

Black gold

SYED IMTIAZ HUSSAIN GIVES AN OVERVIEW OF THE OIL INDUSTRY AND ITS DYNAMIC AND VIBRANT SUPPLY CHAIN.

The patterns of oil production and the trends in oil consumption within producing and consuming nations differ significantly, making the entire supply chain dynamic, vibrant and wrought with logistical considerations. According to the International Energy Agency (IEA), global oil demand in 2010 was estimated at 87.7 million barrels per day (mbpd), up by 3.2% compared with the same period in 2009. Of this, the split between Organisation for Economic Co-operation and Development (OECD) and non-OECD countries stood at 53% and 47% respectively. OECD members in North America accounted for 27% of total demand and European OECD members for 16%, whereas non-OECD demand was primarily driven by Asia (22% of total demand, half of which is accounted for by China), the Middle East (9%) and Latin America (7%).

During the same period, world supply stood at 87.4 mbpd, with supplies broken down into two major categories: members of the Organisation of the Petroleum Exporting Countries (OPEC) furnished 39% of total world supply, and non-OPEC members supplied the rest. Significant regional players include the Middle East (30%, with Saudi Arabia alone supplying 12% of the total), the CIS (16%) and North America (16%). The Middle East exports more oil by far than any other region, despite significant improvement in the production capacity of other regions. Maintaining oil inventories is a matter of national security to most importing countries, as trade flows from oil-rich countries to oil-deficit nations have an impact on the geopolitical power play and global manufacturing.

THE OIL FACTOR AND THE REGIONAL POWER PLAY Oil is the world's most traded commodity. This is true by all standards – whether in terms of volume, value or logistical capacity. All these measures are important for different reasons. The amount of oil produced has a direct impact on global prices – too little has repercussions for the world economy, too much and oil exporting countries are at the risk of unsettling their domestic economies. The value of oil traded allows governments and economists to identify critical areas within national economies, such as managing foreign reserves to pay oil import bills, averting balance of payments crises. The global shipping industry needs to assess the existing carrying capacity and the oil market outlook so it can proactively place orders for additional tankers. This is crucial not only in terms of transportation, storage and timely delivery, but also because the associated costs constitute a significant portion of the retail price of oil and thus have a profound impact on world trade.

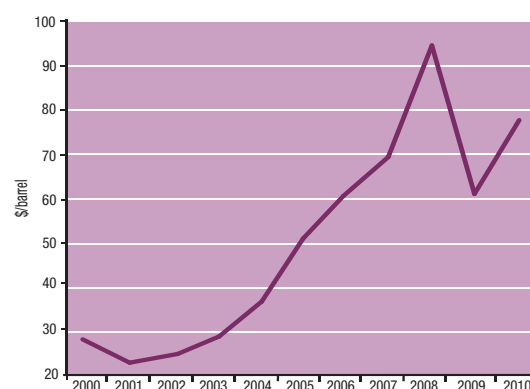
GRAVITY THEORY OF TRADE In theory, oil producers generally ship to the nearest market first as this entails the lowest transportation cost and earns the supplier the highest net revenue. Once the closest market's demand for crude oil or petroleum products has been met, the supplier proceeds to the second nearest market, and so on until the global demand has been met. The reality, however, is far different from the straightforward rule of nearest first. Issues such as refinery closures for routine maintenance, product demand mix, quality stipulations and intra-regional politics govern supplier preferences.

It is possible for the same grade of oil to be priced differently by different countries. For example, a low sulphur diesel carries a higher value in the North American markets, where the maximum amount of sulphur allowed is 0.05% by weight, than in Africa, where the maximum is much higher. In the same vein, African crudes, which



Figure 1: OPEC basket price movement 2001-2010

YEAR	OPEC REFERENCE BASKET (\$/BARREL)
2001	23.12
2002	24.36
2003	28.10
2004	36.05
2005	50.64
2006	61.08
2007	69.08
2008	94.45
2009	61.06
2010	77.45



Source: OPEC annual statistics (2009) and monthly oil reports (2010)

have a low sulphur content, command higher prices in Asia as they allow refineries to comply with stringent sulphur limits without having to incur heavy costs upgrading their refineries.

These variations are significant enough to prevail over transportation cost disadvantages, and, as a result, manifest themselves in international trade, primarily in the form of Africa-Asia trade corridors. However, the pricing of oil is not just a matter of distance and preference. Complications arise when different governments impose tariffs and restrictions, which distort the market price further. For example, the US does not allow imports from Iran and Libya, and oil sales from Iraq were limited under the UN's oil-for-food programme. And Mexico limited its oil sales to the US to half of its exports so as to reduce its economic dependence on the US and to diversify its exports geographically.

OIL PRICING Contrary to conventional wisdom, which suggests a degree of uniformity of international commodity prices, the price of crude oil depends on several factors including its geographical origin,

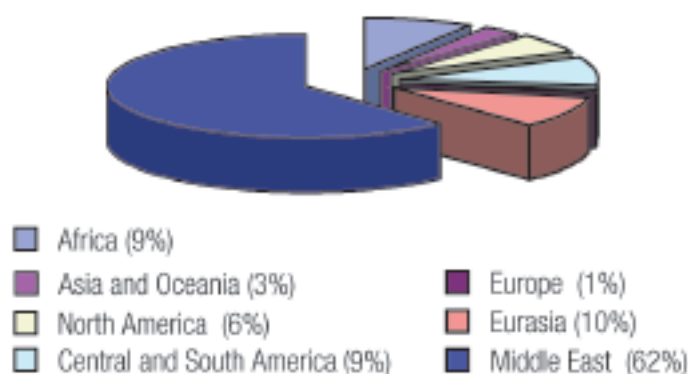
density and sulphur content. Crude oil is classified as light or heavy, determined by the American Petroleum Institute (API) on the basis of gravity measure, which calculates the density. The terms "sweet" and "sour" are used to distinguish different grades of crude oil in relation to the sulphur content: sweet crude has less sulphur and is more expensive, while sour crude has more sulphur.

