



## Evolving Benchmarks in the New Oil Order

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### Introduction

World oil prices continue to show large unexpected swings, including devastating lows. For the third time since 1999, oil prices have fallen to production-cost levels. Persistent surplus requires lower prices for even longer, where aggressive market forces will shake out the weakest players and will cause others to cut investments and hence curtail production in the absence of a voluntarily supply reduction led by Saudi Arabia. Instead, we are witnessing a Battle of the Giants, a fight for market share between Saudi Arabia, the US, Russia, Iraq and Iran and many of the other large producing countries. But once lower prices have done their work, prices have to go up again to stimulate adequate investments to avoid tightness in later years. However, \$50-60 per barrel may be enough for the coming years to revamp US shale supply growth, so it is unclear when more expensive projects will be needed again.

It is important to understand that commodities such as crude oil are spot assets where prices need to clear today's supply and demand unlike financial markets, which are anticipatory assets that are driven by expectations. Thus, oil prices are strongly driven by the actual balance between demand and supply that eventually results in the commercial inventories in the consumer countries and spare capacity in the OPEC countries. Hence the importance market participants give to the large daily flow of information and reports about the status of the market in order to get as accurate information as possible for a proper price formation process. Any mismatch causing oversupply or shortage will directly find its way in the setting of the price. This dynamic process, which is dominated by supply-demand fundamentals, is further exacerbated by 1) geopolitics, particularly in case of market tightness or more recently by the oil (price) regime change inflicted by the Saudis who unilaterally decided to change the rules of the game, and 2) geo-finance, most importantly by the strength (or weakness) of the US dollar. Longer term, climate change & the technology revolution will need to be added, along with geopolitics and geo-finance, as additional driving forces that set the oil prices around the world.

Oil benchmarks are the most visible tools capturing the results of this price game, representing over 500 distinct pricing hubs around the world. This large and varied group of crude grades all heavily rely on a small number of liquid, transparent price markers, on which the global or regional oil pricing system is anchored. The key marker grades currently include WTI, Brent and Dubai. The financial layers that have grown around the crude oil benchmarks have become central, not only for market participants to hedge their risk and to bet on oil price movements, but also in determining the oil price through the complex price discovery process. The information derived from financial layers is essential for identifying the price for the benchmark crude oils that are traded at a flat price and the many crudes that are traded at a differential to these benchmarks.<sup>1</sup> Box 1 describes the role of commodity traders in the physical flow of oil.

**Box 1**

A large role in the physical flow of oil is taken by the commodity traders, who identify and act on imbalances between supply and demand, focusing on margins (via price differentials) and not on flat price levels. They basically achieve this role by moving - and where applicable transforming - physical commodities from places where they are plentiful to where they are required. For this purpose they negotiate off-take agreements with hundreds of oil producers, each crude having its own unique characteristics. And they also negotiate off-take agreements with hundreds of refiners, each of whom have their own unique configuration to process specific sets of crude oil. They are also large participants in the futures markets. The activities of large-scale commodity traders improve market competitiveness.<sup>2</sup>

In recent years Brent crude has become the world's most commonly referenced crude oil price benchmark outside the US and a large proportion of global physical oil trade is priced at a differential to the Brent oil complex. In the US, WTI has firmly re-established itself as the most important price marker for all the types of crude produced in North America. Dubai, the main Asian benchmark since the mid-1980s and responsible for about 20 million barrels per day (mln b/d) of crude oil currently exported to Asia, has also further evolved in recent years. The Dubai benchmark has been impacted by (a) China's intensified trading activity and the general oil demand growth in Asia, (b) the revolutionary increase in US Light Tight Oil (LTO) production and its global impact, and (c) the associated shifts in crude oil and oil products trade dynamics.<sup>3</sup> The current dynamics in each of the benchmarks regions, their interaction, co-dependency and competition, and the role each of these three markers take, and the challenges they face, are discussed in more detail below.

