Our View: A Perfect Squeeze – The Option-Driven Crude Price Rise

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To date in April, crude prices have risen by $7.80 per barrel. Most writers, economists, and traders attribute the increase to the prospect of a tightening market. Indeed, the International Energy Agency warned of this tightening and of higher prices in its April *Oil Market Report*.

These views are almost certainly wrong. The price increase has everything to do with quants and options hedging. Prices have increased as the traders who wrote options on June crude bought futures to hedge their positions.

The Saudi oil minister and his fellow travelers timed their April 2 production cut announcement perfectly. June Brent settled at $78.89 per barrel on March 31. On that date, 558,274 calls with strike prices at $80 per barrel or above were outstanding. Data published by the InterContinental Exchange indicate that traders who had written $80 June calls would have needed to own 11,852 June futures contracts to be delta neutral. Traders who had written June calls with strike prices between $81 and $90 would have needed to be long a further 28,341 futures.

When markets reopened on Monday, April 3, the situation had changed dramatically as June futures rose by $5 per barrel to $84.93. To remain delta neutral, the writers of $80 calls would have had to be long 16,888 futures, an increase of 5,036 contracts. Traders who had written June call contracts for strike prices between $81 and $90 would have had to be long 54,717 contracts, an increase of 26,376. Total additional futures purchases would have been 54,777 contracts.

On April 3, though, those hoping to buy futures to cover the calls they had written confronted a market liquidation as open interest in the June contract declined by more than twenty-two thousand contracts. **The OPEC+ announcement, in other words, was exquisitely timed to affect those who write calls on futures.** The consequence, as any student of financial markets would understand, was **a perfect squeeze.**

Prince Abdulaziz's squeeze has continued through April as the number of outstanding options has slowed the liquidation of futures held to cover the June 2023 Brent options. Traders short $80 and even $90 calls have been forced to purchase more futures, supporting the price. This trend can be seen in Figure 1 (page 2).

The figure shows open interest in the June 2023 Brent futures contract from May 1, 2022, through April 14, 2023, and in the June 2022 futures contract from May 1, 2021, to April 30, 2022. The vertical line marks April 1. We note that open interest in the June contract is seventy percent higher in 2023, even though the total open interest in all Brent contracts has only increased by twenty percent.

Figure 1 also illustrates the normal pattern of contract liquidation during the final month of trading. In 2022, open interest in the June contract dropped by forty-two percent during the first two weeks of April. In 2023, open interest declined by only twenty-one percent through the first two weeks.

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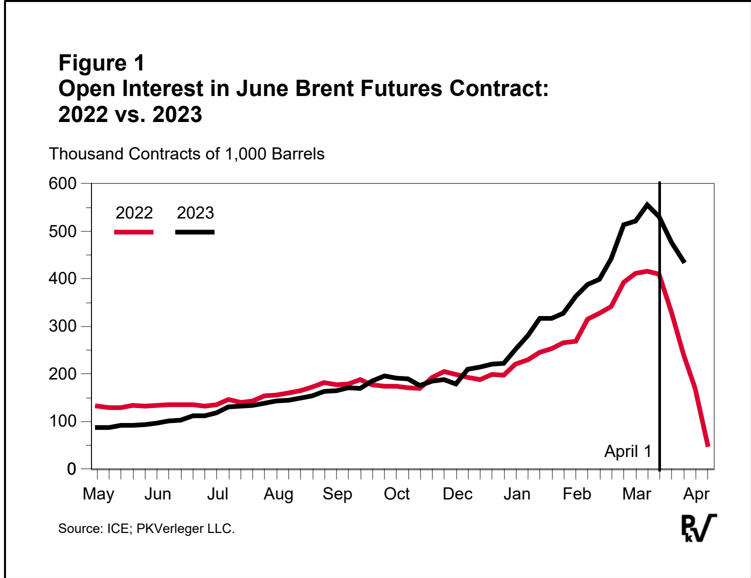
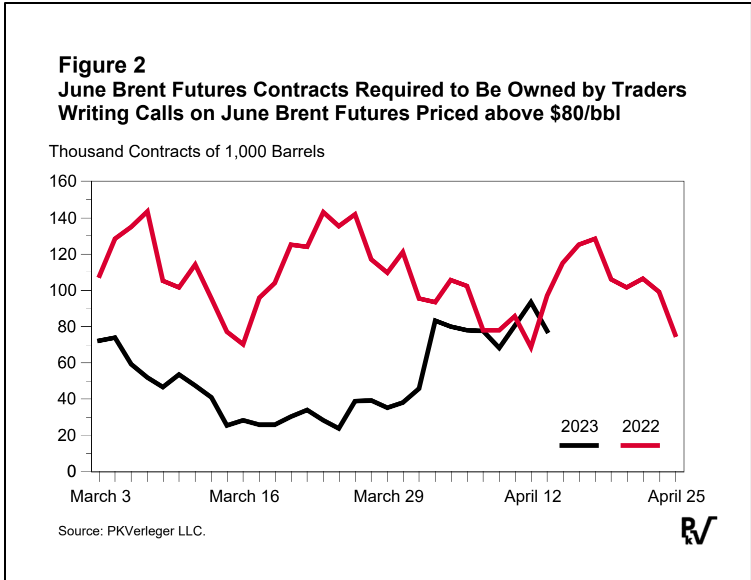
The theoretical demand for June futures can be seen in Figure 2. This graph shows the contracts required to hedge contracts with a strike price above $80 per barrel by day from March through April 14. Also shown are observations for futures contracts that needed to be purchased for June 2022 contracts in March and April to remain hedged for strike prices exceeding $80. The April 3 increase associated with the Abdulaziz squeeze is apparent. Approximately twenty thousand additional futures contracts must be purchased before the contract expires if prices remain near $90. That number rises to an astounding one hundred fifty thousand contracts should June Brent approach $100.





The risk of a short-term spike to $100 should not be discounted because open interest normally declines as a contract approaches expiration. We display this in Figure 3 (page 3), which shows the daily open interest in the June 2023 and June 2022 crude oil futures contracts during March and April.

The managers of the ICE Brent contract will probably take steps this week to force the liquidation of the June 2023 Brent futures. To do this, they may have to prompt those who hold June 2023 options contracts to liquidate those positions. In acting, the ICE managers will likely be recalling the disaster that befell the CME when crude prices fell to negative numbers in 2020. The ICE regulations allow them to forestall such debacles.

Prices will likely continue to increase, though, as the traders who wrote calls cover their positions. This is an interesting squeeze.

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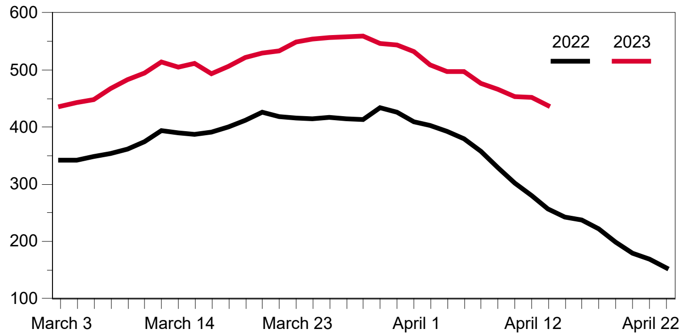
Figure 3
Liquidation of the June 2022 and 2023 Brent Futures Contracts in March and April



Source: ICE; PKVerleger LLC.

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