

Appendix II — Non-PRA indexes

The IOSCO Consultation Report makes no reference to oil price indexes produced by non-PRAs. But some important oil price indexes are produced by state-owned entities or by oil market participants. Others are produced by exchanges that are or have been owned in whole or in part by market participants. Brokers also produce oil price indexes used in derivatives.

1. Company-produced price indexes

Many official crude prices — such as those of some major Middle East and Asia-Pacific producers — are set by state-owned oil companies, and these are used as price references by market participants despite the apparent conflict of interest inherent in this process. Abu Dhabi's Adnoc, Qatar's QP and Indonesia's Pertamina issue official monthly crude prices that are used by market participants as price references in related spot market trading.

Other oil prices still set "officially" by sellers include benchmarks such as the state-owned Saudi Aramco "contract price" or "CP" for liquefied petroleum gas (LPG). The Saudi CP prices for propane and butane are set monthly by state-owned oil company Saudi Aramco. Some market participants prefer not to index Asian LPG contracts against the Saudi CP but against the Argus Far East Index (AFEI).

Argus in the past has helped create indexes that replace official sellers' prices. For example, in the North Sea LPG market, the BP agreed price (BPAP) has been replaced by the Argus North Sea Index (ANSI) prices.

2. Exchange-owned indexes and exchange ownership

It should be noted that, unlike PRAs, several exchanges have been owned by market participants. Nymex — the exchange at which benchmark WTI, heating oil and gasoline futures trading started — was owned by its members, including banks, trading firms and oil companies¹, until its initial public offering (IPO) in late 2006 and takeover by CME Group in August 2008. London's International Petroleum Exchange (IPE) was also originally owned by its members, including banks and energy trading companies, although unlike in the case of Nymex, IPE had no clearing members².

¹ New York Mercantile Exchange Clearing Members 2006: Active Energy Traders, Inc. (N); ADM Investor Services, Inc.; A.G. Edwards & Sons, Inc.; AIG Clearing Corp; Banc of America Securities LLC; Barclays Capital, Inc.; Bear Stearns Securities Corp. ;BNP Paribas Commodity Futures, Inc.; BP Corporation North America, Inc. (N); BUCC Trading Corp. (N) (I); Calyon Financial, Inc.; Citigroup Global Markets Inc.; Credit Suisse Securities (USA) LLC; Deutsche Bank Securities Inc.; FC Stone, LLC; FIMAT USA, LLC; Fortis Clearing Americas LLC; Goldman, Sachs & Co.; HSBC Securities (USA) Inc.; J.P. Morgan Futures, Inc.; Jump Trading, LLC (C); Lehman Brothers, Inc.; Man Financial Inc.; MBF Clearing Corp.; Merrill Lynch, Pierce, Fenner & Smith, Inc.; Mitsui Bussan Commodities (USA) Inc. (C); Mizuho Securities USA Inc. (N); Morgan Stanley & Co., Inc.; NIC Holding Corp. (N); Phibro LLC; Prudential Bache Commodities, LLC; Rand Financial Services, Inc; RBC Capital Markets Corporation; R.J. O'Brien & Associates, Inc.; Rosenthal Collins Group LLC; SMW Trading Company, Inc.; Sterling Commodities Corp.; Term Commodities, Inc. (N); The Bank Of Nova Scotia (C); Triland USA, Inc; UBS Securites, LLC; Warren Corporation, George E. (N). (C) COMEX Division only, (I) Inactive, (N) NYMEX Division only.

² Members of the International Petroleum Exchange (dated 2003): FLOOR MEMBERS: ADM Investor Services International Ltd; ABN AMRO Futures Ltd; AIC Ltd; Amerex Futures Ltd; Arcadia Petroleum Ltd; Banc of America Futures Inc.; Bank of Nova Scotia; Barclays Capital; Bear Stearns International Ltd; BNP Paribas Commodity Futures Ltd; BP Oil International Ltd; Cargill Investor Services Ltd; Carr Futures Inc; Citigroup Global Markets Ltd; Credit Lyonnais Rouse Ltd; Deutsche Bank AG; Enron Europe Finance & Trading; Fimat International Banque SA (UK Branch); Fortis Clearing London Ltd; Glencore Commodities Ltd; GNI Ltd; Goldman Sachs International; J.P. Morgan Securities Ltd; Lehman Brothers International (Europe); Man Financial Ltd; Merrill Lynch International; Morgan Stanley

At the time of the takeover of the IPE by IntercontinentalExchange (Ice) in 2001, there was concern because Ice's founders and owners when it launched as an electronic trading platform in 2000 were all major market participants and market makers — oil companies BP, Shell and Total, and banks Morgan Stanley, Goldman Sachs, Deutsche Bank and Societe Generale. Merchant energy firms such as Aquila and Reliant Energy subsequently bought stakes in Ice.

