Inter-linkages and Regulation of Oil Derivatives

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28 January 2011

Main Themes

- Focus on inter-related topics
  - Identify the linkages between the physical and financial layers in the current international oil pricing system;
  - Role of linkages in oil price formation and discovery process;
  - Overview of current regulatory reforms of commodities' and oil/petroleum products derivatives;
  - Implications of regulatory changes on the price discovery process, trading activity, long-term strategies of commercial and non-commercial players in the oil market

Some Key Questions

- **Sub-themes or topics**
  - Given that feedbacks from physical market fundamentals are quite slow (both from the demand and supply side), what do we really mean by the physical or the spot price of oil? How is the spot price of oil being determined in the current international oil pricing system?
  - Do financial layers such as the futures exchanges and over the counter markets dominate the oil price formation process or do physical benchmarks underlie these markets and derivatives contracts?
  - Has crude oil become a financial asset or acquired some of the characteristics of financial assets? And if yes, how? Should we consider expectations about future fundamentals as speculation?
  - What influence do financial players have on oil price movements both in the short run and the long run? Is the distinction between commercial and non-commercial players really useful?
  - Are existing benchmarks used to price oil adequate and reflect accurately global market conditions? What are some of the implications of the current dislocations of benchmarks?
  - What is the role of price reporting agencies in current pricing system? Do they simply mirror the way the market functions or do they affect market structure?
  - Do the details of the pricing system such as the use of different methodologies by various PRAs really matter or do these details constitute a divergence from the real issues?
  - What does the objective of enhancing transparency in the oil market really means? Do current regulatory efforts have the effect of enhancing oil market transparency?
  - What are the impacts of proposed regulations on market structure and market players' behaviour? What are some of the market participants' major concerns about these regulations?
  - Should some markets such as CFDs and forward market be subject to regulation? Should PRAs be subject to regulatory oversight or is the incentive to self regulate enough?

Financialisation of Crude Oil?

- View crude oil acquired characteristics of financial assets such as stocks or bonds gained wide popularity
- Nature of financialisation and its implications not yet clear
  - Studies focus on outcomes: correlations between returns and levels of oil prices, financial indexes and exchange rates
- Full understanding of degree of interaction between oil and finance requires in addition an analysis of interactions, causations and processes
- Unlike a pure financial asset crude oil market has a “physical” dimension
  - Crude oil consumed, stored & widely traded with millions of barrels being bought and sold every day at prices agreed by transacting parties
- Has crude oil become a financial asset or acquired some of the characteristics of financial assets? And if yes, how? What are the implications on the pricing of oil? Like financial assets, subject to bubbles?

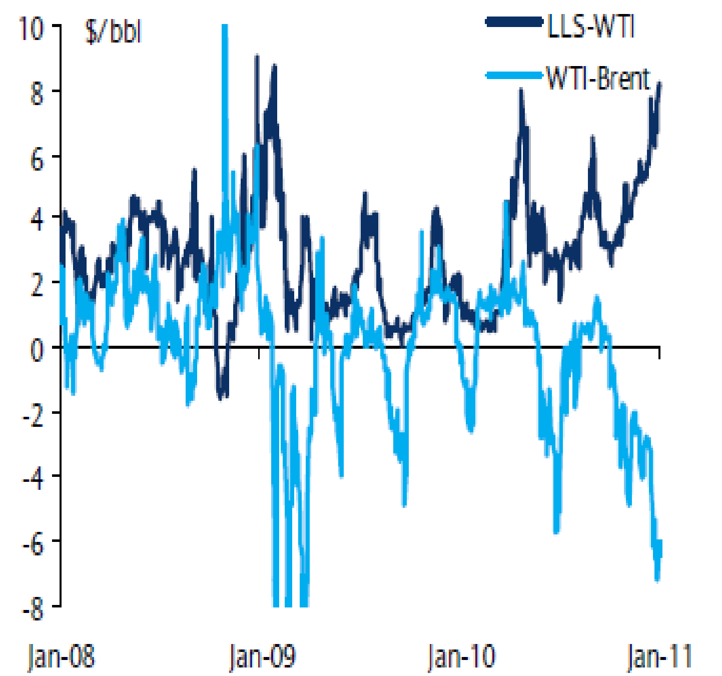
The International Oil Pricing System

- Collapse of OPEC administered pricing system in 1986 ushered in a new era in oil pricing
- Power to set oil prices shifted from multinational oil companies in 1950s and 1960s and OPEC from 1973 to 1986 to the so called 'market'
- Led to development of a complex structure of interlinked layers which consist of spot and also physical forwards, futures, options and other derivative markets referred to as paper markets
- Most complex structures emerged in the North Sea around Brent, in US around the West Texas Intermediate (WTI), in the Gulf around Dubai-Oman
- Price of benchmark crudes at heart of pricing system
  - Used by oil companies and traders to price cargoes under long-term contracts
  - Used in spot market transactions
  - By futures exchanges for settlement of their financial contracts
  - By banks and companies for settlement of derivative instruments such as swap contracts
  - By governments for taxation purposes

How Reflective are Benchmarks of global oil market conditions?

