

# Global Oil Market Developments and Their Consequences for Russia

By Andrey A. Konoplyanik



**Below, Andrey A. Konoplyanik describes the five stages of global oil market developments from 1928 to the present and considers the current two-segment structure of physical and paper oil segments, dominated by Saudi Arabia and the US. The author suggests the movement from a bipolar to unipolar oil world with the US in both segments, and addresses the challenges for Russia as a price-taker, not price-maker in this market.**

If people think about Russian energy today, most of them bear in mind gas rather than oil. This is mostly due to political tensions and/or speculations around the unfortunate Russia-Ukraine gas transit crises of Jan'2006 and Jan'2009, hot debates about new gas pipelines that originated from Russia (like the North and South Streams) which are considered in the Western political establishment and mass-media to be politically rather than economically motivated, the current fight in today's oversupplied EU gas market against oil-indexed contract gas import prices from Russia which have been on average higher than spot prices at European hubs after 2009, the negative influence of the EU Third Energy Package on existing contractual Russian export gas structure and on Russia-EU relations in gas, etc. That overshadows Russian oil in international energy debate. But oil is still much more important for the Russian state, at least because it provides for 41% of 12,9 trln Roubles Russia's budget revenues in 2012 compared to just 8% provided by gas.

Russia may remain an important oil producer but it effectively is and will stay a price-taker, not price-maker, when it comes to global oil. This can be traced back to oil market developments and the consequences they had/have for Russia. In order to understand Russia's role in global oil, we need to understand how international markets have been developing, where and why they stand today, and who is responsible for that.

## Energy markets: global tendencies

The evolution of energy markets has long-term objective tendencies, while oil is a pioneering market worldwide. Energy markets develop from less competitive to more competitive and from vertical integration to term contracts and then to liquid marketplaces. Contractual structures evolve from long-term to medium- and short-term, then to spot transactions, then to futures trading with U-curve development of contractual durations within the time frame, e.g. the shortening duration of the transactions at the physical market and increasing duration of the transactions at the paper market as general trends. The evolution of pricing mechanisms undergo 'cost-plus' to 'net-back replacement-value-based' and then to 'exchange-based' and, finally, to 'financial derivatives-based' energy pricing (at least as in today's global oil market). The general rule thus is that the new market structures and instruments are not implemented instead of, but in addition to incumbent ones, which creates a new competitive configuration of the energy market and explains its tendencies at each new development stage.

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The global oil market has been transformed from a market consisting of one-single-segment of physical energy until the mid-1980s (where the price movements reflected search for supply-demand balance in physical oil) to a market consisting of a flexible combination of two segments: both physical oil and paper oil markets. The latter segment has quickly expanded in value and begun to dominate the physical oil segment. Nowadays it consists of mostly oil-related financial derivatives, and oil price fluctuations nowadays reflect the search for supply-demand balance in oil-related financial derivatives, and not in physical oil.



## Global oil market: five stages of evolution

In 1928 in Achnacarry, Scotland major oil companies agreed on the terms of their international cooperation, known since then as the 'Achnacarry Agreement'. It formed the International Oil Cartel (IOC) known to the public as 'Seven Sisters' (though in the end the number of its members was eight). The Achnacarry Agreement was a foundational basis for systemic organisation of the international oil trade, converting former competitive fight between major oil companies worldwide into successful cooperation that enabled them for more than 40 next years to control the formation of the international oil market.

I identify five major stages of global oil market development since then. Here are their major characteristics.

**First period (1928-1947):** non-competitive physical oil market dominated by IOC (7/8 companies) in which companies implemented transfer pricing and prices within their vertical integration structures (production facilities in oil-rich

developing countries – future OPEC states, but profit centers in the mother states of the oil companies) and long-term 'traditional' concessions (up to 99 years long) with these host states. Cost-plus pricing with artificial 'one-base' pricing mechanism (the result of the Achnacarry Agreement) was linking import price at any delivery point to production costs in the US (then the highest worldwide) and transportation costs from Mexican Gulf non-dependent, where oil really came from (see Figure 1), even if oil was delivered to, say, Western Europe or Japan from less costly production and transport in Middle East and North Africa (MENA).

**Second period (1947-1969/1973):** still non-competitive physical oil market with continued dominance of IOC. Transfer pricing and prices within vertical integrated structures of these companies still existed, though the spectrum of their investment subsoil use agreements with the host resource-owning states has broadened: further to 'traditional' concessions existing since 1901, 'modernised' concessions have appeared in 1948 and production-sharing agreements (PSAs) in 1963. Import price at any delivery point was linked to production costs still in US (non-dependent whether oil was really produced), but transportation costs were calculated from either Mexican or Persian Gulf ('two-base' pricing system). Pricing mechanisms were two-fold: cost-plus in crude and net-back replacement value in petroleum products, thus different in upstream and downstream. The latter enabled, say, Residual Fuel Oil (RFO) from MENA crude to compete with local coal in Western Europe and to win this competition. IOC companies have established RFO price below price of coal in competitive sectors (industry and electricity generation) but have simultaneously increased petroleum products prices in the sectors with non-elastic demand for liquid fuels (transportation) so that the basket of products refined from MENA crude at the European refineries of IOC companies stayed profitable. The 1960s were the 'golden decade' for the Western economy as development was stipulated by steady flows of cheap crude at less than 2 USD/bbl price as the result of oil market structure organised by IOC.

