How Brent Crude Oil's Dominance Could Come To An End

By **Andrew Hutcheon and George Garthwaite** (October 22, 2020)

Andrew Hutcheon

George Garthwaite

Following the upheaval in the early months of 2020 — when demand for crude oil collapsed, oil prices tumbled and the market valuation of West Texas Intermediate, or WTI, entered negative territory — prices stabilized between June and September, at roughly $40 to $45 per barrel.

However, production cuts by the Organization of the Petroleum Exporting Countries, along with leading oil-producing ally countries, are still tapering off, despite increasing COVID-19 infections and persistent low demand. The small recoveries made thus far are now under threat, with prices dropping below $40 per barrel, and Brent crude hitting a four-month low on Oct. 2.

With all eyes presently on the oil price indices, we consider the world's leading crude oil benchmark, Brent. We look back to its roots, and consider how it gained its dominant market status. We study the underlying strengths that have driven its popularity, and the weaknesses that may precipitate a decline in its use — as well as the viability of other benchmarks that could take its place.

What is Brent?

Brent is an oil field named after a species of goose. In the 1970s, Shell U.K. Ltd. named all of its U.K. oil fields alphabetically, after water birds, in order of discovery.[1]

The crude oil from the Brent field, which is located in the East Shetland Basin of the North Sea, is classed as a sweet light crude, which is easier to refine, producing higher quantities of less dense petroleum products such as gasoline and jet oil. These qualities tend to make demand more consistent.

As production at the Brent oil field began to falter, other North Sea crudes were added into the blend that makes up today's benchmark. The daily price of a barrel of Brent crude is now dictated by the most competitive of five crudes: Brent, Forties, Oseberg, Ekofisk and Troll — known collectively as the BFOET grades.

What is the Brent crude oil index?

Price reporting agency Platts Inc. offers the most widely traded index for physical Brent trading — though other agencies, most notably Argus Media Ltd., offer similar indices. At Platts, physical Brent trading is focused around two prices: dated Brent (short-term contracts for delivery between 10 days and one month) and forward Brent (longer-term contracts between one and four months).

These trades are either made on cargoes of 600,000 barrels or on partials of 100,000 barrels. The futures market, traded on the Intercontinental Exchange, also allows trades in Brent futures for a maximum of 96 consecutive months ahead in units of 1,000 barrels.

Further financial instruments have emerged. Contracts for difference create a bridge

between dated Brent and forward Brent, by hedging against floating prices with a fixed price differential. Exchange of futures for physicals handle the risk when converting futures contracts to physical contracts.

How did Brent emerge as the largest crude benchmark worldwide?

The international oil trade emerged rapidly after Edwin Drake's successful drilling for oil in Pennsylvania in 1859, with the first shipment of oil to London aboard the Elizabeth Watts in 1861. The 20th century oil trade was dominated by cartels. Initially integrated international oil companies dominated, with sales between related production and refining divisions.

Much of the production became nationalized after the birth of OPEC, with national oil companies imposing controlled prices.[2] Although some market diversification occurred alongside these changes, it was not until the late 20th century that international markets started to set prices.[3] The Brent benchmark began to be widely adopted in the mid-1980s, and quickly emerged as the leading crude oil benchmark.

Today, most crude oil traded globally is directly or indirectly priced on Brent. But Brent's position as the world's most-used benchmark is perhaps surprising considering that its production is often much lower than other oil exporting regions.

Indeed, European imports of U.S. crude are frequently larger than the whole of North Sea production.[4] Likewise, the physical characteristics of Brent crude are not the driving factors behind the benchmark's ascendancy. Instead, its initial success can be attributed to several factors.

Ownership Diversification

Ownership diversification has been crucial in developing market sophistication surrounding Brent, and market participants' faith in the benchmark.[5]

If the crude underlying a benchmark is produced by limited sellers, this can make it more vulnerable to market abuse, exposing participants to higher levels of risk[6] and ultimately hindering development of complex market structures.[7] In the U.K., under the Thatcher government, the energy market was opened up to competition, and the number of sellers has increased as new oil fields and different crudes have been added to the Brent basket.

U.K. Legal Environment

The robust U.K. legal system, low levels of political risk and a supportive and consistent tax regulation environment have been important in Brent's success.[8]

Transparency has also been important, particularly in contrast to OPEC producers — although shifting demand towards Asian markets has undermined Brent's transparency, as Asian buyers often prefer not to disclose details of their trades.[9]

Market Position

Being a waterborne crude located in the European export-import market, but covering both the Asian and American markets, enables Brent to react quickly to market conditions and shift with demand, facilitating trade between the world's major oil players.

As it is extracted offshore, Brent has global access to shipping — making it easier to price

against other crudes — as well as port and storage capacity, both onshore and in floating storage.