- Dislocations of benchmarks: What are some implications of such dislocations on oil market dynamics? Which benchmark is more representative of global market conditions? None?
- Dubai: Appropriate benchmark for crude oil destined to Asia despite decline in physical production? Does the rise in Asian consumer as the marginal buyer require the search for alternative benchmarks that reflect better market conditions in Asia?

Figure 4: WTI differentials to other benchmarks has widened



Source: EcoWin, Barclays Capital

Physical Liquidity of Benchmarks

- Markets with relatively low physical liquidity set the price for markets with much higher volume of production
- Nature of these benchmarks tends to evolve over time due to decline in physical liquidity
- Low physical liquidity and squeezes
- Widen the benchmark for assessment purposes
  - Assessment of traditional Brent benchmark now includes North Sea streams Forties, Oseberg and Ekofisk (BFOE)
  - Dubai price includes Oman and Upper Zakum
- Short-term solutions successful in alleviating problem of squeezes should not distract observers from raising key questions
- What are necessary conditions for the emergence of successful benchmarks in the most liquid market in terms of production?
- Would a shift to price assessment in such markets improve the price discovery process?

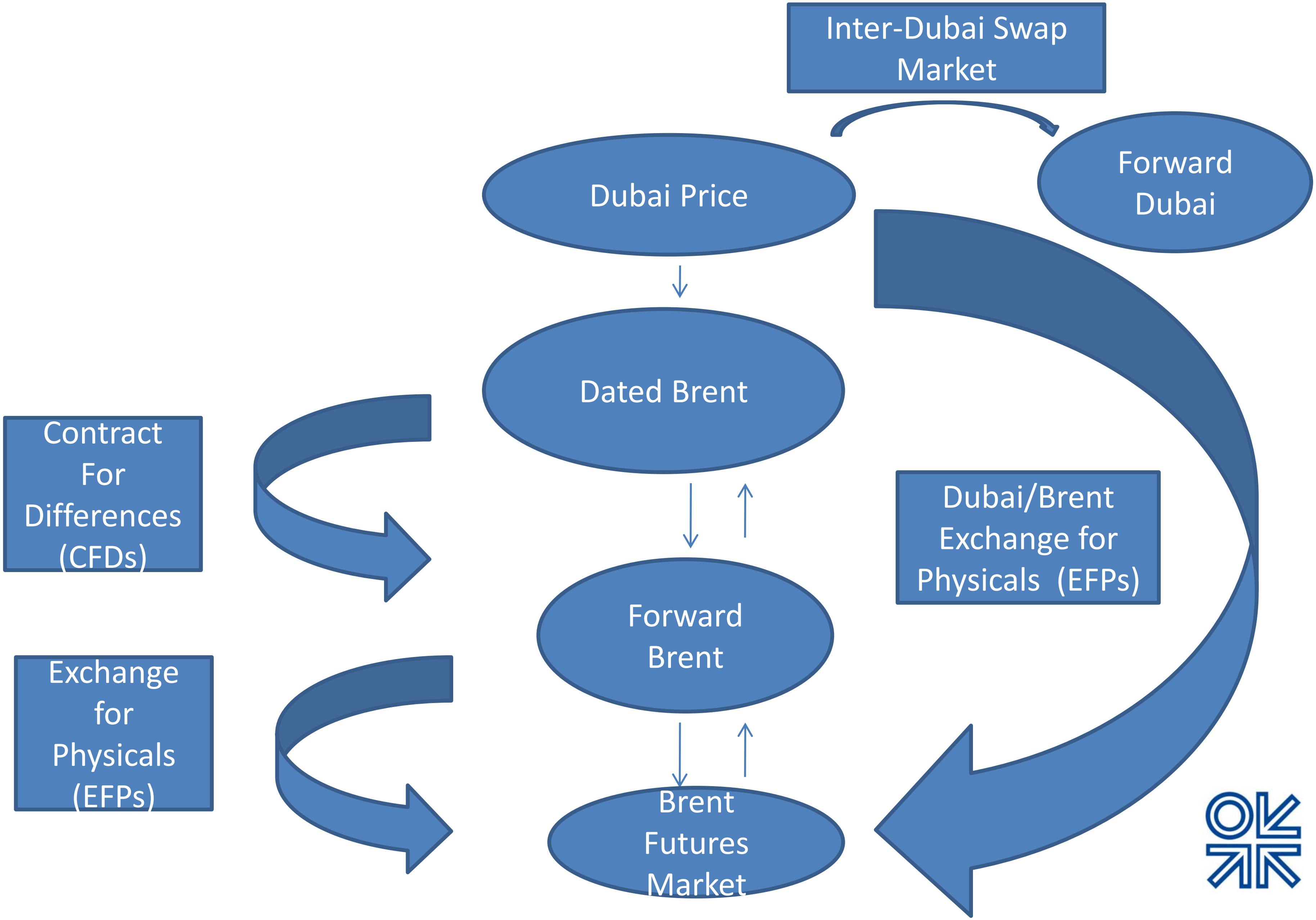
Assessed Prices of Physical Benchmarks

- Prices of physical benchmarks ‘identified’ or ‘assessed’ by PRAs
- What is the role of PRAs? Do they simply act a ‘a mirror to the trade’ and provide ‘transparency’?
- In attempt to identify oil price PRAs enter into decision-making territory that can influence market structure
  - Example: Platts decides on when to stamp oil price, width of Platt’s window used to make price assessment, size of parcel to be traded, process of delivery, time of delivery
- Even when price assessments based on observed deals and mathematical formula, still an important element of decision-making involved
- New markets and contracts emerge to hedge risks arising from some of decisions that PRAs make
- PRAs assessment process is not neutral
  - Accuracy of price assessments
  - Methodology used in identifying oil price
  - Internal measures that PRAs implement to protect their integrity and ensure an efficient price assessment process

Financial Layers and Physical Benchmarks

- Many financial layers (paper markets) have emerged around physical benchmarks
- Financial layers highly interlinked with benchmarks through process of arbitrage and development of products that link layers together
- Idea that one can isolate physical from financial layers in current oil pricing system is simplistic
- Information derived from financial layers plays an important role in identifying the price level of the benchmark
- Brent market: Price of Dated Brent assessed using information from many layers including CFDs, forward markets, EFPs and futures markets
- WTI complex: prices of the various physical benchmarks strongly interlinked with the futures markets
- Price of Dubai often derived using information from the very active OTC Dubai/Brent swaps market and the inter-Dubai swap market

The Inter-linkages Between Financial and Physical Layers



Nature of Players

- Futures markets attracted wide range of financial players (pension funds, hedge funds, index investors, technical traders, & retail investors)