Several initiatives have been occasionally undertaken to establish new (competing) benchmarks, such as the Russian East Siberia Pacific Ocean (ESPO) benchmark, but so far, all without great success. That said, the new entrant, Shanghai International Mercantile Exchange (INE), in conjunction with the major state-owned Chinese oil companies, is determined to win a big position in the price formation of oil. This is not unreasonable given the fact that China will quickly grow to become the single largest crude oil importer in the world by far. China already imports 6.5 mln b/d in 2015, and imports are expected to grow to almost 9 mln b/d in 2020, an amount equal to 17% of the world's total seaborne crude oil trade. But before looking to the east, let's first look to the west, to WTI.

**The WTI Benchmark**

West Texas Intermediate (WTI) consists of a blend of several U.S. domestic streams of light sweet crude oil. The delivery point is in Cushing, Oklahoma. Cushing is a vital transshipment point with many intersecting pipelines, storage facilities and easy access to refiners and suppliers. This strategic position led to WTI's development as a significant physical market price reference well before crude oil futures contracts were listed on the New York Mercantile Exchange (NYMEX) in 1983. (The NYMEX is now part of the CME Group.) Every day, many hundreds of thousands of light sweet crude oil futures and options



are traded, each contract representing 1,000 barrels. Although physical delivery will take place at expiry at Cushing, in reality, only a small fraction is actually delivered.

In 2015 many new trading records were broken, the last one on December 8, 2015 when the CME Group announced it reached a new trading volume record for combined NYMEX WTI futures and options of 1,841,295 contracts, and for futures alone of 1,595,710 contracts, showing the increased need by participants in the global oil markets to manage their risks during times of heightened price volatility and uncertainty.<sup>4</sup> Together with the Intercontinental Exchange (ICE) Brent futures and options, these two futures contracts are the most liquid, transparent oil trading instruments available to the industry today. Each futures contract jockey for pole position in an ever-larger market, competing fiercely to attract the different market participants, which include commercial players, swap dealers and money managers. Both contracts compete in helping (a) commercials to manage price risk by hedging their physical crude oil sales and purchases, as well as in helping (b) swap dealers to shift exposure and manage price risk for clients, and in helping (c) speculators to make money by buying or selling futures without the intention of buying or selling actual commodities.

The latter group has grown in importance, which includes long-term passive oil exchange-traded-funds (ETFs) and hedge funds with high-frequency trading strategies. These funds take positions by buying and selling energy commodity derivatives, creating large swings in net speculative length at times of high price volatility. For example, in 2015 excellent returns were made from systematically owning delta-hedged straddles on particular WTI futures contracts. The particular underlying futures contracts were three-months out from maturity and twelve-months out. A straddle is a combination of at-the-money calls and puts. Delta hedging means that a trader buys or sells a sufficient number of futures contracts against the options strategy such that the net exposure to the market is zero, as of the time of the hedging activity. Such a strategy will be profitable if the realized volatility of crude oil is greater than that expected by the options market. In this particular strategy, the options were delta-hedged daily at the close using futures contracts that had the same maturity as the options, and then each month the strategy entailed rolling into fresh at-the-money options.<sup>5</sup>

Historically, WTI was very connected to Brent and vice versa: the spread was set by the transport differential. Between 1993 and 2006, the spread was typically very narrow at an average of \$1.66 for spot WTI and not very volatile. However, with the fast growing captive supply base of US Light Tight Oil (LTO), this tightly knotted link disappeared. As of the start of 2011, WTI prices saw a further widening between Brent and WTI, reaching a peak spread of \$29.70/bbl on September 22, 2011.<sup>6</sup> Quickly markets started to talk about the irrelevance of WTI in the price formation of oil, and focus shifted squarely to Brent. WTI was seen as an island, isolated and no longer relevant to determine the true price of oil. However, WTI did its work exactly as it should, giving a strong signal to US investors in oil that pipelines and other midstream infrastructure had to be built in order to accommodate the fast growing volumes of oil produced in the new super-3 shale oil fields: the Bakken Formation in North Dakota and the Eagle Ford Shale and Permian Basin in Texas. This new infrastructure changed the flow of crude oil to North-South and West-East instead of South-North.