The takeover of IPE by Ice, which was owned by a few of the firms that traded on the exchange, was seen as a conflict of interest at the time, although the UK Financial Services Authority no doubt took into account issues of corporate governance when it approved Ice's takeover of the IPE. Ice diluted its founders' shareholdings through an initial public offering in late 2005.

The Dubai Mercantile Exchange (DME) is still owned partly by its participants — including the states of Oman and Dubai as well as several banks and oil companies that take a leading part in trading on the exchange — despite a recent increase in CME Group's stake to 50 percent. DME says: "Oman Investment Fund will increase its holding to 29 percent; a subsidiary of Dubai Holding will retain 9 percent; and 12 percent will be held on a non-voting basis by strategic investors, including Vitol, Shell, JP Morgan, Morgan Stanley, Goldman Sachs and Concord Energy."³

3. Broker indexes

Canadian broker Net Energy's WCC Canadian Heavy Crude Oil index is the underlying index for derivative contracts available for clearing through CME ClearPort.⁴

& Co International Ltd; Phibro Futures & Metals Ltd; Prudential Bache International Ltd; PVM Oil Futures Ltd; Refco Overseas Ltd; Saratoga; Shell International Trading & Shipping Co Ltd; SEB Futures (a division of Skandinaviska Enskilda Banken); Spectron Futures Ltd; Sucden (U.K.) Ltd; Trafalgar Commodities Ltd; UBS Ltd.

TRADE ASSOCIATE MEMBERS: Accord Energy Ltd; AIC Ltd; Aquila Energy Ltd; BG International BP Gas Marketing; Cinergy Global Trading Ltd.; Conoco Ltd; Duke Energy Int'l Finance (UK) Ltd; Dynegy UK Ltd; Entergy Koch Trading Ltd; Fortum Gas Limited; Hess Energy Power & Gas Co (UK) Ltd; Innogy Plc; Louis Dreyfus Energy Ltd; Mitsubishi Corporation (UK) Ltd; Mobil Gas Marketing (UK) Ltd; NV Nederlandse Gasunie; Powergen PLC; Scottish Power Energy Trading Ltd; Sempra Energy Europe Ltd; SmartestEnergy Ltd; Statoil Gas Trading Ltd; TotalFinaElf Gas & Power Ltd; TXU Europe Energy Trading Ltd; Williams Energy Marketing & Trading Europe Ltd.

³ <http://www.dubaimerc.com/news/21feb12.aspx>

⁴ http://www.cmegroup.com/trading/energy/crude-oil/canadian-heavy-crude-oil-net-energy-index-futures_contract_specifications.html

Appendix III — Price index switching

The competitive nature of the PRA sector and the ability of market participants to move between different price references can be illustrated by examples.

In Asia-Pacific oil markets, many sellers have moved away from APPI Tapis to Dated Brent as a benchmark. Conversely, Saudi Aramco and its refinery customers moved away from Platts Dated Brent for crude sales to Europe from April 2000, using an IPE (now Ice) Brent futures weighted average known as Bwave.

The LPG market moved progressively away from use of weekly Platts LPGaswire indexation once Argus began to produce daily LPG price assessments from 1993.

In US clean oil products markets east of the Rockies, indexation has switched from Platts to Argus over the past five years throughout the downstream value chain.

The ASCI benchmark

The price index used by US refiners and Middle East exporters (Saudi Arabia, Kuwait and Iraq) for US sour crude imports moved from Platts WTI to the Argus Sour Crude Index (ASCI) benchmark — a volume-weighted average price of deals in three US deepwater sour crudes — for cargoes delivered from January 2010 onwards.

European oil trading company Vitol “estimates that the new ASCI index was the benchmark for about 4 per cent of global oil trade last year, up from zero in 2008”, according to the Financial Times. Vitol “estimates that WTI was used as a benchmark for physical transactions of about 20 per cent of global oil in 2008. By late 2011, that share has halved to just 10 per cent,” the Financial Times says¹.

European gasoline

One example of a move in price reference — NW European gasoline — illustrates clearly that “en masse” switches may take place without fear of collusion, and that cost and practicality are more a fear of market participants than a reality.

Market participants created a European pressure group called the Oil Brokers Association (OBA) to discuss alternative pricing arrangements to the Platts market on close (MOC) or window for gasoline in northwest Europe. MOC had been introduced by Platts on 1 April 2003.

