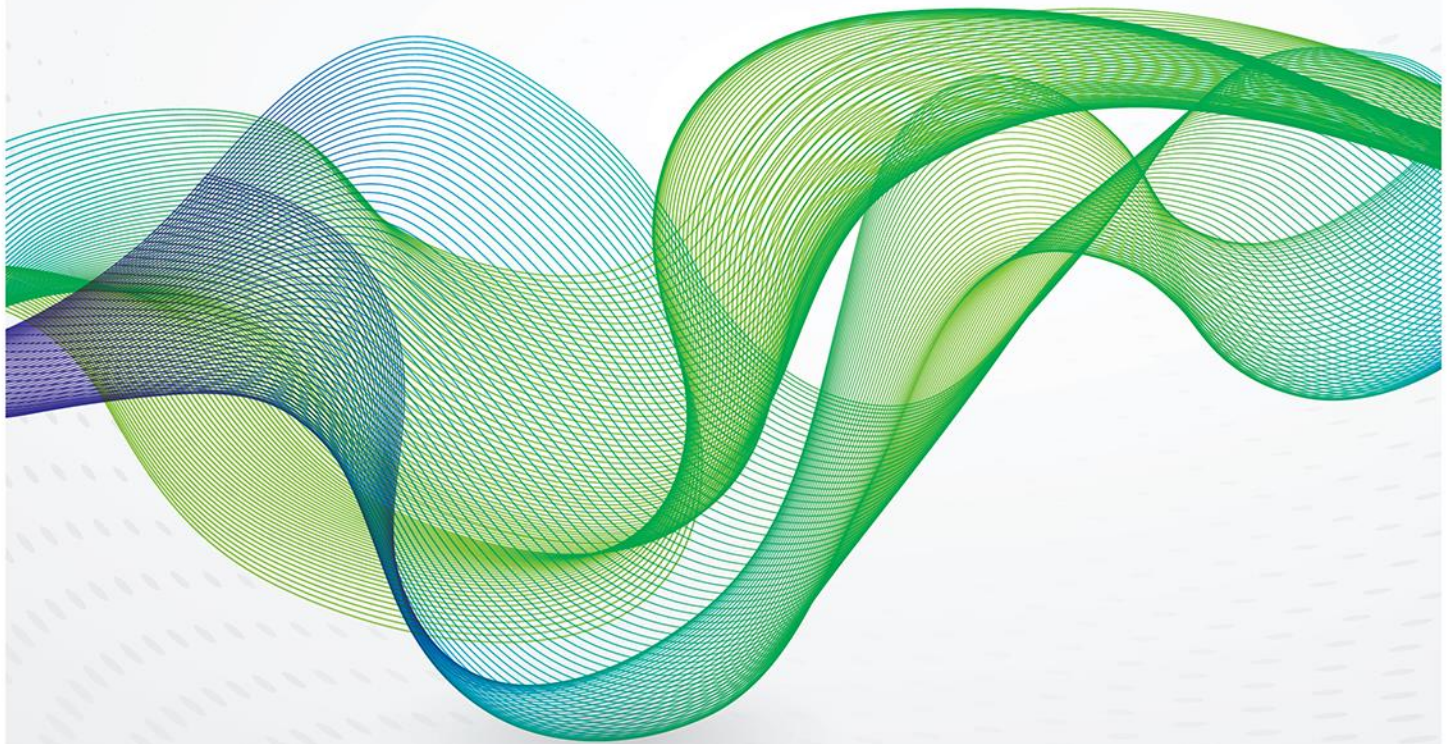
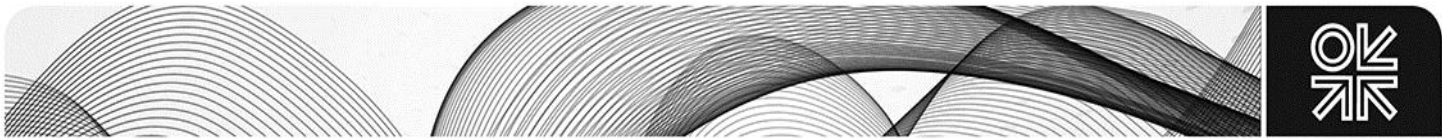


July 2015

# Eastward Shifting Oil Markets and the Future of Middle Eastern Benchmarks





## 1 Introduction

China's intensified activity in the Dubai Platts window has attracted a lot of attention recently. In October 2014, Chinese companies bought a record 47 cargoes of Dubai, Oman, and Upper Zakum crude for delivery in December. This phenomenon repeated itself during April 2015 and may be well on the way towards establishing itself as a regular market feature.<sup>1</sup> In April 2015, Chinaoil, the trading arm of the national oil company China National Petroleum Corporation (CNPC), bought 55 June-loading cargoes of Middle Eastern crude in the window (49 Oman, 6 Upper Zakum). Most of these 27.5 million barrels were sold by Unipec, the trading arm of the Chinese national oil company Sinopec.<sup>2</sup> Various explanations have been put forward to rationalize the increase in Chinese trading activity. It is, for instance, possible that the transactions are targeted at the delivery of physical crude to fill up China's strategic petroleum reserves in times of low oil prices. But the support of paper positions – such as Dubai swaps, Dubai inter-month spreads or Brent/Dubai EFS (Exchange for Swaps) – also seems to be a feasible explanation.<sup>3</sup>

Although further examination is required to understand the exact rationales at play, it is becoming very clear that Chinese companies have started to take a more active role in crude oil trading and in the crude oil price formation process. Such an involvement of Asian companies acting as price makers has to be seen as part of a broader, structural eastward shift of international oil markets. This change in oil market dynamics, together with the consequences for crude oil price benchmarks, has recently been examined by Imsirovic. He concludes that there is a need for a new, genuinely Asian, marker for East of Suez crude oil pricing and, in so doing, is very much in line with widespread market commentaries.<sup>4</sup> As this necessity is commonly taken for granted, the possibility of modifying the Middle Eastern benchmark system has, so far, been ignored. For the Gulf region this, however, involves the risk of being left behind, as crude oil pricing shifts eastward. If the Middle Eastern benchmark system is not strengthened, the Gulf may lose its central position in crude oil pricing as the marker for East of Suez moves to Asia.

This paper examines the future of Middle Eastern crude price benchmarks in light of the ongoing eastward shift of international oil markets. The main question is whether the benchmark for East of Suez must necessarily move to Asia, or whether strengthening the Middle Eastern benchmark system may offer a feasible alternative. In seeking to answer this question, this paper will first briefly examine the factors underlying the current eastward shift of international oil markets. Subsequently, two candidates for a genuinely Asian marker for East of Suez will be presented briefly. Hereafter, the four main arguments for the necessity of such a new Asian marker will be presented and critically evaluated. Finally, a proposal to rebuild the current Middle Eastern benchmark system, in order to strengthen its position in times of eastward shifting oil markets, is outlined. It aims at linking the physical Dubai market with the Oman futures market on the Dubai Mercantile Exchange (DME). This involves price signals from the physical Dubai assessment feeding into the DME Oman futures contract (and vice versa) as well as hedging of Dubai price exposure by means of the DME Oman contract. It will be shown how this would not only cope with shifting oil market dynamics, but also solve several issues currently weakening both the Dubai marker and the DME Oman futures contract.