During the years, 2011 through 2013, a big investment spree took place at times when the US was “long crude.” During this period, bottlenecks constantly constrained a free flow of LTO from wells to the



refinery centers around Chicago and the Gulf Coast. Tanks at Cushing, Oklahoma, became unpleasantly full while new storage facilities were still under construction, leading industry players, especially the non-commercial ones active in the futures markets, to push WTI prices lower for oil that could not flow. However, at the start of this period, crude oil markets were navigating between tight markets and the possible impact of the Arab Spring and the civil war in Libya, and the threat that the EU debt crisis could trigger a global economic recession. As a result speculative positions showed large swings with NYMEX net long non-commercial positions (futures and options) in crude oil increasing from 25 million barrels in 3Q2010 to over 250 million barrels in 2Q2011.<sup>7</sup> But with the arrival of a vast new infrastructure, in combination with a reversal-to-negative production growth for US LTO, spreads started to rapidly shrink to virtually zero today. Meanwhile 2015 was closing out with crude oil prices at recent record lows at about \$36.50/bbl for both WTI and Brent. This is reflecting ongoing oversupply of one to one-and-a-half million b/d in global oil markets at a time crude oil storage in the world could become rapidly exhausted.

The current state of the industry has led to the great paradox where the country that drives the oversupply and has to shrink production, and is seen as the new marginal swing producer, is also pulling more oil from outside its territory to its continent; crude imports into the US are likely to stay elevated and could ultimately also create storage problems on the Gulf Coast during the next seasonal refinery maintenance period in the spring, despite LTO output likely declining further.<sup>8</sup> This is where WTI connects to the global price marker Brent (through the Louisiana Light Sweet (LLS) crude marker at the US Gulf Coast.) With 600,000 bbl/d of new pipelines in 2015 bypassing Cushing and directing Permian oil towards Houston, the region already “closed its door” to more oil and started to redirect oil supplies to other hubs like Cushing, where inventories reached a new record of 61 million barrels. As a result, LLS - WTI is now below uncommitted pipeline tariffs. This closes the arbitrage (“arb”) to move additional inland light oil to the Gulf Coast.<sup>9</sup> At the same time, the LLS-Brent import arb has to stay open - i.e., LLS trading at a premium to Brent - to facilitate excess waterborne crude heading to the US where there remains 100 million barrels of available storage.<sup>10</sup> Thus WTI becomes an increasingly important benchmark, not standing alone, but also in its interplay with Brent through LLS for imports and in its interplay with other crudes, which are either produced in Canada or domestically in the US, including in deepwater Gulf of Mexico. The sour grade of crude oil, Mars, for example, is produced in deepwater Gulf of Mexico.

Regarding Mars, it is one of the three grades of crude used in determining the Argus Sour Crude Index (ASCI) price. The ASCI index provides a daily price for medium sour crude at the US Gulf of Mexico trading hub, and is used amongst others by Saudi Arabia, Kuwait and Iraq to price exports to the US of Arab Extra Light, Arab Light, Arab Medium, Arab Heavy, Kuwait Export Blend and Basrah Light and Kirkuk. Although export volumes from the Middle East have decreased materially since the shale oil revolution, the ASCI index will most likely stay relevant - as long as production levels of medium sour crude in the Gulf stay at adequate levels - because of its strong correlation to prices in the international crude oil market, and especially now that the US crude oil export ban has been lifted (in December 2015.) This is supported by the fact that the ASCI price is published both as a differential to WTI and as a fixed flat price, enabling users to hedge financial exposure using WTI futures.<sup>11</sup>



Finally, what will be the possible impact on WTI now the crude export ban has been lifted? In the short run, the US and Canada are poised to produce less oil and hence have less to export. The US also has a very efficient refinery industry that is highly competitive versus other refinery centers around the globe, and for that reason there is no reason to export crude for processing in less efficient refiners outside the US. Nevertheless, there will be some small benefits to US producers based on the tighter Bakken-WTI spreads because Bakken and other domestic sweet crudes will now have new export markets that will bring higher revenues overall.<sup>12</sup>

Furthermore, after a year of production decline, shale oil will have to start growing again in 2017 to balance the markets. Recent forecasts show crude oil and condensate production in the US is expected to increase from about 8.8 mln b/d later this year to 10.6 mln b/d by 2020.<sup>13</sup> At that level, crude exports might double to about 1 mln b/d. Moreover, connecting the US as one of the three largest crude oil producers - together with Saudi Arabia and Russia - with crude oil markets in the rest of the world should result in a more efficient, liquid and robust global oil price discovery process.

