ONYX

CAPITAL GROUP

US Crude Export Benchmark: Methodology

Abstract

The current availability of a liquid and accurate hedging tool for exporting crudes from the US into foreign regions is insufficient. This document considers the available contracts, their liquidity and their appropriateness to act as a hedging tool. The Onyx US Crude Export Index uses a basket of contracts which provides a more comprehensive and basis-reducing method for US exporters to hedge.

Introduction

With an increasing amount of production from the US, and the country now becoming oil exporters, the need for an accurate hedging tool has become more necessary.

Once the ban on US exports was lifted in 2015, Europe very quickly became a reliable and consistent output for this new flow of crude. Over the last four years exporters have been steadily increasing volume to Europe as export capacity grows, whilst import facilities have been built to accommodate consistent arrivals. The oil exported has been priced competitively given the disparity between WTI priced crudes and European, opening an arbitrage for crude traders to exploit. Despite a relative narrowing of the arbitrage margin in the last year, exports to Europe have nevertheless increased at a considerable rate, gaining a foothold in the market as a reliable source of light sweet oil.

Approximately 850,000 b/d of US crude has moved across the Atlantic in H1-2019, huge volumes compared with 550,000 b/d for the whole of 2018 and 300,000 b/d in 2017. Most US crude exports are delivered as the grade WTI Midland, meeting a high-quality specification from shale oil fields. Given the shale oil production has moved away from independent producers to established oil companies, more and more of the new oil production is managed by companies that have ownership of the logistical chain hence the export economics remain such that the grade can remain competitive with European substitutes produced locally. This is evidenced by trades in the Platts MOC e-window which have seen physical trades of WTI Midland deliverable on a DAP basis at discounts to Forties and Ekofisk despite superior quality.

For these reasons, we assume that the specification of crude oil exported into Europe is light sweet crude. This is due to the main increase in production of crude in the US is of a light sweet specification in the Gulf Coast, US refineries are geared to take slightly heavier and more sour barrels whereas Europe is geared for lighter and sweet crudes.

The current availability of a liquid and accurate hedging tool for Shale production is insufficient. This document considers the available contracts, their liquidity and their appropriateness to act as a hedging tool. The Onyx Shale Crude Oil Index uses a basket of contracts which provides a more comprehensive and basis-reducing method for Shale producers to hedge.

Proposal

US Crude Export Index (West of Suez) = 65% M2 Dated + 25% M1 WTI Houston + 10% M1 TD3

US Crude Export Index (East of Suez) = 45% M2 Dubai + 20% M2 MOP J + 25% M1 WTI Houston + 10% M1 TD3

Justification

The main export hub in the US is the US Gulf Coast. The benchmark crude oil that is priced off the US Gulf Coast and is also light sweet in specification is WTI Houston crude oil, hence, this grade holds 25% of the benchmark.

Secondly, we must look to the export market. Due to the concept of arbitrage, we assume that physical traders will move barrels out of the domicile country into a foreign country if the transaction is profitable. To do this, we must look at the basis for pricing light sweet crude oil outside of the US. This contract differs for different regions. For Europe, the appropriate contract is Dated Brent, and the main competing grades will be those that track the Dated Brent benchmark. For Asia, the appropriate contract is Dubai crude, and the main competing grades will be those that track the Dubai benchmark. Hence, the value of your export will be linked directly to the price of Dated Brent or Dubai (depending on the export market the physical trader is placing the barrels): as Dated Brent/Dubai rallies, the US crude oil market will look more attractive to European/Asian consumers of light sweet oil.

For Europe, Dated Brent provides a good representative benchmark, as its quality specification is similar to US's WTI. The Eastern Dubai benchmark, however, is more sour in its nature and so we include MOP J into the pricing of the export benchmark East of the Suez Canal to allow for a lower sulfur representation.

Finally, we include the transatlantic arbitrage price. The reason for this is because if the cost of moving the crude into the exporting market is more expensive that the price differential between the two grades, the arbitrage will not be profitable. Hence, we cannot look at the exporting market's price alone. Because the exact route is already captured within the individual contracts, we will use TD3. TD3 is the basis route for freight because it combines good liquidity and a good representative benchmark for global freight prices.

Conclusion

This document discusses the need for a better hedging strategy for US oil exporters, and has considered a more effective hedging method based on three major components:

1. Basis
2. Specification
3. Competing markets

After consideration, the index is a better reflection of US export prices and can track the prices closer than any other vanilla swap available, and therefore presents as a better hedge for US exporters.

References

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Product	**Description**
WTI Houston	WTI Houston (Argus)
Dated Brent	Dated Brent (Platts)
Dubai Crude	Dubai Crude Oil (Platts)
MOP J	Japan C&F Naphtha (Platts)
TD3 Freight	TD3C FFA Middle East Gulf to China (Baltic)

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