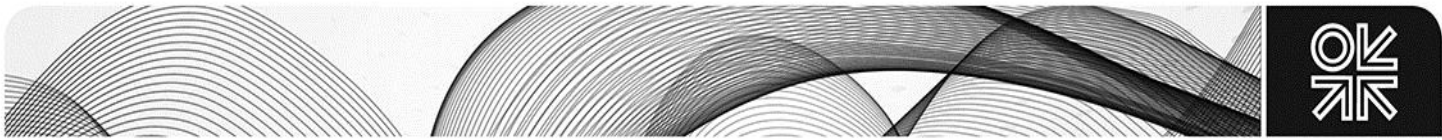
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<sup>1</sup> Raval and Sheppard, 'China Oil Traders'.

<sup>2</sup> Energy Intelligence, 'Saudi Prices to Asia'; Raval and Sheppard, 'China Oil Traders'.

<sup>3</sup> Energy Intelligence, 'Chinese Buying Rolls'.

<sup>4</sup> Imsirovic, 'Asian Oil Markets in Transition'; Imsirovic, 'Oil Markets in Transition and Dubai'.



## 2 Eastward Shifting Oil Markets

Only recently Imsirovic called Asia '[...] the new center of gravity for the oil markets',<sup>5</sup> not only altering the trade flows of crude but also potentially having significant impact on the global landscape of crude oil price benchmarks. This eastward shift is due to several factors; changes in global oil supply and demand as well as regulatory developments can be distinguished among these factors.

### *Market fundamentals*

Firstly, the production of unconventional hydrocarbons in North America adds more crude supply to the market. Between 2009 and 2014, the USA added 3.4 million b/d of crude oil output and production levels reached 9.5 million b/d in March 2015.<sup>6</sup> This new domestic supply affects global oil markets as North America becomes less reliant on crude imports. Since 2005 US crude oil imports have fallen by 27 per cent, from 3.7 million barrels to 2.7 million barrels in 2014.<sup>7</sup> According to the International Energy Agency (IEA), the remaining imports to OECD Americas by the end of the decade will be mostly heavy sour grades from Latin America and the Middle East (mainly Saudi Arabia).<sup>8</sup> Accordingly, parts of today's crude oil exports to North America, in particular light sweet grades, will have to be relocated and will increasingly flow into the Asian market. Hence, Gulf producers will have to compete with additional eastbound supply from North and West Africa, South America, Russia, the North Sea, and potentially even the USA if legislation on crude oil exports is lifted in the future.<sup>9</sup>

Secondly, demand for crude oil is shifting towards Asia and will increasingly do so in the future, despite the recent slowdown of the Chinese economy. China's oil demand (including that of Hong Kong) has increased from 7.2 million b/d in 2005 to 11.4 million b/d in 2014 (12.4 per cent of global oil demand).<sup>10</sup> Furthermore, China's crude imports have increased from less than 2.5 million b/d to 6 million b/d over the past decade.<sup>11</sup> In 2014, however, Chinese oil demand growth slowed due to slower economic growth and the rebalancing of the economy. The IEA expects China's oil demand to grow by only 2.6 per cent per year over the period 2014–20, which is about half of its previous six-year trend.<sup>12</sup> Despite these lower growth rates, Asia is expected to overtake the Americas as the world's largest oil consuming region in 2015.<sup>13</sup> Furthermore, over the forecast period 2014–20, the IEA expects the strongest growth in oil demand to be in the Asia/Pacific region – on average growing by 633,000 b/d per year (accounting for 57.4 per cent of total projected net gain).<sup>14</sup> The eastward shift of oil demand is mirrored in the refining industry. The IEA expects a third of the increase in net refining capacity until 2040 to stem from China, closely followed by the Middle East and India. At the same time, further closures of refineries in areas of weak demand and weak margins are likely, most notably in the already struggling refining industry in Europe.<sup>15,16</sup> To sum up, this eastward shift of crude oil demand, together with additional supply from North America, will result in international crude oil trade flows shifting towards Asia. According to the IEA, two out of three barrels of crude oil traded internationally by 2040 will be destined for Asia (up from less than 50 per cent today).<sup>17</sup>

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<sup>5</sup> Imsirovic, 'Asian Oil Markets in Transition'.

<sup>6</sup> U.S. Energy Information Administration, 'U.S. Field Production'.

<sup>7</sup> U.S. Energy Information Administration, 'U.S. Imports Crude Oil'.

<sup>8</sup> International Energy Agency, 'Oil Medium-Term Market Report 2015', 84.

<sup>9</sup> *Ibid.*, 84 ff.; Imsirovic, 'Oil Markets in Transition and Dubai', 3.

<sup>10</sup> BP, 'BP Statistical Review 2015', 9.

<sup>11</sup> Argus Media, 'Out Dated'.

<sup>12</sup> International Energy Agency, 'Oil Medium-Term Market Report 2015', 26.

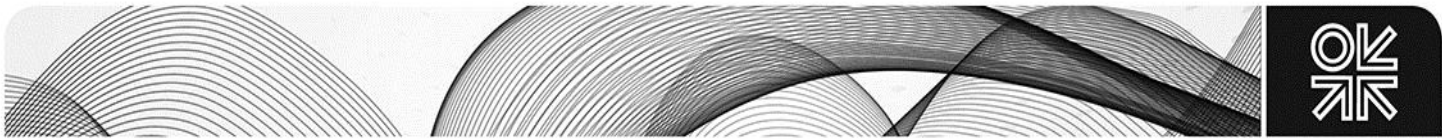
<sup>13</sup> *Ibid.*, 18.

<sup>14</sup> *Ibid.*, 21.

<sup>15</sup> This is despite the fact that European refining margins have improved recently, due to lower crude prices, higher demand for oil products in Europe as well as the euro weakening against the US dollar (Raval, 'European Refining Margins').

<sup>16</sup> International Energy Agency, 'World Energy Outlook 2014', 131–132.

<sup>17</sup> *Ibid.*, 95.



All in all, the Asian region is gaining market power because of both the diversification of its supply sources and the demand shift for crude oil. This has led to the emergence of a 'buyer's market' (a market in which buyers have a stronger position than sellers), with Asian customers occasionally buying Atlantic swing barrels (such as West African crude) to meet their demand.<sup>18</sup> In order to manage these arbitrage flows on their own, rather than depending on trading companies or oil majors, Asian oil companies are increasingly integrating their trading operations.<sup>19</sup> This can be seen in the increased Chinese activity in the Dubai Platts window in October 2014 and April 2015. With this more active position in crude trading comes greater influence on the global crude oil price formation process. Looked at in that way, the fact that Chinaoil and Unipet are increasingly acting as price makers in the Dubai Platts window is not an anomaly, but rather the manifestation of eastward-shifting oil markets.<sup>20</sup>

