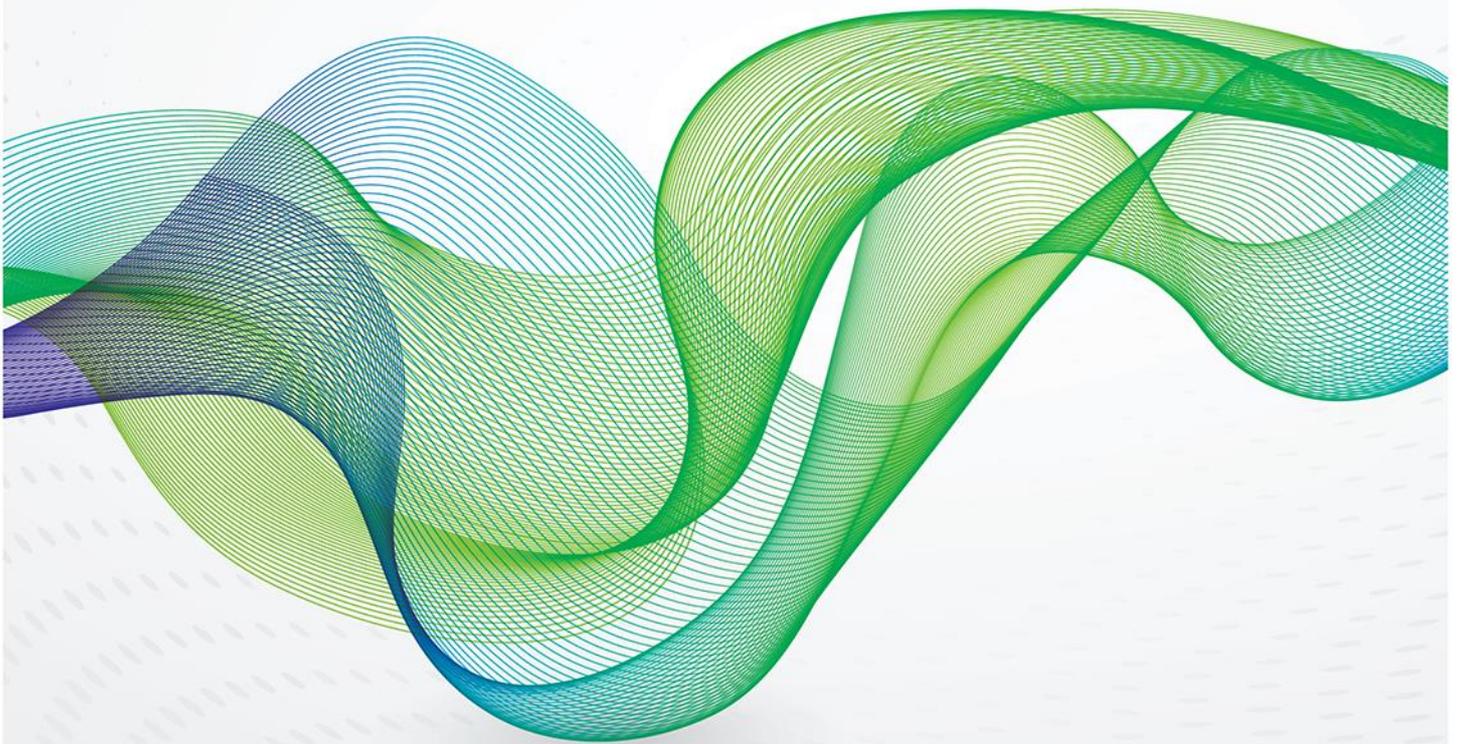




THE OXFORD  
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# What Next for Asian Benchmarks?