OBA was comprised of around 50 gasoline market representatives who met in London in May 2003 in order to achieve a fair and widely acceptable pricing methodology. OBA issued framework proposals on an “all-day” price assessment methodology that month and issued it to all PRAs, inviting comments to be submitted by 27 May. The proposals were endorsed by 27 companies that traded gasoline, including BP, ChevronTexaco, Statoil and Total.

By early June 2003, Total had asked all its counterparties in the European gasoline swaps market to switch pricing from Platts to Argus assessments from 1 July. The Argus response to the OBA framework was “generally favourable”, but Platts rejected the framework proposal, insisting its

¹ WTI loses ground in physical oil market, Javier Blas, 21 March 2012, www.ft.com/cms/s/0/601bff22-7339-11e1-9014-00144feab49a.html#axzz1pwhv6Zuv

MOC method was “superior”. The OBA made a comparison of its framework proposal and Platts and Argus methodologies to help its members decide on their next steps.

By 1 July, nearly all gasoline swaps contracts were based on Argus assessments rather than on Platts prices produced under the MOC method. Trading companies and banks — guided by the OBA — followed the lead set by Total, BP, and Goldman Sachs trading arm J Aron in moving from Platts to Argus. This move demonstrates that obstacles may be overcome relatively quickly and with little loss of liquidity in the market.

By July 2003, OBA ceased to exist, with just nine of its members becoming the London Energy Brokers Association (Leba), affiliated to the Wholesale Markets Brokers Association.

Benelux downstream oil sector

The Benelux (Belgium, the Netherlands and Luxembourg) downstream oil sector has in part switched from the use of Platts to Argus prices for refined oil products benchmarking. Both Argus and Platts are now used in downstream Benelux oil pricing. Large parts of the downstream in the Netherlands moved after the switch in NW European gasoline, because of its proximity to the Rotterdam area refinery hub which forms the locational basis of the Argus NW European gasoline methodology for ARA (Amsterdam-Rotterdam-Antwerp) barges.

The Belgian government ran an open tender in the autumn of 2009 for a PRA to supply it with daily oil product and liquefied petroleum gas (LPG) prices, to enable the government to set maximum retail prices. Argus won the tender and was one of three services that competed for it. On 1 December 2009 the Belgian ministry of economic affairs announced that it would be switching to Argus prices in its maximum retail price formulas. As a result of this switch from Platts to Argus, the Belgian downstream sector has in part moved to using Argus prices.

Appendix IV — Independent reports on speculation, volatility and oil prices

The Oxford Institute of Energy Studies; The role of speculation in oil futures markets: What have we learned so far?; March 2012

www.oxfordenergy.org/wpcms/wp-content/uploads/2012/03/WPM-45.pdf

"We find that the existing evidence is not supportive of an important role of speculation in driving the spot price of oil after 2003. Instead, there is strong evidence that the spot and futures prices were affected by common economic fundamentals." (page 3)

International Monetary Fund; World economic outlook; September 2011

www.imf.org/external/pubs/ft/weo/2011/02/pdf/text.pdf

"although financialization has influenced commodity price behavior, recent research does not provide strong evidence to suggest that it either destabilizes or distorts spot markets. In this light, policy efforts should focus on making markets work better at a time of structural change in global commodity markets." (page 56)

The Oxford Institute of Energy Studies; The Oil Trading Markets, 2003 – 2010: Analysis of market behaviour and possible policy responses; April 2011

www.oxfordenergy.org/wpcms/wp-content/uploads/2011/04/WPM_421.pdf

"The available evidence illustrates that oil price movements between 2003 and 2010 are largely explicable in fundamental terms, even if it is impossible analytically to determine whether those movements were precisely appropriate in fundamental terms, or to some degree also influenced by financial investment flows." (page 1)

Staff of International Energy Agency (IEA) and others; Do Speculators Drive Crude Oil Futures Prices?; The Energy Journal Vol. 32 No. 2 2011

www.iaee.org/en/publications/journal.aspx

"The increased participation of traditional speculators as well as commodity index traders in the crude oil futures market raises the question of whether these traders predict market prices. The recent increase and eventually fast decline in crude oil prices has been linked to speculators. Based on our linear Granger causality tests, we fail to find that these traders positions lead prices. Conversely, our results suggest that price changes leads the net positions and net position changes of speculators and commodity swap dealers, with little or no feedback in the reverse direction. This uni-directional causality suggests that traditional speculators as well as commodity swap dealers are generally trend followers. Indeed, Granger causality results should not be interpreted as "cause" and "effect" relations but should be interpreted as lead and lag relations between prices and positions. In this light, our results should not necessarily be interpreted as price changes causing position changes. However, the lack of even Granger causality (let alone true causality) between positions and prices undermines the prospect that speculative trading interest has driven recent dramatic price swings in the crude oil futures market. Rather, we believe it more likely that both prices and positions react to the same common factors, such as global demand and supply." (page 201)