### **Market regulation**

This dynamic could be further intensified as regulation of crude oil price benchmarks in the European Union advances and eventually diverts financial liquidity to less regulated jurisdictions. Such regulatory arbitrage could significantly undermine the current importance of Brent and enable new benchmarks to emerge. After the financial crisis in 2008 – and even more so in the aftermath of the London Interbank Offered Rate (Libor) manipulation scandal in 2012 – discussions on regulating financial benchmarks intensified in the EU. Such discussions have included crude oil price benchmarks, although the International Organization of Securities Commission (IOSCO), (which monitors price reporting agencies' (PRA) compliance with a set of voluntary principles) spoke against a further alignment of PRA's guidelines with those for financial market benchmarks.<sup>21</sup> However, regulatory efforts in the EU are still in progress. The European Commission raided the offices of major oil companies and of Platts in April 2013, as part of their investigations of potential price manipulation (mainly concerning Platts' Dated Brent assessment).<sup>22</sup> The European Commission's regulatory proposal intends to move regulation of benchmarks to the Paris-based European Securities and Markets Authority (ESMA). However, the idea of making the manipulation of benchmarks a criminal offence has led to serious concerns. This means that oil companies could sue a PRA if its price assessments are not accurate. Disregarding the outcome of a potential charge, any lawsuit of itself would pose a major source of reputational risk for price reporting agencies and could seriously challenge Brent's benchmark status, as market players lose faith in the assessment's credibility.<sup>23</sup> The proposed legislation is expected to become effective in 2015, so the regulatory details and their impact on PRAs, as well as their benchmark assessments, remain to be seen.<sup>24</sup>

All in all, not only are Asian buyers gaining market power due to changing market fundamentals, but they may also come to play an increasing role in crude pricing, as western regulation diverts financial liquidity, and thus crude price benchmarks, towards Asia. In light of these dynamics there has been an increasing call for a new, genuinely Asian, marker for East of Suez. Two commonly discussed candidates for such a new benchmark are the Russian ESPO Blend (named after the East Siberia–Pacific Ocean Pipeline) and the (announced but yet to be launched) Shanghai crude oil futures contract.

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<sup>18</sup> Imsirovic, 'Oil Markets in Transition and Dubai', 3.

<sup>19</sup> Imsirovic, 'Asian Oil Markets in Transition'.

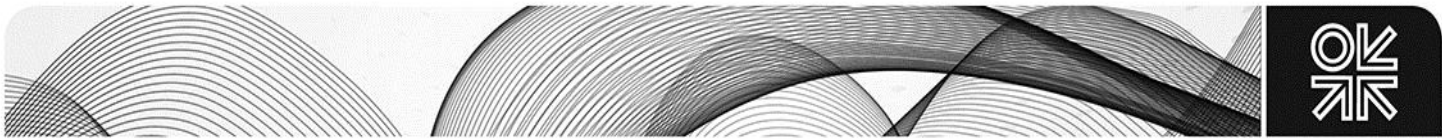
<sup>20</sup> Further signs of this transition have recently been described by Imsirovic, as Middle Eastern producers have started fighting for Asian market share (Ibid.; Imsirovic, 'Oil Markets in Transition and Dubai').

<sup>21</sup> Energy Intelligence, 'Price Reporting Agencies Won't Be Regulated'; Energy Intelligence, 'PRAs Have Made "Good Progress"'; Argus Media, 'Energy Price Reporting Organisations'.

<sup>22</sup> Energy Intelligence, 'PRAs Have Made "Good Progress"'; 'Price Reporting Probe'.

<sup>23</sup> Energy Intelligence, 'EU Brings Oil Into Libor Regulation'; Energy Intelligence, 'EU to Bring Out Benchmark Legislation'.

<sup>24</sup> European Commission, 'Citizens' Summary'.



### 3 Eastward Shifting Benchmarks

#### *The East Siberia–Pacific Ocean Blend*

The East Siberia–Pacific Ocean (ESPO) Pipeline connects 4,188 kilometres between Taishet and Kozmino on the coast of the Sea of Japan (near Vladivostok).<sup>25</sup> The capacity of the pipeline spur to the oil terminal in Kozmino is currently 600,000 b/d.<sup>26</sup> In addition, there is a branch to Mohe in China with a current capacity of 300,000 b/d<sup>27</sup> (expansions planned to 400,000 b/d in 2015 and 600,000 b/d in 2018).<sup>28</sup> In addition, a further capacity expansion was approved by the Russian government in February 2014; this would lift the pipeline's total capacity to 1.6 million b/d by 2020.<sup>29</sup>

For the ESPO Blend to become a new benchmark for the Asian basin, several conditions would have to be fulfilled. Firstly, a liquid spot market at Kozmino Bay, where price discovery takes place, is imperative. Initially, crude flows to Kozmino were planned to increase from 300,000 b/d in 2010 to 600,000 b/d in 2014.<sup>30</sup> However, because of various diversions of ESPO throughput away from Kozmino, loadings at Kozmino Bay only reached 498,000 b/d in 2014.<sup>31</sup> In 2015, Argus expects this figure to increase and potentially reach 540,000 b/d.<sup>32</sup> Keeping in mind the fact that a production figure of 500,000 b/d is generally perceived to be a condition for a robust benchmark crude, ESPO Blend at Kozmino Bay should be of sufficient volume.<sup>33</sup> These volumes, however, include term contracts, but Energy Intelligence quantifies the share of Kozmino volumes sold under term contracts at less than 5 per cent.<sup>34</sup> This results in expected Kozmino spot volumes of more than 513,000 b/d in 2015. However, it is expected that even as total shipments to Kozmino Bay are set to rise in the future, spot market volumes at Kozmino are expected to fall due to long-term supply commitments. An example of this is Rosneft's ambition to supply the planned Tianjin refinery in North China, a joint investment with CNPC, with 182,000 b/d. The crude for this refinery (expected to be operational in 2020) will be shipped from Kozmino.<sup>35</sup> In addition, its spare crude export capacity of about 1.4 million b/d theoretically allows Russia to act as a swing supplier, being able to export crude oil to both western and eastern markets.<sup>36</sup> There is hence potential to divert crude flows away from Kozmino, which may further increase doubts regarding sufficient and stable ESPO flows to Kozmino Bay. Therefore, for ESPO Blend to become a benchmark crude, the development of a liquid spot market for the price discovery process is crucial – too many long-term contracts and diversions of ESPO throughput may subvert this ambition.<sup>37</sup>

At this point it is also useful to look at the market structure at Kozmino Bay. Although new players have entered the market, the main suppliers of the blend are still Rosneft and the Russian oil company Surgutneftegaz, with disturbingly high market shares of 40 per cent, and 33.6 per cent respectively, in 2014.<sup>38</sup> Rosneft was able to expand its position in the market through the acquisition of TNK-BP (initially one of the key sellers at Kozmino Bay) in March 2013. This, however, ultimately means that Rosneft, and thus potentially the Russian state, controls all pipeline sales to China and more than one third of

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<sup>25</sup> Radyuhin, 'Changing Rules of Energy Game'.

<sup>26</sup> Henderson, 'Russia's ESPO Crude', 25.

<sup>27</sup> Radyuhin, 'Changing Rules of Energy Game'.

<sup>28</sup> Gronholt-Pedersen, 'Factbox'.

<sup>29</sup> Gorst, 'Russia – ESPO'.

<sup>30</sup> Gronholt-Pedersen, 'Factbox'.

<sup>31</sup> Argus Media, 'Crude Export Outlook'.

<sup>32</sup> Argus Media, 'Moscow Forecasts Lower Output'.

<sup>33</sup> Montepeque and Stewart, 'Sour Crude Pricing'.

