EU Commodity Markets and Trading: An Introduction to Oil Markets and Trading

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BP Oil International
An Introduction to Oil Markets and Trading

- Crude oil and its refined products
- The oil supply chain and key market participants
- Links between physical oil trading and paper instruments
- Global nature of oil markets and trading
Crude oil is refined into many products – their yields are dependent on the crude oil quality.
The oil supply chain involves trading at every step...

Production

Refining

Marketing sales

Integrated Oil Company

Producer

Refining & Marketing Company

crude purchases

crude sales

components

product purchases

3rd party product sales
... and companies choose to get involved in part or all of the whole the supply chain.
1. **FUTURES**
   standardised contracts for forward delivery, traded on exchanges
   Common examples include ICE Brent Crude or ICE Gasoil, Nymex WTI Crude or Nymex Unleaded Gasoline

2. **SWAPS**
   standardised contracts for forward delivery, usually traded ‘over-the-counter’ (OTC)
   Common examples include Eurograde gasoline and High Sulfur Fuel Oil swaps

3. **OPTIONS**
   buyer of an option acquires the right – but not the obligation – to buy or sell an underlying futures contract under certain conditions, in exchange for a payment (premium) for that right
Major Global Trade Flows for Fuel Oil

Source: Cera 2001 - ECM 2002
Example of a crude arbitrage deal from Europe to US

North Sea producer has 1 million barrels crude
Local Price: Dec BF + 10¢

Refiner looking for 1 million barrels crude
Willing to pay: Dec WTI -20¢ per barrel
Example of a crude arbitrage deal from Europe to US, executed on 1st October 2006

<table>
<thead>
<tr>
<th>SELLER OWNS</th>
<th>BUYER LOOKING FOR</th>
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<tbody>
<tr>
<td>1 million barrels (bbls) North Sea Crude</td>
<td>1 million barrels N. Sea crude, delivered into US GC</td>
</tr>
<tr>
<td>Loading: 22 October in N. Sea</td>
<td>Delivery: 6-8 November in US GC</td>
</tr>
<tr>
<td>Price: Dec BF + 10¢/bbl</td>
<td>Will pay: Dec WTI - 20¢/bbl</td>
</tr>
<tr>
<td>Pricing period: Oct 23-27</td>
<td>Pricing period: Nov 6-10</td>
</tr>
<tr>
<td>Transport N. Sea → US GC: $1.50/bbl</td>
<td>Dec WTI on 1st October = $76.50/bbl</td>
</tr>
<tr>
<td>(Flat Rate = $11.54/mT, WS = 100)</td>
<td></td>
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<tr>
<td>Dec BF on 1st October = $74.50/bbl</td>
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**OPPORTUNITY VALUE**

Seller’s Value of North Sea Crude = $74.60/bbl + Transport = $1.50/bbl. 
Lands in USGC at $76.10/bbl

Buyer willing to pay for North Sea Crude = $76.30/bbl.

Value available on 1st October = $76.30 - $74.60 - $1.50 = $0.20/bbl

*But this value is NOT guaranteed without hedging using paper instruments*
Europe to US GC crude arbitrage – locking in the value is done through use of paper instruments

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<th>SELLER’S HEDGE</th>
<th>BUYER’S HEDGE</th>
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<tr>
<td><strong>On 1st October:</strong></td>
<td><strong>BUYER’S HEDGE</strong></td>
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<tr>
<td>Sell 1000 lots Dec WTI at $76.50</td>
<td><em>Assumes buyer is a refiner</em></td>
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<tr>
<td>Buy 1000 lots Dec BF at $74.50</td>
<td></td>
</tr>
<tr>
<td>Buy Oct TD5 (freight swap) at WS 100</td>
<td>As cargo ‘prices in’ 6-10 Nov, rateably</td>
</tr>
<tr>
<td>i.e. locking in freight @ $1.50/bbl</td>
<td>sell Dec WTI (200 lots per day)</td>
</tr>
<tr>
<td>As cargo ‘prices in’ 23-27 Oct, rateably</td>
<td>As cargo is consumed in November</td>
</tr>
<tr>
<td>sell out Dec BF (200 lots per day)</td>
<td>rateably buy back Dec WTI</td>
</tr>
<tr>
<td>As cargo ‘prices out’ 6-10 Nov, rateably</td>
<td><strong>Remaining risk:</strong></td>
</tr>
<tr>
<td>buy back Dec WTI (200 lots per day)</td>
<td>- Crude may not be consumed in</td>
</tr>
<tr>
<td></td>
<td>November: would need to adjust</td>
</tr>
<tr>
<td>Settle freight swap financially on 31</td>
<td>paper hedge</td>
</tr>
<tr>
<td>October</td>
<td>- Physical operation risk</td>
</tr>
<tr>
<td><strong>Remaining risk:</strong></td>
<td>- Changes in refining margins</td>
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<tr>
<td>- Paper deal execution risk</td>
<td></td>
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<tr>
<td>- Physical operation risk</td>
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Major Global Trade Balances for Gasoil

North West Europe
FSU
Middle East
Korea
China
Japan
USWC
Canada
USA
South America
Africa

Source: BP Stat Review - ECM 2002
SUMMARY

• Participants in the physical oil market choose to be active in parts or whole of the oil supply chain

• The physical and paper oil markets are inextricably linked, in the main due to price risk management

• The oil paper markets have a diverse set of participants

• Physical oil markets are global and linked through arbitrage activity