## 1. Introduction

Earlier this month, Saudi Aramco announced that it would be changing the pricing formula it uses to price its long-term crude oil sales to Asia, starting from October 2018. Rather than using the equally weighted average prices for Dubai and Oman as assessed by pricing agency S&P Global Platts (referred to in this article as Platts Dubai and Platts Oman), Saudi Aramco will replace Platts Oman in the formula with the marker price of the Oman Crude Futures Contract traded on the Dubai Mercantile Exchange (referred to as DME Oman), so the official selling price (OSP) from October onwards will change to:

$$OSP_M = \left( \frac{Platts\ Dubai_{M+2} + DME\ Oman_{M+2}}{2} \right) \pm Adjustment\ Factor$$

In terms of pricing, the market will barely feel the difference, as historically Platts Oman and DME Oman have been closely aligned and in most days the difference is very small. For instance, between January and June 2018, the average difference between DME Oman and Platts Oman was less than 5 cents a barrel. Nevertheless, this recent change could still represent a major shift, as it is the first time that Saudi Arabia, the Middle East's biggest crude producer and exporter, has shown willingness to implement a change to its OSP to Asia since the mid-1980s, in an attempt to reassert some influence over the crude pricing mechanism and the oil price discovery process. Saudi Arabia's recent adjustment to its pricing formula reflects in part recent structural transformations in the oil market and trade flows, together with a growing interdependency between Asia and the Middle East, and thus may indicate that more radical changes could be on the way, though the timing of any potential changes remains highly uncertain.

## 2. Some historical background

After the collapse of the OPEC administered pricing system, Dubai became the main price marker for the Gulf region in the mid-1980s, when it was one of the few Gulf crudes available for sale on the spot market. In the early stages of its development, the Dubai benchmark only included crude oil produced from Dubai's fields, but this was to change as Dubai's production started to fall sharply. The decline in Dubai's oil output in the 1990s and 2000s pushed Platts to search for alternatives to maintain the viability of Dubai as a global benchmark.<sup>1</sup> In 2001, Platts allowed the delivery of Oman against the Dubai contract. In 2004, it introduced a mechanism known as the 'partials mechanism', which had the effect of slicing a Dubai or Oman cargo into small parcels that are traded on the Platts window. Over the years, Platts allowed for the delivery for other types of crude against the contract. Upper Zakum was added to the basket in 2006 after ExxonMobil had acquired 28 per cent in the Upper Zakum field, and this facilitated the emergence of a spot market in the grade. Platts made the Qatari Al-Shaheen and Abu-Dhabi's Murban grades deliverable in the Dubai partials mechanism in 2016, following an episode in August 2015 which saw PetroChina's trading arm Chinaoil buy more than 90 per cent of all the crude delivered into the contract, pushing the market into backwardation despite ample supplies at the time. The objective of adding these grades was to increase the volume of crude underlying the benchmark, preventing any single player from taking delivery of all the available crude and distorting price signals in the process. In a sense, Dubai has turned into a brand name, or index, that represents a basket of mid-sour grades.

Compared to Brent, fewer financial layers have emerged around Dubai. Attempts to launch Dubai futures contracts in London and Singapore were made in the early 1990s, but such attempts did not succeed. Instead, the informal forward Dubai market remained at the heart of the Dubai complex. Currently the two most important financial layers surrounding the Dubai market are the Brent/Dubai Exchange of Futures for Swaps (EFS) and the Dubai inter-month swaps markets. These instruments are largely traded over the counter (OTC) via inter-dealer brokers. The main attractiveness of Dubai

<sup>1</sup> For a recent discussion on the evolution of Dubai benchmarks, see Dave Ernsberger, 'The Changing Nature of the Dubai Benchmark', *Oxford Energy Forum*, Issue 113, 2018, pages 236.

as a benchmark lies primarily in its strong linkages to the Brent complex through an actively traded and highly liquid Brent/Dubai EFS, allowing speculators/hedgers to convert their Dubai price exposure into a Brent price exposure, which is easier to manage given the high liquidity of the Brent complex.