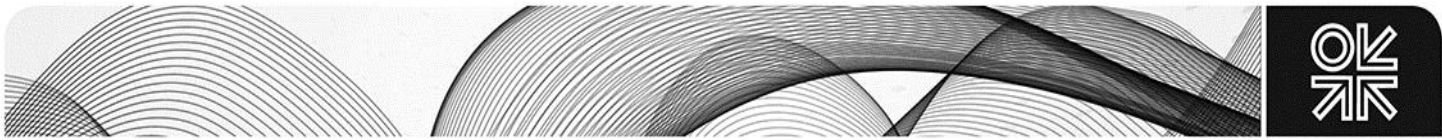
<sup>34</sup> Energy Intelligence, 'ESPO Benchmark Blues'.

<sup>35</sup> Gronholt-Pedersen, 'Factbox'.

<sup>36</sup> International Energy Agency, 'Oil Medium-Term Market Report 2014', 119–120.

<sup>37</sup> Note that the very pricing structure of ESPO has the potential to be problematic in this regard. Oil exports through the ESPO spur to China are priced off Kozmino Bay f.o.b. prices (free on board), which theoretically could encourage the creation of a supply shortage at Kozmino to create higher revenues from volumes heading to China (Platts, 'Russian Crude Oil Exports to Pacific Basin', 2). This, however, would seriously discourage the evolution of a liquid spot market at Kozmino Bay.

<sup>38</sup> Argus Media, 'Asia-Pacific Appetite Grows'.



all exports from Kozmino Bay. This has given rise to concerns about political instrumentalization of the ESPO Blend for Russia's strategic ambitions.<sup>39</sup> Furthermore, the concentration of market share on the buyers' side has increased further. In 2013, more than half of the blend was bought by Japan's JX Nippon Oil and Energy (20.6 per cent), Shell (18.6 per cent), and Unipecc (17.8 per cent).<sup>40</sup> In terms of destination countries, most sales stay in Asia, with Japan, China, and South Korea combined accounting for over 70 per cent of all 2014 ESPO Blend sales at Kozmino Bay.<sup>41</sup>

Another issue of concern is the long-term stability of the blend's quality. The blend was initially reported to have an API gravity of 34.7° (light) and a sulphur content of 0.6 per cent (sour).<sup>42</sup> Only recently, however, Energy Intelligence reported a sulphur content of only 0.49 per cent, thus categorizing the blend as sweet.<sup>43</sup> Future changes are not ruled out as Transneft might transfer more sour crude eastwards in order to reduce sulphur content for westbound exports. In addition, the introduction of new fields to the ESPO system in 2016 could be associated with unpredictable changes in quality of the blend.<sup>44</sup>

Also, in terms of pricing, changes will have to be seen before ESPO Blend can become a crude price benchmark. The blend is currently priced as a differential to Dubai. Hence, without ESPO Blend being traded on a flat price basis there is no reason for crude exporters to use it as a reference price rather than Dubai. One way to achieve this would be to trade ESPO Blend on an exchange. However, there is currently no paper market for the ESPO Blend and the successful development of a financial market is anything but easy.<sup>45</sup> The launch of an ESPO futures contract on the St. Petersburg International Mercantile Exchange, or an affiliate in Vladivostok, has been discussed, but no concrete steps have been undertaken so far.<sup>46</sup> Moreover, all exports from Kozmino are under the control of Russian companies. Although less than 5 per cent of Kozmino exports are sold under term contracts (the rest being sold spot without destination restrictions), most of the spot volume is sold through invitation-only tenders. This allows suppliers to effectively control access to the market and raises concerns that Russia is using the ESPO Blend as an instrument for its political goals.<sup>47</sup> It is this political risk and its roots in Kozmino Bay's market structure, together with doubts about whether a liquid spot market can develop at Kozmino, as well as concerns regarding the blend's quality which pose the biggest obstacles preventing the blend from achieving benchmark status. Whether these challenges can be overcome remains to be seen. For the time being, ESPO Blend – although not yet a reference crude – does play a certain role in the pricing of exports to Asia. Light/medium sour grades from the Middle East (such as Abu Dhabi's Murban, Umm Shaif, or Upper Zakum), in particular, track ESPO's premium over Dubai while pricing their Asian exports. ESPO's influence as a pricing guide is, however, limited for crudes priced off Brent, for which the Brent/Dubai EFS is a more important price indicator.<sup>48</sup>

### **The Shanghai Crude Oil Futures Contract**

The Shanghai crude oil futures contract was initially planned to start trading on the Shanghai Futures Exchange (SHFE) in 2012. However, the launch of the contract has been constantly delayed and in 2013 the plan for the futures contract was moved to a new exchange, the Shanghai International Energy

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<sup>39</sup> Henderson, 'Russia's ESPO Crude'; Shiryayevskaya, 'Rosneft Completes TNK-BP Acquisition'.

<sup>40</sup> Argus Media, 'Asia-Pacific Appetite Grows'.

<sup>41</sup> Argus Media, 'ESPO Exports Rising'.

<sup>42</sup> Reed, 'Russia's ESPO Blend Has Bright Future'; Davis, 'Crude Pricing', 29.

<sup>43</sup> Energy Intelligence, 'ESPO Benchmark Blues'.

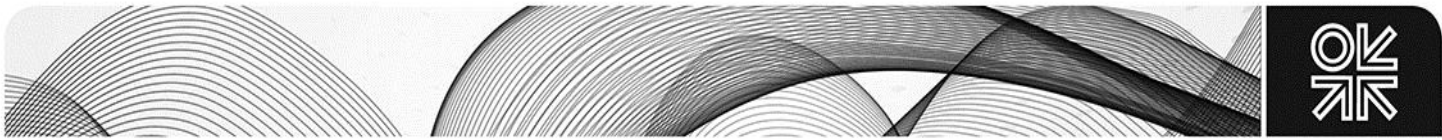
<sup>44</sup> Henderson, 'Russia's ESPO Crude'.

<sup>45</sup> Energy Intelligence, 'ESPO Benchmark Blues'.

<sup>46</sup> Energy Intelligence, 'ESPO's Aspirations'.

<sup>47</sup> Energy Intelligence, 'ESPO Benchmark Blues'.

<sup>48</sup> Energy Intelligence, 'Traders Warn'.



Exchange (INE),<sup>49</sup> which is located in Shanghai's new free trade zone. This is supposed to attract international participants by means of tax incentives and promise of full convertibility of the Yuan.<sup>50</sup> After further delays of the start of trading, the futures contract received regulatory approval from the China Securities Regulatory Commission early December 2014, but then again failed to meet the announced launching date of March 2015.<sup>51</sup> The contract is now said to begin trading at the end of 2015.<sup>52</sup>