Volume of Trades

Physical players, such as producers, refiners, consumers and physical traders, make a large number of trades in Brent futures contracts. Their overall share of total open interest in Brent futures significantly outweighs their commitments in other major crude futures.[10]

As well as protecting Brent from the pricing instability which can be caused by speculators, this also means that Brent reflects global physical oil market fundamentals more accurately than its rivals.

What challenges lie ahead for Brent?

However, Brent faces challenges that could topple its position as the leading global crude benchmark. Foremost among them is declining production, which threatens its liquidity.

Over the years Brent's falling production has been primarily addressed by adding further crudes into the Brent basket, forming today's BFOET grades. But there are concerns that production could fall below minimum levels required to ensure the benchmark's liquidity.[11] There has been much speculation about which further grades might be introduced to address falling production, but none of these are without their issues.

The Johan Sverdrup field off Norway, which produced approximately 350,000 barrels per day at the end of 2019, is enough to shore up concerns regarding Brent's liquidity. But it is heavier and sourer than other BFOET grades.

While a sulfur deescalator was introduced into price assessment of Brent for Forties crude, Forties' gravity is like the other Brent grades, and pricing a heavier grade in the dated Brent assessment is a much greater challenge. Some of these challenges may be offset by increased demand in Asia, where more sophisticated refiners are equipped to handle sourer grades.

Further afield, Urals crude is a relatively accessible abundant grade to mitigate liquidity concerns, but it also comes with issues relating to its gravity and sulfur content, as well as a lack of deal transparency and the complicated geopolitical context. West African grades are more remote and less transparent than the Urals, with frequent disruptions to supply and different loading cycles.[12]

WTI is a sweeter and lighter crude than those in the Brent basket. Trades in free-on-board WTI once it has reached U.S. Gulf Coast are already priced against the Brent benchmark. The introduction of delivered WTI into the Brent basket therefore appears viable.[13] However, differences in abilities to hedge — done under Brent by way of a forward Brent contract and contracts for differences — and in established loading programs are still to be reconciled.

One delivered grade has been introduced into the Brent assessment to prop up liquidity. In February 2019, Platts announced the inclusion of delivered Rotterdam offers of Brent oil cargoes into its flagship dated Brent benchmark, starting from Oct. 1, 2019.[14]

However, threats to liquidity will continue. The U.K.'s production cost per barrel for crude oil is one of the highest among oil-producing nations.[15] There are challenges to operators

producing and transporting oil with aging infrastructure and increasing environmental regulation.

Meanwhile, the tide of energy transition to renewables in Europe and the U.S. applies commercial, social and political pressure to oil producers to diversify their portfolios and commit to net zero carbon emissions.

A recent University of Aberdeen study prompted by the COVID-19 pandemic assessed that up to 28% of North Sea crude would be uneconomical to extract, even where Brent trades as high as $45 per barrel.[16] The future of oil producers in the U.K. continental shelf is far from certain.

Could there be a shift away from Brent?

WTI is used to price most oil production in the U.S., and has similar characteristics to those that propelled Brent into becoming the world's leading benchmark. It is highly liquid in a market with diversification of ownership, is subject to relatively low political risk and has strong legal and tax regimes around it, as well as high transparency. The U.S. is also the largest oil producer and consumer worldwide.[17]

But WTI faces one fundamental issue that has historically made it a poor indicator of global oil prices, undermining its ability to act as a global benchmark: It is a pipeline crude with delivery at landlocked Cushing, Oklahoma. While pipelines can transport the oil from Cushing, it is only exportable overseas once it reaches the Gulf Coast.

Likewise, storage constraints at Cushing can be of concern. These factors have meant WTI has decoupled from global benchmarks at various times over the last decades. Undersupply at Cushing has led to WTI trading at a disproportionately high premium, while oversupply put WTI into contango, trading at a discount to other international benchmarks.

For example, in the early 2010s, spurred by increased U.S. shale production and a ban on crude exports, oversupply at Cushing led WTI to trade on average at a $17-per-barrel discount to Brent.[18] More recently, WTI made headlines by going negative in April of this year.

The causes of this contango, related to the rules of the index including deadlines to take physical delivery and messaging from the exchange, exacerbated by shortages in storage and inflamed by a stampede of greenhorn speculators, have been much discussed. While sensational, this dip has not been repeated in subsequent months.[19]

Looking eastwards, the Dubai benchmark is ideally placed to take advantage of swelling Asian consumption, being a waterborne crude from an oil-rich region between Asia and the refining centers of Europe and the U.S. In 1988, when key OPEC countries started pricing their crude exports to Asia based on Dubai crude, the benchmark quickly became the pricing basis for millions of barrels per day and became known as the "Brent of the East."[20]

Nonetheless, the paper market underpinning the Dubai physical market has not evolved to the same extent as Brent or WTI. In 2014, the Dubai Mercantile Exchange estimated that the size of the Middle East-Asia derivatives market is less than 4% of the markets in America and Europe.[21] Considering the size of the Dubai futures market, and since Dubai futures pricing is derived from Brent futures prices, it is difficult to contend that Dubai is a true global benchmark.

