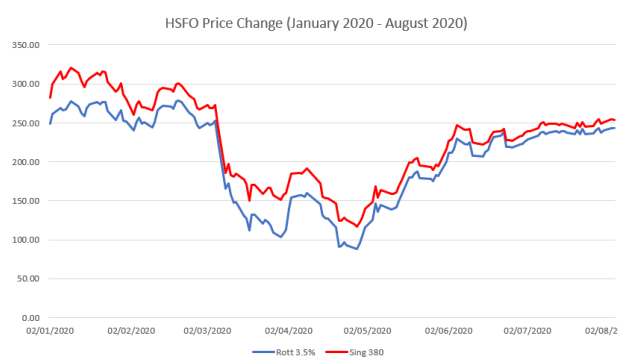
Saudi Arabia typically buys HSFO in summer from Europe and the Persian Gulf. The Persian Gulf is the supplier of fuel oil with Fujairah being the trading hub, while power plants and desalination plants concentrate on the Red Sea side of Saudi Arabia

HSFO and high sulphur straight-run fuel oil in Europe have been tight as cargoes are heading for the US, mainly US Gulf Coast. On the other hand, cheaper Singapore HSFO and lower backhaul Singapore/Red Sea freight rates compared to Persian Gulf/Red Sea freight, opened an arbitrage window.

Additionally, since late June a sharp decline in cargo volumes and an increasing surplus of tonnage in Southeast Asia and the Persian Gulf dampened Asian Aframax freight rates, making the arbitrage opportunity more attractive.

Strengthening further the HSFO market were also Bangladesh, raising August HSFO purchases by 280,000 mt, or 12%, since July,

and Pakistan buying 180 CST HSFO for July delivery for the first time since June last year.



In Singapore plentiful supplies have been weighting down the VLSFO market, with arbitrage cargoes constantly coming to Asia, increasing stocks that are already high.

In addition, over than 1.5 million mt of European and Eastern Russian cargoes coming into Singapore in August typically contain about 1% sulphur, which are expected to go into the LSFO pool at this moment. This is because medium sulphur fuel which traded at discounts of around minus \$95/mt to \$90/mt, if blended into HSFO will cause traders to lose \$20-\$30/mt, according to Platts data.

Singapore Government data reported onshore residue stocks declining to 23.5 million barrels as of July 22, the lowest since April 29. However, to complete the full picture 4-5 million mt of fuel oil floating around Singapore should be added, and the incoming 1.5/2 million mt from the west.

Furthermore, supply from Asian refiners has yet to pick up, after several trimmed production in the second-quarter due to bearish margins. However, traders interviewed by Platts predict that production may pick up if the market gets strong enough.

Meanwhile, the downstream delivered bunker market is yet to see a significant recovery in demand. However, in Hong Kong, at least one major supplier stated that the company will not offer any HSFO bunkers in the near term amid tight supply.



All these factors are weighing heavily on both the Singapore and Rotterdam Hi5s which are still a far cry from the peaks seen at the beginning of this year.

THE RISE AND FALL OF PEAK SCRUBBER

The Rise

Ahead of the IMO 2020 deadline, shipowners faced three main choices to comply with the new 0.5% maximum share of sulphur exhaust in their bunker fuel.

The first option involved switching to marine fuels containing 0.5% sulphur content or less and accepting higher fuel costs as well as variations in fuel properties, as suppliers released a plethora of blends onto the market.

The second was to retrofit scrubbers on their vessels, which would thus allow shipowners to continue burning high-sulphur bunkers.

While scrubbers allow charterers to run a vessel on cheaper fuel oil, a scrubber unit is priced between \$2 million up to \$6 million, depending on whether it is retrofitted or installed as part of a new build. In addition, a ship-owner would also consider the cost of dry-docking, which involves taking the ship out of the water to install scrubbers, the opportunity cost of having a vessel off the market, as well as ongoing maintenance costs and disposal of waste chemicals.

The third option was to switch to lower-carbon alternatives such as biofuels or LNG. This has not been widely adopted so far due to high costs of bunker and conversion to LNG, as well as a lack of infrastructure.

Even though IMO 2020 was first announced in 2008, scrubber orders started to be received only in 2017 for newbuilds and in 2018 for installation on existing vessels, which has resulted in a flurry of orders in the run-up to the deadline.

In January 2020, scrubber producer and installer Wartsila estimated total orders for about 3,000/4,000 vessels, approximately just 10% of the applicable fleet of some 40,000 vessels worldwide that used to run just on HSFO.