Accordingly, details on the Shanghai crude oil futures contract are scarce and prone to changes. However, it seems certain that the contract will settle against physical delivery, with a minimum delivery volume of 200,000 barrels and a delivery period consisting of the five business days following last trading day.<sup>53</sup> Seven grades will be deliverable, of which six originate from the Middle East: Basra Light<sup>54</sup> (Iraq), Dubai, Masila (Yemen), Oman, Qatar Marine, and Upper Zakum (Abu Dhabi). The remaining grade<sup>55</sup> will be the Chinese Shengli crude.<sup>56</sup> The large number of grades available for physical delivery should help minimize the risk of price manipulation, to which contracts with low physical liquidity are particularly prone. The INE will use a theoretical benchmark for pricing purposes, rather than one of the seven real crude grades. This means that the delivered crudes will be priced at premiums/discounts to an artificial grade with the following quality properties: 32° API gravity and 1.5 per cent sulphur content (medium, sour).<sup>57</sup> One contract will account for 100 barrels, as opposed to the standard lot size of 1,000 barrels. This should, on the one hand, facilitate trade as it involves smaller risk and requires less financial strength, thus making the contract especially attractive for Chinese retailers as a risk management tool. On the other hand, however, the rather unusual lot size of 100 barrels will also impose additional transaction costs which may hamper trading activity. The minimum price fluctuation will be 0.1 Yuan per barrel, whereas the maximum price fluctuation will be 4 per cent of the settlement price on the previous trading day.<sup>58</sup> Expiry date will be the last trading day of the month preceding the month of delivery, with the settlement price being an average of the daily closing prices<sup>59</sup> on the last five days of trading.<sup>60</sup> The contract will be denominated in Yuan, which will add an additional dimension of foreign exchange risk, with US dollars being accepted as an alternative settlement currency and in margin calls. The margin requirement will be set to 5 per cent of contract value.<sup>61</sup> International companies without Chinese subsidiaries will be able to open a US dollar bank account in China, specifically for trading of the futures contract. The trade in US dollars will be limited to a maximum of \$5 billion per day.<sup>62</sup>

However, there are barriers to the success of the contract. Firstly, the comparatively short trading hours (weekdays: 9a.m. – 11:30 a.m. and 1:30 p.m. – 3 p.m. Beijing time) which, most importantly, do not overlap with the 4:30 p.m. Singapore market-on-close, in which Asian benchmark prices are assessed.

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<sup>49</sup> The INE is a joint venture between SHFE and the Shanghai Futures Information Technology Co., a company focusing on development of software required for futures exchanges (Shanghai Futures Information Technology Co., Ltd., 'Company's Briefly Information').

<sup>50</sup> Energy Intelligence, 'Shanghai Yet to Deliver on Crude Futures'; Energy Intelligence, 'Shanghai Pressed to Launch China Futures'.

<sup>51</sup> Energy Intelligence, 'China Approves Crude Futures'.

<sup>52</sup> Energy Intelligence, 'China's Bid'.

<sup>53</sup> Energy Intelligence, 'China Moves Crude Futures Contract'; Energy Intelligence, 'China's Bid'.

<sup>54</sup> Note that there have been rumours that Basra Light will be removed from the basket of physical deliverable grades due to quality concerns and the recent decision to split Basra Light into two separate (light and heavy) grades (Atanasova, 'Iraq to Split Basra Light').

<sup>55</sup> Note that Russian Urals Blend, which had been initially announced as an eighth grade, was missing in recent announcements.

<sup>56</sup> Energy Intelligence, 'China's Bid'.

<sup>57</sup> Energy Intelligence, 'Don't Mock It'.

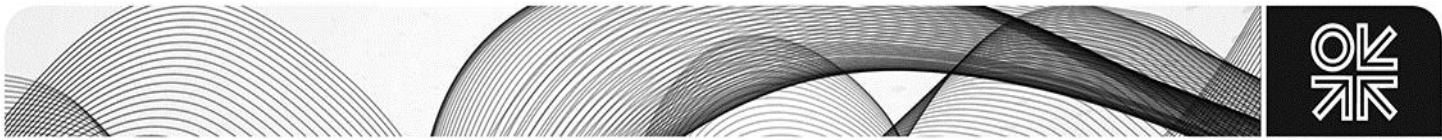
<sup>58</sup> Energy Intelligence, 'China's Bid'.

<sup>59</sup> The daily closing price itself will be a weighted average price of the respective day's trading volume (Energy Intelligence, 'Don't Mock It').

<sup>60</sup> Ibid.

<sup>61</sup> Energy Intelligence, 'China's Bid'; Platts, 'China to Allocate Storage'.

<sup>62</sup> Energy Intelligence, 'China Approves Crude Futures'; Energy Intelligence, 'Shanghai Pressed to Launch China Futures'.



The usefulness of the contract's price signal would, however, be improved if it could adjust itself in accordance with other regional prices.<sup>63</sup> Secondly, restrictions on crude imports to China allow only a small group of Chinese (mostly state-owned) companies to import crude oil to China. In order to cope with this regulation, physical delivery of crude against the contract will be made to bonded storage.<sup>64</sup> Because of this, the crude is not considered to have entered China under tax laws. This firstly avoids Chinese taxes and secondly allows the crude to be re-exported.<sup>65</sup> However, the crude is only able to enter China for refining or resale if it is imported by a company holding a crude import licence.<sup>66</sup> Hence, even though the use of bonded storage will make physical delivery more attractive for international companies, the question still remains whether sufficient liquidity can be attracted without free competition among importers. Other regulations might also have to be softened; for instance, the regulation of petrochemical product prices<sup>67</sup> which limits hedging strategies and thus may hamper trading volumes in the crude oil futures contract.<sup>68</sup>

In this sense, the Shanghai crude oil futures contract is, to a large extent, a bet on economic deregulation in China. Previous experiences have shown that the successful launch of a crude oil futures contract is everything but easy, and the ongoing struggle of the DME Oman contract to attract high levels of liquidity only confirms this. The SHFE launched a mock trading system in early 2014 and has been holding workshops in order to introduce the trading system to market participants. These sessions, however, are said to have been unable to attract the interest of oil companies, despite strong attempts from the SHFE.<sup>69</sup> Moreover, Saudi Arabia and Kuwait are said to have made it clear that they will not support the Shanghai contract; this will only intensify the difficulty of attracting sufficient financial liquidity.<sup>70</sup> On the other side, the DME has already communicated interest in cooperating with the Shanghai contract, which may help boost liquidity. This is a feasible option given the relatively short time difference of four hours between Dubai and Shanghai, which creates opportunities for hedging and spread trade.<sup>71</sup> All in all, only time will tell whether the contract will be able to gain sufficient liquidity to be successful and eventually even gain benchmark status.

#### 4 Evaluating the Arguments for a new Asian Marker

Overall, the candidates for a genuinely Asian marker for East of Suez crude oil pricing are still in their infancy and numerous challenges remain to be overcome. Nevertheless, there is widespread consensus that such a shift of crude price benchmarks to Asia is necessary, or that it may become so in the future, due to the previously presented eastward shift of oil markets. This section shall critically evaluate the four arguments underlying this position, covering the issues of price discovery, price control, price risk management, and regulatory risk.

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<sup>63</sup> Energy Intelligence, 'China's Bid'.

<sup>64</sup> Currently, INE intends to allocate 5.35 million cubic metres (33.65 million barrels) of storage space in the following locations: Zhanjiang (in Guangdong province), Ningbo (in Zhejiang), Rizhao (in Shandong), Dalian (in Liaoning), and Shanghai (Platts, 'China to Allocate Storage').

<sup>65</sup> Energy Intelligence, 'China Wants Its Own Crude Price'; Argus Media, 'Exchange to Launch Crude Futures'; Energy Intelligence, 'Don't Mock It'.

<sup>66</sup> Argus Media, 'Exchange to Launch Crude Futures'.

<sup>67</sup> Oil product prices in China are still regulated by the government, although the 2013 reform was an important step towards full marketization. Chinese retail prices for oil products are adjusted every 10 working days in order to take into account changes in crude oil prices. This lag between freely traded crude prices and regulated product prices hampers refineries' risk management (Fattouh, Sen, and Santos de Oliveira, 'Gasoline and Diesel Pricing Reforms', 10).