The lifting of the export ban could have another result. It could make an incremental difference in maintaining a narrow spread between North Sea Brent and US West Texas Intermediate as was the case before 2011. Also, in the US Gulf Coast, WTI and LLS could go up further in price relative to the sour crude grades such as Mars, as the export ban artificially depressed sweet crude in the US Gulf Coast market relative to sour crudes. By way of explanation of the latter point, the Gulf refiners had been designed for heavier sour crudes, but could operate less efficiently with domestically produced light sweet crudes as long as domestic sweet crude prices were artificially depressed. But with the US now able to freely export crude, the price of domestically produced light sweet crude oil would no longer need to be artificially depressed in order to find a market, so one would also expect a reversion to importing heavier, sour crudes that maximize yield (and profits) for Gulf refiners.

Most importantly, the lifting of the ban expands the geographical reach of WTI and makes the benchmark closer to a seaborne price marker, improving its responsiveness to global changes. That said, especially in the shorter term, there will only be a marginal increase in the total net export flows from the US.

Of note, the NYMEX has recently announced that it will launch six new WTI Houston crude contracts to give clients greater ability to participate in the rapidly evolving and internationalizing WTI market now that the crude export has been lifted.

In conclusion, WTI as a benchmark is expected to benefit from the lifting of the crude export ban, narrowing the Brent-WTI spread on average, although it can be still quite volatile due to industry dynamics (such as supply-demand fundamentals, geopolitics, geo-finance and climate change & technological innovation.) It will also make WTI a better benchmark for managing oil price risk around the globe, although definitely not perfect because of regional dynamics that point to volatile basis risks, which can quickly become much higher at certain moments in time.



## The Brent Benchmark

On the other side of the Atlantic Basin, in the North Sea, we find the home of the Brent complex, the primary benchmark for international oil prices. Brent serves as the price reference for roughly two-thirds of the world's physically traded oil volume - with hundreds of other grades of crude oil traded against a price differential with Brent. Launched in 1986, the complex consists of spot physical (Platts Dated Brent), cash BFOE (forward physical cargoes), ICE Brent futures and options as well as many inter-product, inter-month and inter-quality spread-trading opportunities.<sup>14</sup> (BFOE is defined below.) Here, the ICE Brent futures contract is a key component of that complex, financially settled against the Brent Index, and ultimately deliverable via the Exchange of Futures for Physicals (EFP) mechanism. (Box 2 provides a fuller description.)

Initially, the Brent futures contract was based solely on crude from the Brent field. However, as the physical market suffered from declining production to levels that constrained liquidity, additional crudes were added to align the Brent futures contract with the forward (cash) market. Brent futures contracts are currently based on the underlying physical crudes from the Brent, Forties, Oseberg and Ekofisk complex (BFOE), together consisting of more than one hundred oil fields. Given that these four crude oil blends have slightly different sour grades and separate delivery points, highly successful price de-escalators were introduced by Platts and Argus, the two most important price reporting agencies, to give value to the individual BFOE characteristics and changing refinery feedstock needs.<sup>15</sup> Together with all the synthetic financial products delivered by ICE, these innovative mechanisms help to generate long forward price curves, and to further optimize the price discovery process.