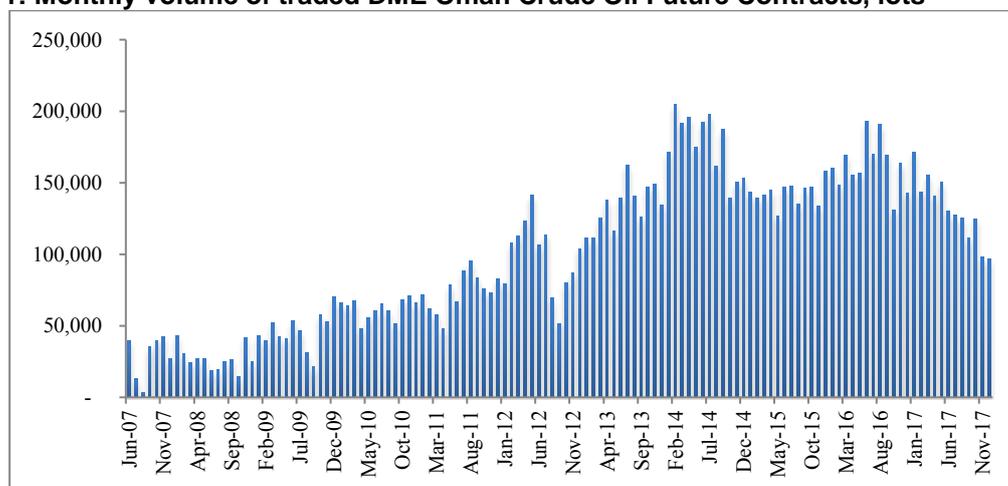
The rapid decline in Dubai output boosted the importance of Oman Blend in pricing crude oil in the East of Suez. Oman has some of the characteristics that enable it to play the role of a benchmark:

- the volume of physical liquidity is relatively large, with a production capacity close to 1 mb/d and exports of around 0.8 mb/d;
- its production is not subject to OPEC quotas as Oman is not a member of OPEC;
- it is not subject destination restrictions;
- Oman is a popular grade in Asia among both refiners and traders;
- Oman's Mina al Fahal loading port is strategically located avoiding the geopolitically sensitive Strait of Hormuz.<sup>2</sup>

As mentioned above, Platts allowed for the delivery of Oman grade against the Dubai contract and it became the most delivered crude against the contract. Also, in June 2007, the Dubai Mercantile Exchange (DME) launched the Oman Crude Oil Futures Contract, to serve as a pricing benchmark of Gulf exports to Asia and as a mechanism to improve risk management.

However, during the last decade, the DME Oman Crude Oil Futures Contract has played a marginal role in pricing and risk management for grades other than Oman. Liquidity, as reflected in the volume of traded contracts, remained very low compared to Brent or WTI (see Figure 1). For instance, in 2017, the average daily volume (ADV) in 2017 stood at less than 6000 lots.

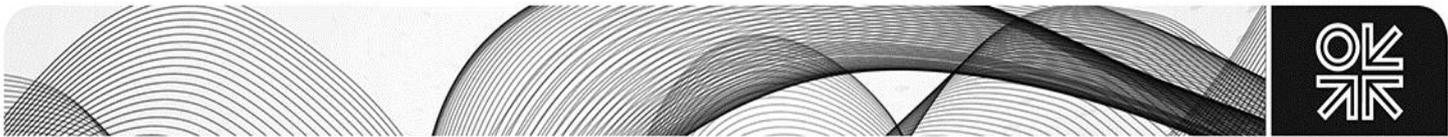
**Figure 1: Monthly volume of traded DME Oman Crude Oil Future Contracts, lots**



Source: DME

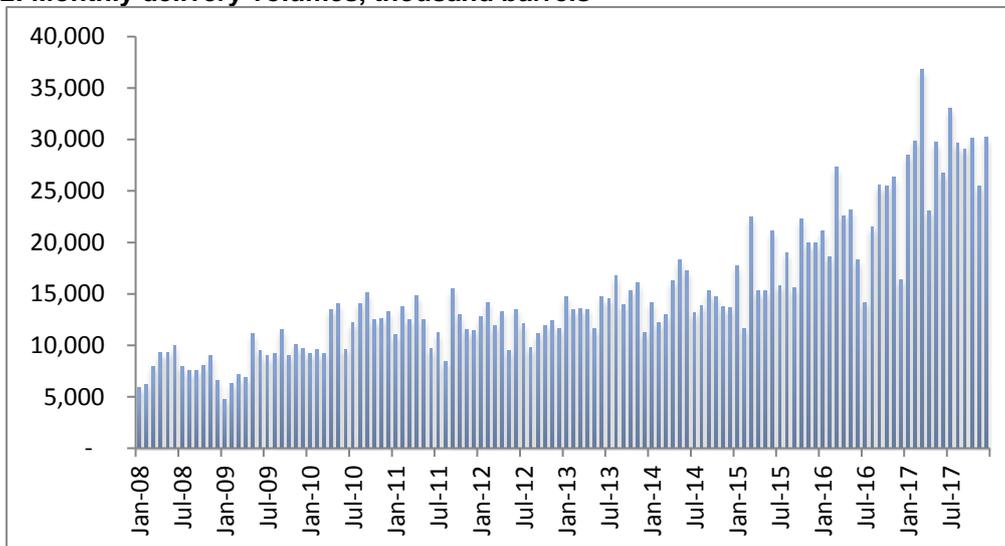
The DME Oman futures contract settles against physical delivery of Oman crude. A key feature of the DME Oman futures contract has been the large number of contracts that converge for physical delivery in any given month (see Figure 2). For instance, in 2017, the monthly physical delivery volumes exceeded 29 million barrels. By any standard, these are very large volumes to be delivered through futures contracts and reflect the fact that DME Oman has become primarily a mechanism for the delivery of Omani crude. This explains why, contrary to other crude oil futures contracts, the open interest on the DME Oman contract tends to increase as contract expiry approaches (see Figure 3). Inability to attract higher liquidity, accompanied with rise in physical deliverability, undermined the futures contract's attractiveness as a risk management/speculative tool, especially for those players who are not interested in physical delivery in the first place. A big part of the problem has been the