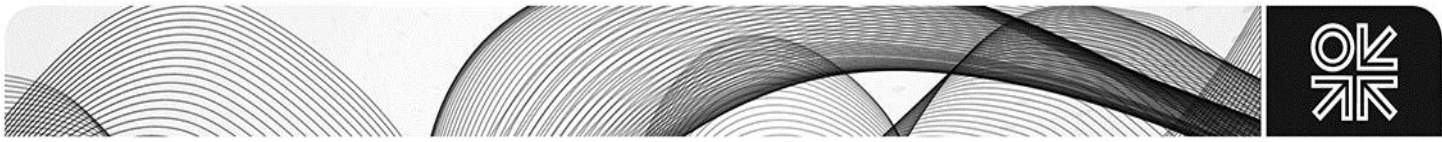
<sup>68</sup> Energy Intelligence, 'Beijing Harbors Big Ambitions'.

<sup>69</sup> Energy Intelligence, 'Don't Mock It'.

<sup>70</sup> Energy Intelligence, 'China's Bid'.

<sup>71</sup> Energy Intelligence, 'Shanghai Yet to Deliver on Crude Futures'.





### Price discovery

Firstly, there is the claim that the lack of an Asian marker truly reflecting Asian supply and demand conditions may lead to incorrect price signals.<sup>72</sup> Yet, as crude trade flows shift towards Asia and Asian buyers become more actively involved in the trading process and management of arbitrage flows, immediate and accurate price signals for the Asian basin will only be of increasing importance. However, market participants can already adjust the Dubai price by applying price differentials, thus taking into account different market dynamics such as location, quality, and time. One example of this is, for instance, the Dubai/ESPO spread which can be applied to the Dubai price in order to take Asian market fundamentals into account. It is thus not clear to what extent this criticism is still relevant, especially as it has not been capable of incentivizing the emergence of a new marker for East of Suez.

Nevertheless, Imsirovic has recently criticized Platts' Dubai marker for providing incorrect price signals and has advocated one or several own benchmarks for Asia, reflecting the region's fundamentals. In his example he assumes that traders would use deeply liquid Brent futures to hedge their price risk in the event of a major supply disruption in the Middle East. This, in turn, would widen the Brent/Dubai spread as Brent prices would rise due to increased demand, whereas the Dubai price would remain stable. According to Imsirovic this constitutes a pricing anomaly: Middle Eastern crude becomes scarcer and should thus be priced with a premium, but instead is under-priced in comparison to available – but expensive – Brent-linked substitutes.<sup>73</sup> It is not clear whether these incorrect price signals are actually a consistent market feature, but even if we consider them as such it does not necessarily lead to an own Asian marker for East of Suez being required. This is because the pricing phenomenon Imsirovic describes stems from a lower financial liquidity around the physical Dubai benchmark itself, as compared to the Brent market which traders use to hedge their positions. The Dubai market is closely linked to the Brent complex by means of EFS. This gives market participants access to the deep liquidity required for hedging and fulfils an important function in calculating the Dubai price if sufficient trades are not available. Thus, ending Dubai's reliance on Brent's financial liquidity and establishing an independent and sufficiently liquid financial market around Platts' Dubai benchmark could be part of an alternative proposal for a new Asian marker for East of Suez. This idea will be considered in detail in Section 5.

### Price control

The second argument is linked to the increasing volumes of crude imported into the Asian region and the growing financial burden for Asian buyers resulting therefrom. In this sense, it has been claimed that the existence of an own regional marker for the Asian basin would allow Asian buyers to exert more control over prices for their imported crude oil. This argument has been closely tied to the announced Shanghai crude futures contract. It is, however, not clear how such control over prices should be exercised in detail. In addition, it is a central condition for reference crudes that they are not politically influenced<sup>74</sup> and whichever candidate might develop as an Asian marker will be under particular observation, especially given the respective governments backing the ESPO Blend and the Shanghai contract.

But even if we grant the price control argument some form of validity, it is not clear why a new Asian marker would be required to exert influence over the price generation process. As previously stated, Asian market participants have intensified their crude oil trading activities throughout 2014 and 2015 and, in the case of the Platts Dubai window, have to some extent shifted from price takers to price makers.<sup>75</sup>

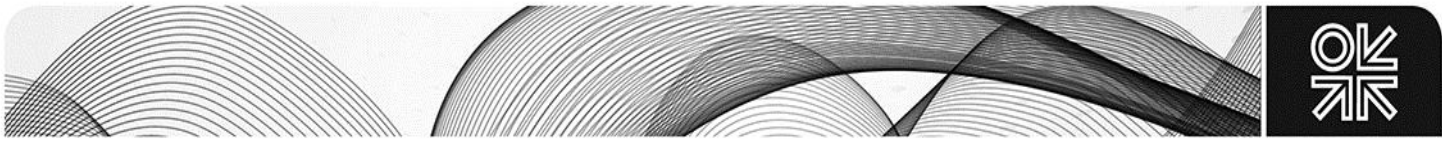
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<sup>72</sup> Horsnell and Mabro, *Oil Markets and Prices*, 222.

<sup>73</sup> Imsirovic, 'Asian Oil Markets in Transition'; Imsirovic, 'Oil Markets in Transition and Dubai'.

<sup>74</sup> Montepeque and Stewart, 'Sour Crude Pricing'.

<sup>75</sup> Imsirovic, 'Oil Markets in Transition and Dubai'.



### **Price risk management**

Thirdly, the argument can be made that a financial benchmark launched at an Asian exchange could potentially offer better risk management for Asian buyers. This should be of increasing importance as crude oil trade flows shift to Asia and Asian buyers become more actively involved in the trading process, which in turn might drive demand for new risk management tools in the Asian basin. However, the ESPO Blend is some distance away from developing a liquid financial market that could enable effective risk management, while the Shanghai futures contract has various barriers to overcome – not to mention the fact that final details (including its definite launching date) are yet to be announced. Moreover, it is not clear why market participants should shift away from the deeply liquid Brent futures market underlying the Dubai marker. The case of the DME Oman Crude Oil Futures Contract exemplifies the difficulties of attracting sufficient financial liquidity to a new contract. Since its launch in 2007 the contract has failed to attract significant interest in terms of risk management and has been mainly used as an instrument for physical delivery of Omani crude so far. As benchmark systems are inherently inert due to the positive feedback mechanism of liquidity (in other words, liquidity attracts further liquidity), any new financial benchmark will have to provide sufficient added value to incentivize a diversion of financial liquidity away from the Brent/Dubai complex.