### Box 2

The ICE Brent futures contract is linked to the forward BFOE physical contract and hence the underlying (spot) Dated Brent market by the Exchange of Futures for Physical (EFP) mechanism.<sup>16</sup> The futures contract settles against the ICE Brent index price for the day following the last trading day of the Brent futures contract. At expiry of a Brent futures contract, the index price is based on the average value of BFOE cash cargoes on expiry date. The index is also calculated by the exchange every day. Such EFP allows the exchange of a futures position for a physical position in the underlying cash market, and allows traders to choose their trading partners while retaining anonymity in the market-at-large rather than accepting a randomly matched partner. Meanwhile, trade in Dated Brent has had highly volatile monthly volumes - both in aggregate as well as per BFOE crude stream - of 4 to 16 million barrels per month over the period, April 2014 and April 2015, while physical BFOE production hovers around 800,000 barrels per day.<sup>17</sup>

There are large differences between the WTI and the Brent complex. The US is characterized by a large number of domestic oil companies and other players, whom use futures and options to manage their risk. The US is also characterized by a strong and active capital market with other financial participants, whom have shown an increased interest in oil prices. In contrast, the Brent market is the home of a very small exclusive club of industry players, historically also joined by financial players, but since the great financial crisis, much less so. Also the contract size in the US is much smaller, 1,000 barrels per lot with



the ability to trade partials of nearly every size, while a physical Brent cargo is 600,000 barrels. Another remarkable difference is that in the US there is always physical delivery of crude at expiry of the future, which is not the case of Brent. Finally, physical Brent is bought by oil companies as far away as South Korea, while WTI can only recently be exported to beyond a handful of countries. But irrespective of these differences, the ICE Brent futures contract has seen impressive growth in open interest and average daily volume in recent years similar to what we have witnessed in the NYMEX WTI futures market; ICE Brent saw an open interest record of over 2 million lots on June 10, 2015.<sup>18</sup>

While Brent is currently the primary benchmark for pricing many international traded grades of crude oil, it has constantly evolved in order to maintain its relevance and suitability, especially over the medium and longer term. The main challenge facing Brent is a faster than expected decline in oil production in the North Sea, especially now that oil prices are expected lower for longer, and capital expenditure cuts are the flavor of the day. With aging fields that have ever-shrinking output, production from fields that constitute the current BFOE benchmark could become too low during summer maintenance periods to support the benchmark with enough liquidity - especially when physical volumes fall under the cargo size of 600,000 b/d, and thus result in not enough fresh cargoes available for sale during the summer months. For this reason, discussions amongst the key players in the Brent market, notably Platts, Argus, ICE, CME on the one hand, and on the other hand, Shell, Vitol and a handful of other major oil companies and oil commodity traders active in the Brent market, have already taken place for some time now regarding which new crude streams to add to BFOE and when. Fortunately, Norway's reserve base has grown by the discovery of the giant Johan Sverdrup oil field. Together with other smaller developments, about 800,000 b/d of new capacity additions will be added between 2015 and 2020, more than enough to offset lost production from the current producing fields in decline. However, the situation is much worse on the UK part of the North Sea. UK production has been in steep decline since its peak at close to 2.6 mln b/d in 1999, to about 0.8-1 mln b/d today from 170 fields, and there are no new major developments at hand to stem the underlying decline currently pegged at 12% p.a.<sup>19</sup>

Besides its own "internal" challenges, Brent is also likely to face more competition both from the East (of Suez) and the West (US). The ongoing shift in the center of gravity of global oil demand to Asia, and the rise of Middle East exports to this region for the remaining and next decade, could result in a stronger role for the Dubai Mercantile Exchange (DME) and the planned introduction of new crude oil futures by the Shanghai International Energy Exchange (INE). The decision by the US to lift its current ban on crude oil exports will also alter global supply-and-demand and thus trade flow dynamics. For that reason, Platts recently opened consultation with its 280 or so participants in the Market-on-Close price discovery process on a possible 45-day structure for Brent from 2020 in order to align with the evolution of the North Sea supply trend towards the trading of cargoes with longer lead times ahead of loading.

Finally, increased regulation of commodity markets in Europe may have a big impact on Brent. There are strong perceptions that new regulations will ultimately squeeze the number of active participants and dry up liquidity in the Brent complex - a prerequisite for good functioning of price markers - and trigger a shift of the business to Asia, where new entrants are working on establishing new benchmarks. -Although the jury is out if and when those new entrants will be successful in a very conservative market, perhaps Brent has to further develop as a "virtual" or even "synthetic" benchmark, where price



discovery taking place in the paper market is supported by a larger group of similar seaborne crudes beyond the North Sea. In any case, the Brent futures contract’s outright price underpins a vast matrix of global prices. The contract’s deep liquidity and real-time prices provide price discovery and numerous trading and hedging opportunities for both physical and financial market participants. Figure 1 illustrates the linkages that the ICE Brent futures contract has to other oil benchmarks and related petroleum-complex products.