<sup>2</sup> Paul Young, 'Middle East Poised to Join the Ranks of Trading Hubs', *Oxford Energy Forum*, Issue 113, 2018, pages 28–30.



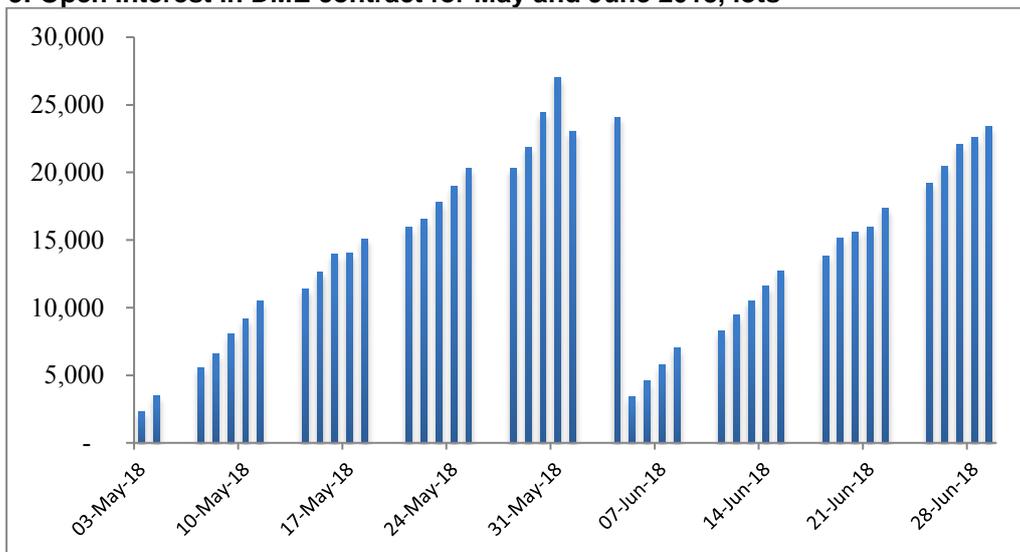
lack of activity in the 2<sup>nd</sup> month, making it hard for non-physical players to roll their positions from month 1 to month 2 in run up to expiry.

**Figure 2: Monthly delivery volumes, thousand barrels**



Source: DME

**Figure 3: Open Interest in DME contract for May and June 2018, lots**



Source: DME, Blank cells are holidays

Concerns about the potential longevity of the DME discouraged the key Middle Eastern exporters such as Saudi Arabia and Kuwait from making the shift to the DME Oman contract in its first years of life. Also, there were concerns that the high concentration of crude production in the hands of Petroleum Development Oman (PDO)<sup>3</sup> might give equity producers an unfair advantage. In addition, given that Oman is the only crude that could be delivered against the contract, if the Oman grade can't be delivered for whatever reason, some serious mispricing issues could be created. As a result, the DME Oman contract was essentially stuck in the same position: while not attracting much liquidity, the key oil exporters were not encouraged to make the shift to it, but without the key exporters making the shift, the contract failed to attract enough liquidity to encourage greater participation from hedgers and speculators, particularly from Asia.