### **Regulatory risk**

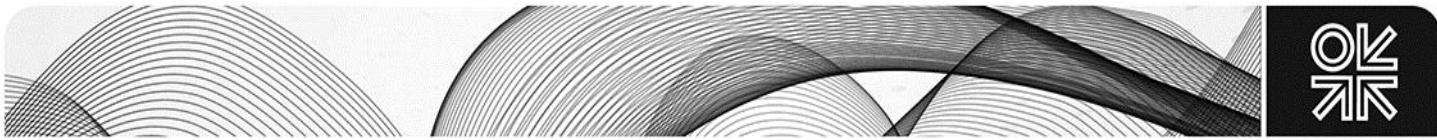
Last but not least, regulatory pressure on western crude price benchmarks has been building up and could possibly incentivize a shift to more laxly regulated jurisdictions. This would potentially affect Platts' Dated Brent assessment, but may also be extended to its Oman/Dubai assessment.<sup>76</sup> Either way, this has the potential to significantly influence both the price discovery and risk management service of both Dated Brent and the widely used Dubai benchmark. Even if the planned European regulation of benchmarks does not directly influence the Dubai marker, it will most likely do so indirectly through the adverse impact on Brent's financial liquidity, as Dubai/Oman currently relies heavily on the Brent complex for both price discovery and financial liquidity. In this light, the two candidates presented earlier (ESPO Blend and the Shanghai contract) are proposed as being able to divert liquidity away from more regulated benchmarks. It is, however, not clear why a new Asian marker would be necessarily required for this.

All in all, the four arguments presented above do not confirm the necessity of a genuinely Asian marker for East of Suez crude oil pricing. This is because all the underlying issues can also be solved by means of a reference crude from outside of Asia. Hence, the fact that oil market dynamics are shifting eastwards does not allow the conclusion that the emergence of a new Asian marker, such as ESPO Blend or the Shanghai contract, is inevitable. In fact, the inertia of the system of crude price benchmarks poses a barrier to a shift away from the current Brent/Dubai complex, due to the self-perpetuating nature of financial liquidity.

There is, however, the risk that the position of Dubai as the predominant marker for East of Suez is weakened, as regulatory pressure on Brent increases. The position of Dubai is highly dependent on the Brent complex and its deep financial liquidity for both price discovery and price risk management. It is thus not unimaginable that, as regulatory pressure on Brent increases, financial liquidity is diverted away from Brent, thus also negatively affecting Platts' Dubai marker. The reallocation of this financial liquidity would, in turn, allow the emergence of a new Asian marker for East of Suez crude oil pricing. It is because of this that the existing system of Middle Eastern crude price benchmarks should be proactively amended, if it is not to lose its position to an Asian opponent. A detailed proposal for such changes will be presented in the next section. Failing that, the DME may lose liquidity to a newly emerging marker in Asia, while Platts could see its Dubai marker struggle as liquidity is withdrawn from Brent. All in all, strengthening the Gulf's regional benchmarks for Asia would not only allow it to cope

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<sup>76</sup> 'Price Reporting Probe'.



with the above-mentioned shifting oil market dynamics, but could also solve several issues weakening the current Middle Eastern benchmark system.

## 5 Rebuilding the Middle Eastern Marker

Only recently Imsirovic rhetorically asked whether '[...] DME can do for Dubai what the International Petroleum Exchange (IPE) did for Brent?',<sup>77</sup> without going into details what this would mean in particular. Analogous to the IPE/Brent linkage,<sup>78</sup> it is possible to substantiate the link between the physical Dubai market and the DME Oman futures market by means of two components: the possibility of hedging the physical Dubai benchmark with the DME Oman futures contract and generating an additional price signal for the Dubai benchmark on the DME (and vice versa). This is possible because the Dubai benchmark, despite its name, is a brand consisting of the grades Dubai, Oman, and Upper Zakum. According to the DME, out of 129 physical convergences in the Platts Dubai window in 2014, Oman was the largest single grade with 67 cargoes (62 Upper Zakum and 2 Dubai).<sup>79</sup> In other words, Omani crude is the link between the physical Dubai market and the financial Oman market. This is exemplified by the potential for arbitrage taking place between the two markets: depending on the price differentials, physical Omani crude can be bought over the physical delivery mechanism of the DME Oman futures contract and then profitably sold in the Dubai Platts window (and vice versa).<sup>80</sup>

In terms of the first component of this potential linkage – price risk management – the DME Oman futures contract should involve less basis risk for hedging exposure to Dubai prices than ICE Brent futures, which are commonly used because of their deep financial liquidity. This is due to the fact that the market fundamentals influencing the DME Oman futures price should be closer to those impacting the Dubai price, than the market conditions of ICE Brent futures. Hence, the correlation between the price of the hedging instrument (DME Oman futures contract) and the price of the reference crude (Dubai) should be higher and therefore the basis risk lower. Additionally, the fact that many Middle Eastern crude exports are priced off an arithmetic average of Platts Dubai and Oman price assessments should encourage the usage of the DME contract as a hedging instrument for these transactions (disregarding liquidity considerations). This is because Oman's 50 per cent weight in the Dubai/Oman benchmark should increase the correlation of this benchmark price and the DME Oman futures price, thus further lowering basis risk (as compared to a benchmark solely consisting of Dubai).

The second component of the link, price discovery, should be bidirectional, as it is for the IPE/Brent link. This means that the Oman price signal generated on the DME would both originate from the Platts Dubai window as well as occasionally feeding back into the physical Dubai market (entailing Dubai, Oman, and Upper Zakum). Firstly, the DME Oman futures contract could, for instance, converge to a price signal generated on the physical Dubai market by means of an index (analogous to the ICE Brent index). Secondly, the DME Oman price could be used to derive the Dubai price (in the event of insufficient concluded deals and bid/offer information in the Platts Dubai window). One possible method would be utilization of the Exchange of Futures for Physicals (EFP) mechanism of the DME,<sup>81</sup> which if added to the price of the Oman futures contract for a given month would yield the Oman forward price for the relevant month. The Dubai forward price for that month could then be derived using information from Dubai/Oman swaps.

### Fixing Dubai

Currently, Platts' Dubai marker relies heavily on the financial layers around the Brent complex for both of these services. This has led to frequent criticism of the Dubai marker as a 'derived benchmark',

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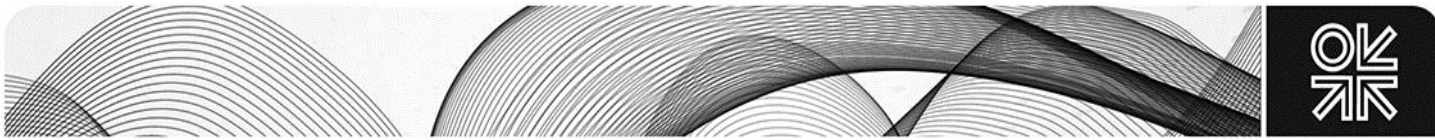
<sup>77</sup> Imsirovic, 'Oil Markets in Transition and Dubai', 6.

<sup>78</sup> For a detailed description of the IPE/Brent complex see: Fattouh, 'Anatomy', 36 ff.

<sup>79</sup> Dubai Mercantile Exchange, 'Trading Data', 5.

<sup>80</sup> Imsirovic, 'Oil Markets in Transition and Dubai', 6.