- Concerns that these financial players & their trading strategies could move the oil price away from the 'true' underlying fundamentals

- Participants in many of the OTC markets such as Brent forward market, Dated Brent and CFDs mainly 'physical'
  - Refineries, oil companies, downstream consumers, physical traders, and market makers
  - Financial players limited presence in some of these markets

- Is the distinction between commercial and non-commercial players relevant in the current oil pricing system?

Trade in Levels versus Differentials

- Trades in levels of oil price rarely take place in the layers surrounding physical benchmarks

- So-called physical markets trade price differentials based on timing, location and quality

- Where is level of the oil price being set? In the futures market?

- Most evident in US but also Brent
  - Crude futures contract traded on NYMEX provides a visible real-time reference price for the market
  - In the spot market negotiations for physical oils will typically use NYMEX as a reference point, with bids/offers and deals expressed as a differential to futures price

- Differentials adjust to changing market conditions and used by PRAs to identify price level of a physical benchmark

- How can a system centered on trading differential set the price level for a benchmark?

Transparency in Oil Markets: Different Dimensions

- One dimension relates to transparency of physical fundamentals of oil market (demand, supply, inventories, investment plans)

- Transparency in financial layers surrounding physical benchmarks as important
  - Structural features of oil market impose certain constraints on agencies efforts to identify the oil price.
  - Degree of transparency varies considerably within different layers in Brent, WTI and Dubai-Oman complexes as well as across benchmarks

- An important dimension of transparency linked to PRA policies
  - PRAs under no obligation to release or share information with regulatory authorities
  - Ability of RPAs to collect reliable information in imperfect and illiquid markets
  - Internal features: skills of reporters, choice of methodology, and internal regulations and compliance procedures

Issues for Discussion

- What do ‘market’ or ‘spot prices’ of global benchmarks reflect? What factors influence benchmark price movements in the short-run? Is there a case to diversify away from the currently used benchmarks?

- Do physical benchmarks underlie the price of derivative instruments or are physical markets just satellites to the more liquid financial layers?

- Is the distinction between commercial and non-commercial players relevant in the current oil pricing system?

- How can a system centered on trading differential set the price level for a benchmark?

- What measures could be taken to improve the price discovery function? Should there be specific rules against false and/or selective reporting? Should the oil industry work on a voluntary scheme to improve deal transparency?

- Would proposed regulations improve the functioning of the system? What kind of regulation is needed? Regulation of derivatives instruments, the underlying physical markets or both?

- Should there be regulatory oversight over PRAs or is internal regulation and compliance procedure sufficient? How would regulation affect the price discovery process?