Organisation for Economic Co-operation and Development; Speculation and financial fund activity: Draft report, May 2010

[www.oilis.oecd.org/olis/2010doc.nsf/ENGDATCORPLOOK/NT000029BA/\\$FILE/JT03282467.pdf](http://www.oilis.oecd.org/olis/2010doc.nsf/ENGDATCORPLOOK/NT000029BA/$FILE/JT03282467.pdf)

"Bivariate Granger causality regressions provide no convincing evidence that positions held by index traders or swap dealers impact market returns. Except for a few instances in individual markets, Granger-style causality tests fail to reject the null hypothesis that that trader positions do not lead market returns. These results tilt the weight of the evidence even further in favor of the argument that index funds did not cause a bubble in commodity futures prices..... Perhaps the most surprising result is the consistent tendency for increasing index fund positions to be associated with declining market volatility. This result is contrary to popular notions about the market impact of index funds, but is not so surprising in light of the traditional problem in commodity futures markets of the inadequacy of speculation." (page 4)

Commodity Futures Trading Commission; Interagency Task Force on Commodity Markets — Draft special report on commodity markets; August 2009

“Taken as a whole, these tests are consistent with the view that current oil prices are being driven by fundamental supply and demand factors.” (page 29)

International Organization of Securities Commissions; Technical Committee — Report of the Task Force on commodity futures markets; March 2009

www.iosco.org/library/pubdocs/pdf/IOSCOPD285.pdf

“The reports reviewed by the Task Force do not support the proposition that the activity of speculators has systematically driven commodity market cash or futures prices up or down on a sustained basis. These reports suggest that economic fundamentals, rather than speculative activity, are a plausible explanation for recent price changes.” (page 7)

International Monetary Fund; World economic outlook; October 2008

www.imf.org/external/pubs/ft/weo/2008/02/pdf/text.pdf

“the increasing role of commodities as alternative financial assets has had little, if any, discernible systematic impact on prices, although shifts in market sentiment can affect short-term price dynamics, and financial variables such as interest rates can affect prices through their effects on physical demand and supply”

Government Accountability Office; Issues involving the use of the futures markets to invest in commodity indexes; December 2008

www.gao.gov/new.items/d09285r.pdf

“Through our literature search, we identified eight empirical studies and three qualitative studies.... Importantly, the eight empirical studies we reviewed generally found limited statistical evidence of a causal relationship between speculation in the futures markets and changes in commodity prices—regardless of whether the studies focused on index traders, specifically, or speculators, generally.” (page 5)

Staff of Commodity Futures Trading Commission, Public Company Accounting Oversight Board; Price volatility, liquidity provision and the role of hedge funds in energy futures markets; The Journal of Alternative Investments Spring 2007

www.cftc.gov/ucm/groups/public/@newsroom/documents/file/itfinterimreportoncrudeoil0708.pdf

“The Task Force’s preliminary assessment is that current oil prices and the increase in oil prices between January 2003 and June 2008 are largely due to fundamental supply and demand factors. During this same period, activity on the crude oil futures market – as measured by the number of contracts outstanding, trading activity, and the number of traders – has increased significantly. While these increases broadly coincided with the run-up in crude oil prices, the Task Force’s preliminary analysis to date does not support the proposition that speculative activity has systematically driven changes in oil prices.” (page 3)

Staff of Commodity Futures Trading Commission, Securities and Exchange Commission, Société Générale; Market growth, trader participation and pricing in energy futures markets; February 2007

www.cftc.gov/ucm/groups/public/@newsroom/documents/file/marketreportenergyfutures.pdf

“we utilize a unique dataset of individual trader positions in exchange-traded crude oil options and futures to show that increased market activity by commodity swap dealers, and by hedge funds and other financial traders, has helped link crude oil futures prices at different maturities” (page 1)