In the first quarter of 2020 the scrubber bet seemed to pay off as tankers across both crude and refined products segments saw time charter equivalent earnings peaking for scrubber-fitted vessels, earning a premium compared to their non-fitted equivalent vessels.

According to Gibson Research, premiums have ranged between \$14,000 and \$20,000 per day, depending on the vessel's characteristics and price of fuel on board.

The Fall

IMO 2020 may turn a large proportion of shipping fuel demand away from HSFO to cleaner fuels, Rotterdam still saw HSFO demand equate to 25.9% of total bunker sales in the first quarter, according to data from the port authority.

However, less supply reaching the bunkers sector has boosted HSFO bunker prices at Rotterdam, Europe's largest hub. In particular, the June average in Rotterdam priced above Fujairah for the first time since July 2013 according to Platts data.

Typically pricing below other global bunkering hubs, Rotterdam's discount has narrowed since April, showing its relative strength. Platts data shows that the spread between delivered prices at Singapore and Rotterdam has narrowed 44% since April, while the spread between Panama Canal ex-wharf prices narrowed 85% in the same time period.

In addition, as suppliers cleaned out their storage tanks and barges from HSFO to make space for VLSFO prior to the IMO 2020 regulation, HSFO became difficult to source in some international ports, prompting shipowners

with scrubber-fitted ships to plan spot purchases carefully.

With estimates of roughly \$2 million per vessel, scrubbers come with significant financial risk. A Hi5 value below \$50/mt makes the financial investment of scrubbers a difficult one to economically justify. In addition to that, several ports across China, Europe, the US and Singapore have banned the use of open-loop scrubbers, requiring ships to switch to compliant fuels when they are within port limits. If the currently low availability of HSFO outside some the major ports is considered, it is not surprising to see an overall decline in scrubbers orders.

Marine equipment manufacturer Wartsila reported a decline in new marine orders, largely due to a lack of scrubber investments. According to a Platts survey, International Seaways has postponed three planned scrubber installations to coincide with scheduled dry docking in 2021. Scorpio Tankers is delaying the installation of 19 scrubber retrofits until at least 2021, while Scorpio Bulkers has 13 scrubber installations on hold. Stolt-Nielsen was also among those to announce cancellations.

Retrofitted scrubbers have been the most cancelled/postponed, as it could take more than four years to pay back the financial outlay. However, if the exhaust gas cleaning systems are installed on a newbuild the repayment period is estimated to be between 1.5-2 years mostly due to lower fitting costs and no off-hire time. Moreover, a new vessel has a longer life to make the returns worthwhile. Yet, with a narrower than expected Hi5, these estimations could prove a lot less attractive than once thought.

According to Platts analysts, at the beginning of the year there were 2,200 scrubbers in operation. However, analysts estimate that by the end of the year the operational scrubbers will be around 3,000, against pre-pandemic estimates of 3,500.

THE FUTURE: OPPORTUNITIES AND CHALLENGES AHEAD

In the short term, the narrower VLSFO-HSFO differential, and overall lack of a supply crunch for low-sulphur bunker fuel, is not likely to change anytime soon. Refinery throughput and

global demand will be negatively affected by COVID-19 for at least another year, effectively giving the refining and shipping industries time to ease into the new specification.

However, the recent announcement from OPEC+ to roll back production cuts to 7.7 million b/d from August could see balances switch again if refiners choose to cautiously increase refining runs, especially increase in heavier crude input and therefore heavier product percentage.

On the other hand, the longer term picture may be different. Currently low levels of scrubber installations will have consequences on the ageing tanker fleet being gradually decommissioned. If this is paired with rising oil prices, the Hi5 differential may widen again.

This might explain the reason of relatively low levels of scrubbers installations postponing compared to cancellations. As Euronav CEO stated in an interview earlier this year, “There is a big difference between retrofitting the fleet and buying tonnage with scrubbers already installed. And we have recently bought four vessels that will be delivered to us later this year or early next which are scrubber-fitted.”

Finally, it could be argued that HSFO doesn't have a long-term future due to international environmental regulations aiming to reduce carbon emissions by at least 40 per cent by 2030 from 2018 levels and achieve carbon neutrality by 2050. In this regard it should be remembered that the current lack of economically and technologically feasible alternatives, and the relatively long lifespan of vessels, will keep 0.5% compliant fuel oil as the fuel of choice for the majority of the shipping industry in the decades to come.