Once these factors have been taken into consideration, several price references are used to indicate the type of crude oil and its origin. These references include:

- **West Texas Intermediate (WTI) crude:** WTI is used extensively in North American markets and tracks prices of light, sweet crude oil. It is the underlying asset for contracts traded on the New York Mercantile Exchange (NYMEX).
- **Brent crude:** Classified as sweet crude, though of a lesser grade than WTI, Brent is used extensively around the world and is traded on the Intercontinental Exchange (ICE).
- **OPEC reference basket (ORB):** ORB ascertains prices by taking

Figure 2: Global proven oil reserves

	COUNTRY	PROVEN RESERVES – BILLIONS OF BARRELS
1	Saudi Arabia	264
2	Iran	138
3	Iraq	115
4	Kuwait	102
5	UAE	98
6	Venezuela	87
7	Russia	79
8	Libya	41
9	Kazakhstan	40
10	Nigeria	36



Source: Energy Information Administration (EIA) 2009 and SABB's adoption of EIA's data

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weighted average prices of crude oil produced by the 12 OPEC members. Since price is stabilised by either increasing or decreasing production, it is an important industry measure. OPEC crude oil is heavier than both WTI and Brent crude.

As the world economy recovers from the 2008 global financial crisis, led by the developing nations, oil prices have started to recover. Going forward, the price of oil is expected to stabilise in the range of \$80-100 per barrel.

THE SAUDI OIL INDUSTRY Since the discovery of Saudi Arabia's first commercial oil field in Dhahran in 1938, the country has been a key player in the global oil industry. It has about 20% of the world's proven oil reserves, totalling about 264 billion barrels. In terms of

Box: A short history of OPEC



Created in 1960 at the Baghdad Conference, OPEC came into existence against a backdrop of political and economic decolonisation in the region. The founding members included Iran, Iraq, Kuwait, Saudi Arabia and Venezuela, who shared a vision of exercising rights over their natural resources. During the 1970s, OPEC's influence grew in the world market with regards to price, but the decade saw extreme price volatility due to the 1973 oil embargo and the Iranian Revolution of 1979.

In the following decade prices weakened, paving the way for the 1986 crash as supply outstripped demand. This led to a revised strategy among the member countries to adopt ceilings for production as well as a reference basket to determine prices. Increased cooperation between OPEC and non-OPEC countries helped to stabilise prices. During the 1990s, price volatility was less drastic than the preceding two decades but a general weakness prevailed.

From 2000, OPEC began innovating more on pricing, which sustained world growth till 2008 when prices suddenly shot up due to speculation, product demand and supply mismatch, and loss of output in some countries. Over the years, OPEC has helped to create and sustain stability in the oil markets by ensuring the maintenance of adequate production levels to avert economic panic, reinvesting proceeds in domestic economies to alleviate poverty, and encouraging the development of new products by adopting new technology.

production, Saudi Arabia produced about 9.8 mbpd in 2009, just behind Russia (9.9 mbpd) but ahead of the US (9.1 mbpd). The Saudi economy depends heavily on its oil industry, which contributed about 48% of gross domestic product (GDP) in 2009, according to the central bank's annual report of 2009.

Saudi oil production during 2009 amounted to about 3bn barrels, of which 2.3bn barrels were exported. Oil export proceeds accounted for 85% of total Saudi exports in 2009 (90% in 2008). The country's top oil export destinations include Asia and Asia-Pacific (65%), North America (17%) and Europe (10%). Saudi Arabia was one of the founding members of OPEC and continues to be a dominant player within the organisation. It contributed about 28% of OPEC's combined production in 2009, and has maintained a historical share of about 30%.

The major oil export sea ports in Saudi Arabia include:

- Ras Tanura: Situated on the Persian Gulf, this is the world's largest export port. It is designed to export crude oil and its derivatives, with a total of 18 berths with a 2.5 mbpd capacity. About 75% of Saudi oil exports are loaded here.
- Ras al-Ju'aymah: The second largest port in Saudi Arabia, with an installed capacity of 3-3.6 mbpd.
- Yanbu: The terminal is on the western side of Saudi Arabia, and it has an installed capacity of 4.5 mbpd.

PAPER OIL As alternative assets for financial investment have increased in number over the past decade, so too have the volumes of paper commodities in the portfolios of institutional investors. Oil is no exception to this recent phenomenon and is attracting global investment.

A significant evolution has taken place with "paper oil", both in terms of the players as well as the financial instruments. Initially, the paper oil market attracted players such as airlines, which wanted to hedge against the risk of future increases in oil prices, a primary cost component of their operations. Recently however, investors looking for higher returns have been increasingly attracted to this segment, speculating against an increase or a decrease in the price of certain commodities. Development of exchange traded funds and other structured derivative instruments have organised the paper oil market in a manner not seen before.

Commodity indices such as Standard & Poor's GSCI (traded on the Chicago Mercantile Exchange), ICE Brent Crude Futures and ICE WTI Crude Futures (both traded on NYMEX) have become organised and transparent index funds that track the prices of paper oil. Individual investors take a view of future prices, and invest accordingly in funds that track a popular commodity index, thus gaining exposure to the price movements of the underlying asset. Fund managers act on behalf of their clients and take long or short positions in the futures market. This, however, has earned criticism from OPEC and others who think that the increased speculative activity has increased oil price volatility. It is expected that a middle ground will be found in the near future which, with the growing involvement of investment banks and funds, will result in an organised and well-diversified paper oil market.

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