<sup>3</sup> PDO is an upstream operating company which is responsible to all the equity producers for optimizing production and delivery through Mina Al Fahal. PDO is owned by the Omani government (60%), Shell (34%), Total (4%), and Partex (2%).

### 3. The shift to DME Crude Futures Contract put in context

It is in this context that the importance of the recent shift of Saudi Arabia to include DME Oman in its OSP should be understood. It will encourage other key exporters such as Iraq and Kuwait to make a similar move. For the UAE, such a move is more difficult as the Abu Dhabi National Oil Company (ADNOC), still uses retroactive rather than forward pricing. So far, the big Asian refineries haven't shown strong enthusiasm for the DME Oman contract for risk management, but with the recent shift, we could see an increase in liquidity, though most likely the increase will be gradual. So far hedging has been just done on Dubai basis and parties accepted the Dubai-Oman basis risk. By having two components (Dubai and Oman) in the OSP, the cost of hedging for refineries increases as they have to hedge both the Oman and Dubai components of the formula – unless the market adopts a 50 per cent DME Oman: 50 per cent Platts Dubai swaps contract. Such a contract could provide an opportunity to hedge both elements, which could be seen by traders as a positive development as it gives them optionality, while for refineries it may be seen as adding to the cost of hedging. We could also see the development of new financial products, particularly those that link Oman to Brent and Oman to WTI. As in the case of the Dubai pricing complex, this is especially important in the early periods, where liquidity is expected to remain low and traders would want to manage their price risk exposure through the more liquid Brent complex. As in the case of WTI, we could also see the development of a cash-settled system around the Oman benchmark, where PRAs would assess other Middle Eastern grades in relation to Oman.<sup>4</sup>

The motivation and the timing behind the Saudi Aramco shift also matters, as this could indicate that there could be more changes on the way. The idea to switch to the DME Oman contract has been considered within Saudi Aramco for years, but it has faced some serious resistance. For a long time, those who argued against the shift to DME Oman expressed concerns about the influence that a few players could have on pricing. The dominance of key players in the production of the underlying crude and their control of the delivery mechanism, along with low liquidity, raised concerns that some players could exercise 'pricing power'. However, this argument has weakened over time as trading activity in the Platts partials is also highly concentrated in the hands of a few players (such as UNIPEC, China Oil, and Shell<sup>5</sup>) and in many days a small number of players dominates both sides of the trade or the bid/offer process.<sup>6</sup> Another argument against the DME Oman contract is its sole reliance on the Oman grade as the only deliverable crude, but this concern could be addressed by including other crudes that could be delivered against the futures contract. For instance, Murban can play this role, though in the case of normal operations, the delivery of this grade against the contract is highly unlikely. Those who favour the DME Oman contract point to the fact that Oman has only traded once on a fixed-price basis in the Platts Window since February 2016, and bids and offers for Oman partials are equally rare.<sup>7</sup> Thus, the latest decision could be viewed as an outcome of a long process in which a middle position between two opposing views was ultimately adopted.

Another factor that could have ultimately tilted Saudi Aramco's decision is the advent of the Shanghai International Exchange (INE) crude futures contract and what this reflects in terms of a changed oil market context in which China is seeking to take more control over crude oil pricing. Despite the centre of demand growth shifting to the East and particularly to China, it is the US dollar that still dominates the oil pricing benchmarks. The INE contract is expected to remedy this and create a new pricing structure that reflects the supply/demand conditions in Asia and provides Asian players with a futures contract that allows them to efficiently manage their risk. A wide adoption of a crude oil contract denominated in renminbi (RMB) would also increase China's prominence in the global financial system. There have been multiple media reports indicating that China has been persuading

<sup>4</sup> Argus Media has already announced that it has plans to start publishing differentials to the DME Oman crude futures contracts for key Middle Eastern Gulf Grades including Abu-Dhabi Murban and Qatari Al-Shaheen.

<sup>5</sup> See Dave Ernsberger, 'The Changing Nature of the Dubai Benchmark', *Oxford Energy Forum*, Issue 113, 2018, pages 23–6.