International Monetary Fund; World economic outlook; September 2006

www.imf.org/external/pubs/ft/weo/2006/02/pdf/weo0906.pdf

“All in all—and subject to the data limitations stressed at the outset—the results for the five commodities in the sample provide little support for the hypothesis that speculative activity (as measured by net long noncommercial positions) affects either price levels over the long run or price swings in the short run. In contrast, there is evidence (both across commodities and over

time) that speculative positions follow price movements. These findings are consistent with the hypothesis that speculators play a role in providing liquidity to the markets and may benefit from price movements, but do not have a systematic causal influence on prices.” (page 156)

Staff of Commodity Futures Trading Commission, Public Company Accounting Oversight Board; Price volatility, liquidity provision and the role of managed money traders in energy futures markets; November 2005

“Employing a unique dataset consisting of trader positions in U.S. energy futures markets, we analyze trading relationships between managed money traders (MMTs) and other groups of traders (e.g., floor brokers, swap dealers, producers, manufacturers). We find that on average MMTs do not change their positions as frequently as other groups. Using causal techniques we determine that, on average, changes in MMTs positions are triggered by position changes of other trader groups. We find that MMTs are an important source of liquidity to the other participants and we reject the hypothesis that MMT trading causes price volatility in futures markets.” (page 2)

New York Mercantile Exchange; A review of recent hedge fund participation in Nymex natural gas and crude oil futures markets; March 2005

“Hedge Funds hold positions significantly longer than the rest of the market, which supports the conclusion that Hedge Funds are a non-disruptive source of liquidity to the market. With regard to price volatility in natural gas futures, when Hedge Fund activity alone is evaluated, the data strongly indicate that changes in Hedge Fund participation result in decreases in price volatility. Even when Hedge Fund activity in natural gas futures is considered in connection with changes in inventory, the data indicate that changes in Hedge Fund participation appear to decrease price volatility. These statistical results are consistent with a positive role provided by Hedge Funds to futures markets.” (page 3)

Appendix V Argus — An independent price reporting organisation

Argus is a leading UK-based independent price reporting organisation (IPRO) for global energy markets. The company provides market price information, data and market commentary for the international crude oil, petroleum products, natural gas, electricity, emissions, coal and fertiliser markets.

Argus' assessments of open-market physical energy prices are extensively used by major energy producers and consumers as price references in long-term supply contracts, by governments worldwide¹ as independent references for taxation and other purposes, and by market participants for portfolio mark-to-market, counterparty exposure management, derivatives and a wide range of investment and market analysis purposes.

Argus operates in an open, competitive and efficient marketplace of independent price reporting organisations. IPROs are long established, respected and extensively used providers of price transparency on energy markets. Other price reporting organisations include Platts, Icis (including Icis-Heren), Opus, IHS McCloskey, OMR, Kortess, APPI and Rim. Thomson Reuters, Bloomberg and Dow Jones also compete in this space.

Argus was founded in London in 1970 and has 19 offices worldwide. Its reports are available on a non-discriminatory basis to anyone subscribing.

One primary function of IPROs is to help level the playing field between participants in the physical energy markets by providing subscription access, on standard terms, to market price information. So Argus is committed to, and is an active proponent of, market transparency.

On a daily basis, Argus' well-trained market reporters identify prevailing prices in physical energy markets through the application of detailed and rigorous methodologies. These are publicly available online at www.argusmedia.com/methodology. The company has robust governance and operates a rigorous and transparent controls framework. A global compliance officer oversees the company's compliance regime. This includes a rolling programme of audits to ensure full and continuous adherence to the company's compliance policy, which is publicly available at www.argusmedia.com/compliance.

Further information on Argus can be found at www.argusmedia.com.

¹ Examples:

- The UK government uses Argus prices in assessing statutory market values for non arm's length sales of North Sea crudes
- The Belgian federal government uses Argus prices in its formula to set the maximum retail values for petroleum products within Belgium
- French energy regulator CRE uses Argus prices in its official formula for GDF Suez supply costs
- Italy's electricity and gas regulator AEEG uses Argus coal and biomass prices in the supervision of variable costs of strategically important power plants
- Russia's state-controlled gas exporter Gazprom uses Argus prices for the increasing proportion of its gas sales to Europe that are indexed to spot European gas prices
- The US government's sale of crude from the Strategic Petroleum Reserve in July 2011, as part of the IEA's stock release, used Argus prices as the underlying reference for the sale
- Saudi Arabian, Kuwaiti and Iraqi state-owned oil companies use the Argus Sour Crude Index (ASCI) price as the benchmark price for all grades of crude oil sold to US customers
- The Russian government has used Argus prices in its formulas to set export duty levels for crude and petroleum products
- The Colombian government uses Argus prices to calculate royalty payments on the country's coal exports
- The Indonesian government uses Argus prices in royalty and tax calculations for coal