**Figure 1**  
The Co-Dependency of Price Across the Oil Complex

Region	Global			Asia		US		
Primary Crude (*Future)	(ICE) Brent Crude *			Dubai		WTI *		
Ancillary crude	Urals			ESPO		LLS, Mars, ASCI		
Price/liquidity Link	Cracks to..			Cracks to..		Cracks to..		
Primary product (*Future)	ICE Gasoil* (EU)	Euro-Bob Gasoline Barges	Fuel Oil 3.5% Rdam Barge	Singapore 0.5% Gasoil	Singapore 180CST FO	NYH RBOB*	NYH Heat*	USGC 3% FO
Price/liquidity Linkage	Spreads/diff			(including some cracks) to...		Spreads/diff		
Secondary product examples	10p pm Diesel barges Rdam	Naphtha CIF NWE ----- Gasoline FOB NWE Cargoes	FO 1% Cargoes NWE	Jet (Regrade) FOB Sing -----	Singapore 380CST Fuel Oil	RBOB to Euro Oxy Gasoline	USGC Jet -----	USGC 1% FO
Price/liquidity Linkage up/down and across chains/regions and via cracks to crudes	----- 0.1% NWE Cargoes Jet CIF NWE ----- Jet Cargo CIF NWE	-----	FO 1% CIF MED Cargoes	----- Singapore 0.05% Gasoil	-----	-----	NYH Heat Barge	-----

Source: ICE, “Oil Markets: The New Opportunities and Risks,” Mike Davis, Head of Market Development, ICE Futures Europe, October 23, 2015.

### The Dubai Benchmark

Dubai is the primary pricing reference for crude oil delivered to Asian refineries from the Middle East Gulf. For the time being, Dubai is the only physical energy exchange East of Suez. It has also become the pricing reference for cargoes of crude oil sold from Russia’s East Siberian port of Kozmino to refiners using the East Siberia Pacific Ocean (ESPO) crude oil pipeline. Starting with the spot trade in Dubai crude





oil since the mid-1980s, additional crude oil streams have been added to the contract in recent years, currently allowing for the individual physical delivery of mid-sour Oman, Dubai and Upper Zakum grades of oil at a range of appropriate differentials. Aggregate production underlying the contract currently stands at 1.8 mln b/d, the largest comingled crude stream under any of the benchmarks in the world, and production is still growing with more Upper Zakum oil coming on stream. Price assessment of the Dubai price takes place during the Platts Dubai window, which has grown in importance in recent years as the liquidity in the Platts “window” has increased significantly. Approximately 18 million b/d of crude oil passes through the Strait of Hormuz, largely priced against the Platts Dubai assessment.<sup>20</sup>

This price discovery process has been strengthened by the deep financial layers that have emerged around Dubai and which have linked Dubai to the highly liquid Brent complex, of which the Brent/Dubai exchange of futures for swaps (EFS) and the Dubai inter-month swaps are the most important. The EFS allows traders to convert their Dubai price exposure into a Brent exposure, which is easier to manage given the high liquidity of the Brent complex. The intermonth-swap reflects the price differential between two swaps and allows traders to hedge their position from one month to the next. Given these strong links, one can argue that Brent sets the flat price level while the EFS and inter-month Dubai spread market set the price differential against Brent, followed by these differentials being used to calculate a flat price for Dubai. Higher demand from Asia should then lead to a larger differential and thus a higher price for Dubai crude versus Brent.