<sup>6</sup> See for instance Adi Imsirovic, 'Oil Markets in Transition and the Dubai Crude Oil Benchmark', *Oxford Energy Comment*, October 2014. The author argues that 'The Platts window is dominated by a small elite of self-selected "price makers" ' and while 'the Brent market also involves a small "self-appointed elite" of participants ... unlike Dubai, Brent has a hugely liquid futures market working in tandem with the Platts assessment process in providing the price discovery'.

<sup>7</sup> Adi Imsirovic, 'Oil Markets in Transition and the Dubai Crude Oil Benchmark', *Oxford Energy Comment*, October 2014.

Saudi Arabia and other key Middle Eastern exporters to adopt the new contract and accept payment for their crude in RMB, with some even suggesting that this ‘could be sweetener in a deal that gets the best possible price for Aramco shares’.<sup>8</sup>

For the key Middle Eastern oil exporters, the adoption of the INE contract at this stage creates multiple challenges. At the technical level, the contract still suffers from many shortcomings<sup>9</sup> and therefore the key Middle Eastern exporters are reluctant to move away from highly liquid and relatively efficient and robust benchmarks to an untested pricing benchmark where concerns about Chinese government intervention in financial markets abound. More importantly, at a more strategic level, such a change implies a shift in the centre of ‘crude pricing’ from the Gulf to Asia, a shift that key oil exporters would resist. Even with the current system, Chinese players are already flexing their muscles and becoming more assertive in the price discovery process. For instance, Unipecc, the trading arm of China’s largest refiner, Sinopec, has cut contractual terms volumes from Saudi Arabia for the past few months, after Saudi Aramco lifted the OSP of Arab Light crude grade to Asian customers in May. Also, Chinese players have been very active in Dubai partials, influencing the structure of the forward curve, which guides Saudi Aramco in setting its official prices. The recent shift would bolster the prospects of the DME futures contract providing, like the INE contract, Asian and Chinese refineries with the opportunity to hedge through a futures exchange.

#### 4. What next for the Asian benchmarks?

The road ahead for Asian benchmarks is not yet clear and multiple scenarios could emerge. One potential scenario is that the recent shift to DME Oman does not generate the required liquidity and refineries decide not to hedge the Oman leg through the DME Oman contract. In the past, Saudi Aramco’s moves to BWAVE in Europe and to the Argus Sour Crude Index (ASCI) in the USA did not generate liquidity and did not attract enough interest in the newly created instruments around the new benchmarks. In this scenario, Middle Eastern oil exporters will most likely stick to Platts Dubai, while the INE will continue to promote its crude futures contract as an alternative to the current ‘imperfect’ benchmark.

Another potential scenario is that liquidity in the DME Oman contract picks up substantially, the Brent–Oman links are strengthened, and Asian refineries are comfortable with managing their risk through the DME exchange, in which case Saudi Aramco could decide to completely shift to DME Oman. This would represent a radical shift in crude pricing for Asia and a move away from reporting-base systems to exchange-base systems for price discovery. It will also be the first time that the key oil exporters have established a regionally grown benchmark.

Regardless of which scenario emerges, the recent shift shows quite clearly that the crude pricing system can’t be immune from the structural changes impacting the oil market and crude oil trade flows. Back in 2012, the author of this article argued that the main market players had no interest in rocking the boat when it came to the Dubai benchmark, but warned that ‘history has shown that players’ interests could diverge and that structural transformations could occur, and if this happens, Dubai is likely to be the least immune to radical changes in the international pricing system’<sup>10</sup>. This prediction may still turn out to be true.

<sup>8</sup> For instance, see Frank Kane, ‘Rise of petro-yuan provides dilemma for Saudi Aramco’, *Arab News*, 5 April 2018.

<sup>9</sup> For a more thorough discussion on the INE crude oil futures contract, see Michal Maiden, ‘China’s Crude Awakening’, *Oxford Energy Forum*, Issue 113, 2018, pages 30–33; Tracy Liao, Edward Morse, and Anthony Yuen, ‘China’s New Crude Oil Benchmark’, *Oxford Energy Forum*, Issue 113, 2018, pages 34–37, and Antonio Merino and Roddy Graham, ‘Petroyuan vs Petrodollar’, *Oxford Energy Forum Issue*, 113, 2018, pages 37–9.

<sup>10</sup> Bassam Fattouh, ‘The Dubai Benchmark and Its Role in the International Oil Pricing System’, *Oxford Energy Comment*, March 2012.