With China soon to be the world's largest oil consumer, and consumption in Asia forecast by OPEC to reach more than 46 million barrels per day by 2040,[22] it is keen to establish a global benchmark to take advantage of this growth. The Shanghai International Energy Exchange crude oil futures contract was launched in 2018, with a futures index following a year later.

However, several factors count against it for now, including the denomination in yuan, making foreign participants subject to China's capital controls; China's geopolitical ambitions in the region; the location and ownership of designated bonded storage facilities; and comparatively limited numbers of buyers.

These factors, along with challenges of transparency, liquidity and ownership diversification, each contribute to make it little more than a domestic or regional index for now.[23] But these are early days, and as the yuan and China take center stage in the world economy and the oil market, that may well change.

Conclusion

Brent's strengths have made it the leading crude index, widely perceived as the most accurate barometer of oil prices globally. However, it faces its own challenges, key amongst them being declining production threatening liquidity. It also faces overseas competition from a resurgent WTI, and from the Shanghai International Energy Exchange, whose growth is inexorably tied to China's ascendancy in the market.

Brent remains the world's leading global crude benchmark for the present — but it must continue to adapt. Traditionally, a benchmark is a builder's reference point chiseled into stone. Brent cannot ever afford to be set in the same way.

Andrew Hutcheon is a partner and George Garthwaite is an associate at Watson Farley & Williams LLP.

[1] Why we are not now writing about the Auk crude oil index is probably down to oilfield size and importance.

[2] P. Horsnell and R. Mabro, "Oil Markets and Prices: The Brent Market and the Formation of World Oil Prices," Oxford University Press (1993).

[3] B.F., "What is Brent crude?" (published Oct. 29, 2018), The Economist.

[4] A. Imsirovic, "Benchmarks face 2020s evolution" (published Dec. 10, 2019), Petroleum Economist.

[5] P. Horsnell and R. Mabro (1993).

[6] D.M.G. Newbery, "The Manipulation of Futures Markets by a Dominant Producer" (1984), in R.W. Anderson (ed.), The Industrial Organization of Futures Markets.

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[8] I. Marten and B. Jimenez, "Brent Crude Oil: A Benchmark In Decline?" (published September 2015), The Boston Consulting Group.

[9] V. Katona, "The World's Biggest Oil Benchmark Could Change Forever" (published February 2018), https://oilprice.com/Energy/Oil-Prices/The-Worlds-Biggest-Oil-Benchmark-Could-Change-Forever.html.

[10] M. Wittner, "Brent: the world's crude benchmark" (published September 2020), The Intercontinental Exchange.

[11] A. Imsirovic, "Changes to the Dated Brent' benchmark: more to come," Oxford Energy Comment, The Oxford Institute for Energy Studies (March 2019).

[12] I. Marten and B. Jimenez (2015) and V. Katona (2018).

[13] A. Imsirovic (March 2019).

[14] "S&P Global Platts to Reflect CIF Rotterdam Offers in Dated Brent Benchmark from October 1, 2019," S&P Global Platts, https://www.spglobal.com/platts/en/about-platts/media-center/press-releases/2019/022519-platts-to-reflect-cif-rotterdam-offers-in-dated-brent-benchmark-from-october-1-2019.

[15] Assessed in 2016, https://knoema.com/nolsgce/cost-of-crude-oil-production-by-country-and-crude-oil-prices.

[16] T. Paraskova, "33% Of North Sea Oil Is Now Too Expensive To Extract" (published May 20, 2020), https://oilprice.com/Energy/Crude-Oil/33-Of-North-Sea-Oil-Is-Now-Too-Expensive-To-Extract.html.

[17] U.S. Energy Information Administration: production based on 2019 statistics; consumption based on 2017 statistics.

[18] I. Marten and B. Jimenez (2015).

[19] For further discussion of the impact of COVID-19 on oil markets, see B. Fattouh and A. Economou, "Is the Worst of the Oil Crisis Behind Us?," The Oxford Institute for Energy Studies (May 2020) and B. Fattouh and A. Economou, "After the Initial Oil Rebound: What Next for Market Fundamentals and Prices," The Oxford Institute for Energy Studies (September 2020).

[20] P. Horsnell and R. Mabro (1993).

[21] "Futures Insights: Overview of Sour Crude Derivatives" (August 2014), Dubai Mercantile Exchange.

[22] "Crude measure: American oil exports have boosted the WTI benchmark, for now" (published January 2016), The Economist.

[23] A. Imsirovic (December 2019).