The financial layers are centered at the Dubai Mercantile Exchange (DME). The DME was founded in 2006. The CME Group has a stake in the DME and acts as its clearinghouse. The DME launched the Oman crude oil futures contract in 2007 to serve as a pricing benchmark for the Gulf region and Asian demand centers. It was also launched to overcome the dominant position of a small elite group of price makers, with Shell and Vitol being the biggest ones, in the Platts window. This is analogous to what happens with the Brent “Window-on-Close,” but there the hugely liquid futures market is working in tandem with the Platts assessment process in providing price discovery. The DME’s futures contract aims to link the Dubai paper market on which these futures are traded to the physical Dubai market and involves price signals between the paper market and the Platts physical Dubai price assessment market.<sup>21</sup> In the first three quarters of 2015, about 120 entities have traded on the DME, of which 90 were independent of each other and where the largest commercial player had about a 10% market share. Through the Oman futures market, DME Oman is currently seen as the best proxy for China’s energy imports.

Although volume and open positions have both increased in recent years, liquidity of the EFS market at the DME continues to be an issue. But ongoing improvements in the contract structure has meant that traders can now arbitrage the Oman between DME and the Platts window, which has increased liquidity, transparency and overall volumes in both markets. In addition the larger Upper Zakum barrels sold spot without destination clauses are also helping the further development of the Dubai price discovery process. What has also helped is the greater involvement of Asian traders and refiners.

China has established a major presence in trading crude oil in recent years, where Chinaoil and Unipecc - the trading arms of China National Petroleum Company (CNPC) and Sinopec respectively - have emerged as key spot buyers. This occurred at a time that investment banks have largely moved out of the



physical oil markets. The growth of Chinese involvement is in contrast with Middle East national oil companies (NOCs), who have taken a more active role in refined products by building new world-scale refineries, but so far have remained neutral on crude trading and pricing. This intensified activity has become most visible in the many trades these two Chinese state-owned companies are doing, occasionally leading to uncomfortable numbers such as in August 2015, when it became apparent that out of a total of 78 Dubai cargoes, 72 were held by Chinaoil, allegedly all purchased through the Platts window.<sup>22</sup> This was a repeat of earlier large concentrated purchases in October 2014 and April 2015, in each case the exact reasons still not fully understood, other than it impacted the formulas used by Middle Eastern oil exporters, given their reliance on Platts as the basis for their own official selling prices (OSPs). But with such large positions, it has become clear that these super-large crude oil buyers are now regularly acting as price makers instead of price takers, which is a sign of a growing sophistication in trading skills during a time of growing Chinese import needs.

This increased activity has resulted in several papers on how Dubai and DME should further evolve or even be replaced. One question is if there is a need for a genuinely Asian marker for East of Suez medium-sour crude oil that would be outright priced instead of being a “derived benchmark,” as has been put forth by the Oxford Institute for Energy Studies (OIES). In their view the way forward is to fix both Dubai and DME Oman by delinking Dubai from Brent and instead to link the physical Dubai benchmark with the DME paper market. OIES believes that this should lead to better risk management possibilities and improved trading volumes and liquidity, while creating more financial layers around Dubai as an additional source of price discovery. In this respect, discussion with producers to inject more volumes into the benchmark because of the huge purchases by Chinaoil has resulted in the announcement by Platts last year that it will add in two more grades of crude oil to its Oman/Dubai benchmark - Qatar’s Al-Shaheen and Abu Dhabi’s Murban - from January 2016 in order to further improve the liquidity of the assessment that is used to price the crude.<sup>23</sup> With this increase, the available crude will increase to about 2.4 mln b/d, about three times the size of the volumes available for Brent.

Time will tell how this Middle Eastern marker will further evolve and how Middle Eastern exporters will embrace these initiatives for the price discovery of their crude oil. But for now and given the fact that DME is heavily dominated by commercial customers, DME is building more storage facilities in Oman outside the Persian Gulf to facilitate trading and to become the leading crude hub for the region. In addition, DME has also communicated interest in cooperating with the Shanghai International Energy Exchange (INE), which is planning to introduce a new crude oil futures contract to be traded on their own platform out of Shanghai’s new free trade zone.