<sup>81</sup> Note that DME Oman EFP values are not declared to the market and would have to be assessed by a PRA.



meaning that it does not independently fulfil both functions identified as crucial for crude price benchmarks.<sup>82</sup> This must not necessarily weaken Dubai's position. In fact, the financial layers linking Brent and Dubai may have been central for Dubai's success as a marker for East of Suez.<sup>83</sup> However, this dependence could be terminated (for example in anticipation of regulatory pressure on Brent), by capping the link to the Brent complex and establishing a connection between Dubai and the DME Oman contract. In terms of price risk management, Dubai would no longer have to rely on ICE Brent futures but on the DME Oman contract, which would involve lower basis risk. Regarding price discovery in case of an illiquid Platts window, the Brent/Dubai EFS mechanism would be substituted by utilizing a price signal generated on the DME. Additionally, the Platts window is often criticized as it allows a small group of participants to act as price makers. In the case of the Dubai window, for instance, Shell, Vitol, Chinaoil, and Unipecc accounted for about three-quarters of all trades concluded between July 2013 and July 2014.<sup>84</sup> The Brent window is equally dominated by a small group of traders, but benefits from the additional price signal generated on the ICE.<sup>85</sup> In this sense, the Platts Dubai window is more prone to this criticism as it currently lacks its own financial layers acting as an additional source of price discovery. This could be solved by linking the Dubai benchmark with the DME, as activity in the DME Oman trading window is less concentrated than in the Platts Dubai window. During 2014 no participant was responsible for more than 12 per cent of Oman window trading activity per month.<sup>86</sup>

### **Fixing DME Oman**

Firstly, linking the DME Oman futures contract to the physical Dubai market would add a physical dimension to the contract's price signal. At the moment, physical settlement takes place against the average of daily settlement prices over the respective month; this would be substituted by financial settlement prices derived from the physical Dubai market. Secondly, and more importantly, the DME and the Oman futures contract would benefit from the increasing use of the contract as a hedging instrument for Dubai price exposure, thus further attracting liquidity. In this context it is important to note that although the DME officially promotes a change in benchmarking from Platts' Dubai assessment to its Oman contract, it should be in the interest of the exchange to help Dubai maintain its benchmark status if this involves increased trading of the DME Oman futures contract. This is because, in the end, trade volumes and liquidity are the important metrics for an exchange. Whether this involves reaching benchmark status for a specific contract is not the key issue from the exchange's point of view. In this sense, there is a difference between successfully launching a futures contract – which means attracting sufficient trade volumes and liquidity – and this futures contract becoming a price benchmark. Accordingly, ICE would be the victim of such a link between DME and Dubai, as it currently benefits from the liquidity stemming from the EFS mechanism through which the price of Dubai is often generated, as well as from the fact that Brent futures are often used to hedge exposure to Dubai flat price risk. This liquidity would be cut if Dubai were to rely on the DME Oman contract for price discovery and risk management, thus shifting liquidity towards the DME.

### **Dealing with eastward shifting markets**

Last but not least, the proposed DME Oman/Dubai link would be able to cope with the four arguments (seen in the previous section) derived from shifting oil market dynamics. Firstly, Imsirovic's critique of the price signal of the Platts Dubai benchmark fundamentally stems from the fact that traders use the Brent market to hedge their Dubai price exposure.<sup>87</sup> This would be solved by linking the DME Oman futures contract to the physical Dubai market, enabling market players to hedge their price exposure with DME Oman contracts. This should lead to an accurate price signal: an increase in the price of

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<sup>82</sup> Horsnell and Mabro, *Oil Markets and Prices*, 212–213; Imsirovic, 'Asian Oil Markets in Transition'.

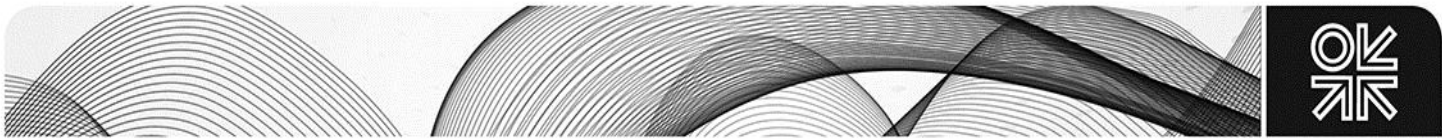
<sup>83</sup> Fattouh, 'Dubai Benchmark and Its Role', 4–5.

<sup>84</sup> Imsirovic, 'Oil Markets in Transition and Dubai', 5.

<sup>85</sup> *Ibid.*, 8.

<sup>86</sup> Dubai Mercantile Exchange, 'Trading Data', 3.

<sup>87</sup> Imsirovic, 'Oil Markets in Transition and Dubai'.



Omani crude (relative to, for instance, North Sea or West African oil) due to an increased demand for DME Oman futures contracts, which would be used to hedge positions. This would then, in turn, lead to a higher Dubai price both through its influence in the price setting of Dubai as well as arbitrage between the Dubai partials market and the DME Oman market. Secondly, the price control argument is not very convincing. But even if we grant it some form of validity, establishing an own financial market around the physical Dubai benchmark by means of the DME Oman contract would offer market players a distinct platform on which to exert influence on Dubai prices. Thirdly, and as previously argued, hedging Dubai price exposure with the DME Oman contract would involve less basis risk compared to Brent futures and should, in fact, be the salient hedging instrument for this purpose. Last but not least, regarding possible Brent regulation, the potential linkage between the Dubai market and the DME Oman contract would be beneficial because this would effectively cap the existing link to the Brent complex. Both in terms of price discovery and risk management, the physical Dubai benchmark would become independent of the Brent market and thus unaffected by the regulatory risk potentially weakening the status of Dated Brent as a benchmark.

## 6 Conclusion

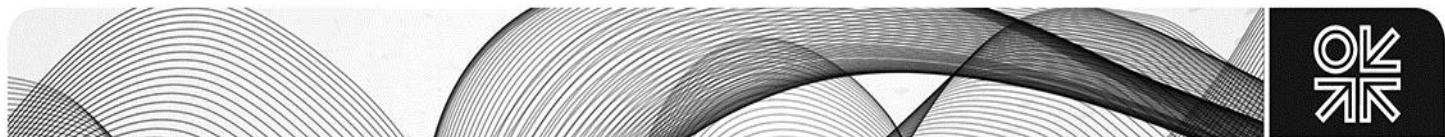
Already in 2012, Fattouh pointed out that

[...] 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>88</sup>

The increased Chinese activity in the Platts Dubai window is a manifestation of the eastward shift being experienced by international oil markets. But it is regulatory pressure that eventually could lead to such a radical change, diverting financial liquidity away from the Brent complex to less strictly regulated regimes. It is especially in anticipation of this western regulation that DME and Platts (or another PRA) should prepare the link between the physical Dubai and the Oman futures market. Instead of allowing financial liquidity flow to Asia, the aim should be to divert it to the DME Oman/Dubai complex, where Dubai exposure could be hedged by means of the DME contract. All in all, this paper has shown that changing market dynamics do not make a genuinely Asian marker for East of Suez crude oil pricing inevitable. The DME Oman/Dubai linkage is a proposal to prepare the Middle Eastern benchmark system for the future challenges posed by an increasingly eastward shifting balance of power in international oil markets.

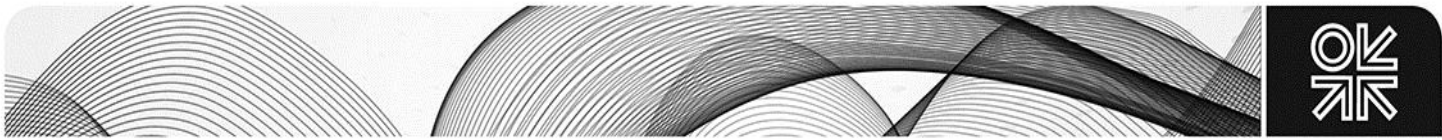
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<sup>88</sup> Fattouh, 'Dubai Benchmark and Its Role', 10.



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