### **The Shanghai Benchmark**

China’s leaders have long been concerned about the strategic vulnerability from their country’s steadily rising dependence on imported oil. In 2014, when global oil prices stood at \$100/bbl, China’s average monthly bill from importing 190 million barrels reached \$19 billion. Yet, in 2015, with prices being halved, 210 million barrels per month of crude imports accounted for a bill of \$11.5 billion.<sup>24</sup> If prices start rising again, the annual ticket could quickly reach the \$250 billion mark. At times the share of imported oil is already over 60% of total demand and still growing. Given the high stakes involved,



priority is now given to further expand and increase the sophistication of the trading arms of the state-owned oil companies, and to allow a new generation of Chinese oil importers to enter the international market. By increasing the number of participants in the oil markets beyond the four large national oil companies, China has laid the groundwork for the planned launch of oil futures trading at INE in Shanghai's new trade zone. To Platts, "it is absolutely the vision in China to have their commodity markets priced as much as possible off of Chinese reference contracts whenever they can."<sup>25</sup> Hence, such introduction might have far-reaching consequences for the global oil markets, at least for markets East of Suez, perhaps not as of day one, but gradually over time.

The crude oil under this new futures contract will be medium and sour, based on a contract size of 100 barrels compared to the standard lot of 1,000 barrels for both Brent and WTI futures. Physical delivery will be in a free-trade zone in Northeast China, based on seven different crude oil grades including one domestically produced Chinese crude and six from the Middle East. The contract will be quoted in Yuan per barrel.<sup>26</sup> Having about 240 refineries in mainland China, of which 75 are owned by CNPC, Sinopec, ChemChina and CNOOC, and having an aggregate capacity to process 12.88 mln b/d, it is certainly possible that China will conquer a material slice of the global oil futures market. They may be able to foster some of the individual companies that will reach the premier league of global oil traders soon, where they will not be just buyers, but active traders and marketers on both sides of the equation, both in crude and in products alike.

By quoting the futures contract in local currency, while allowing the international players to keep the currency outside the country, the INE could also further increase the Yuan's role as an international currency, and to break the absolute dominance of oil being traded exclusively in dollars in open markets. Yang Mai Jun, chairman of INE has said that crude oil futures from the outset will be traded from an international platform where international investors can freely participate in this market transaction. On the one hand, INE will facilitate the involvement of Chinese investors. On the other hand, the INE will facilitate international investor transactions by allowing US dollar and other foreign currencies to offset local-currency margin.<sup>27</sup> In addition, the INE might also create more competition among the Chinese participants, driving efficiency and improving transparency in the Chinese market. Some even believe that this new futures contract can expect to see high trading volumes from day one, given the tremendous liquidity in the onshore futures market and the strong support of the Chinese authorities. That said, the jury is still out if international traders will use this new platform, and therefore, if it will become a purely local market.

At this stage, market participants still have concerns relating to (a) the large size of China's state-owned oil majors, (b) recent moves by regulators, and (c) the use of the Yuan. Recent financial turmoil in China - triggered by the unexpected devaluation of the Yuan - has complicated the pending launch of the futures contract. In addition, aggressive trading by Chinaoil and Unipec has made trading much more difficult for everybody from producers to refiners outside China. Moreover, the market is uncomfortable with the idea of a benchmark that is dominated by the world's oil importer if the regulator is suspected of having the goal of lowering prices.<sup>28</sup> But over time, oil majors and the global traders might have no choice but to start participating. Thus while it might take some time to develop, it is not unreasonable to assume that one day China will become a central player in the marketplace. The



big question is whether the Middle Eastern producers are prepared to see the price of oil set in Shanghai, or whether they will fiercely defend the current platforms for price discovery.

## Conclusion

Competition between the main benchmarks is expected to increase further. How and in what way are still big questions. Many participants, both incumbents and new entrants, will ultimately define the journey and set the new rules for price discovery process in the New Oil Order. Beside the insiders, politicians and regulators periodically become important stakeholders when geopolitics and geo-finance are dominant factors in the oil markets. Risk management is growing in importance in highly competitive markets. Market participants are likely to have to adapt their strategies to deal with the current situation, and the way the oil market will further evolve. How many benchmarks the world ultimately needs, how they compete and interact, and which ones will win are all difficult questions to answer. However, to just assume that the dynamics of oil price discovery will stay as is and that oil (price) regimes will never change is quite risky. For that reason, oil continues to be a highly interesting commodity to watch!

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