1969-1973 was a transition period from market monopoly of 7/8 companies of IOC to a monopoly of 13 OPEC states.

**Third period (1973-1985/1986):** non-competitive physical oil market with dominance of OPEC (cartel of 13 oil exporting states), which had in mid-1970s nationalised production facilities/assets of the IOC companies. Contractual and spot pricing and prices coexisted in the market with a growing share of spot transactions. Official OPEC selling prices within term contracts were established on the cost-plus basis though OPEC states have linked them not to their production costs (the worldwide lowest in MENA), but mostly to growing in the 1970s spot quotations. The latter were pushed forward by the negative perceptions of the importers about possible repetitions of oil embargoes (like in 1973) within the market then lack/absence of alternative supplies to OPEC and/or adequate commercial/strategic stocks of liquid fuels in importing

**Figure 1. Evolution of pricing mechanisms in international oil**

Periods, who establish the price	Pricing formula for physical supplies
<b>(1) 1928-1947:</b> International Oil Cartel (one-base pricing)	<b>Net forward:</b> $P_{CIF} = P_{FOB} (\text{Mex.Gulf}) + \text{Freight fict.} (\text{Mex.Gulf})$
<b>(2) 1947-1969/73:</b> International Oil Cartel (two-base pricing)	To the West of neutral point: <b>Net forward:</b> $P_{CIF} = P_{FOB} (\text{Mex.Gulf}) + \text{Freight fict.} (\text{Mex.Gulf})$
	To the East of neutral point: <b>Net forward:</b> $P_{CIF} = P_{FOB} (\text{Mex.Gulf}) + \text{Freight real.} (\text{Pers.Gulf})$
<b>(3) 1973-1986:</b> OPEC	<b>Net forward:</b> $P_{CIF} = P_{FOB} (\text{OPEC OSP}) + \text{Freight real} (\text{OPEC})$
<b>(4) 1986-mid-2000's:</b> oil exchange 1 (hedgers => oil speculators)	<b>Net forward:</b> $P_{FOB} = P_{CIF}/\text{exchange} - \text{Freight real}$ $P_{CIF} = \text{Exchange quotations (oil paper market)}$
<b>(5) Mid-2000's &amp; beyond:</b> oil exchange 2 ( <b>NON</b> -oil speculators)	<b>Net back:</b> $P_{FOB} = P_{CIF}/\text{exchange} - \text{Freight real}$ $P_{CIF} = \text{Exchange quotations (NON-oil non-commodities paper markets)}$

$P_{CIF}$  (net forward) - price CIF (at importer end) calculated as cost-plus;  
 $P_{FOB}$  (Mex.Gulf) - price FOB (at supplier end) in the Mexican Gulf area;  
 Freight fict. (Mex.Gulf) - freight rates for fictitious oil deliveries from Mexican Gulf area to importers;  
 Freight real (Mex.Gulf), Freight real (Pers.Gulf) - freight rates for real oil deliveries from Mexican and Persian Gulf areas;  
 $P_{FOB}$  (OPEC OSP) - OPEC official selling prices FOB;  
 Freight real (OPEC) - freight rates for real oil deliveries from OPEC member-states to importers;  
 $P_{FOB}$  (netback) - price FOB, calculated as netback price (price CIF less transportation costs);  
 $I_{CIF}$  (exchange) - price CIF as exchange quotations (at consumer end);  
 Freight real - freight rates for real oil deliveries to importers from production areas.

states. Fundamentals (supply-demand balance in physical oil) were the key factors in defining price levels during that period while dominant players were participants of the physical oil market. After reaching their peak of 41 USD/bbl in 1981 oil prices began slowly to go down and fell to about 30 USD/bbl in 1985. That's how the market forces in the Western economy reacted to a 20-times increase in price in the previous decade: they stipulated and made profitable upstream developments worldwide outside OPEC, on the one hand, and energy savings and energy efficiency measures in the consuming states, on the other hand. Since the early 1980s OPEC states began to violate their export quotas to protect their falling revenues, thus further adding to oversupply, while Saudi Arabia started to play the role of swing producer, diminishing its export below its quota to protect OPEC price level. By the end of 1985 the willingness of this country to play swing producer's role came to an end. Saudi Arabia has increased its production and export to its quota level and has netted-back its export price to petroleum products prices in the US. The prices have fallen dramatically (to 12 USD/bbl), inaugurating radical shift in oil pricing mechanisms and trends.

Subsequently 1985-1986 marked a transition period from net-forward to net-back crude pricing based first on net-back from petroleum products basket price at the importer's market, then to oil price futures quotations on key petroleum exchanges/marketplaces (see Figure 1, previous page). That's how exchange-based pricing started to evolve.

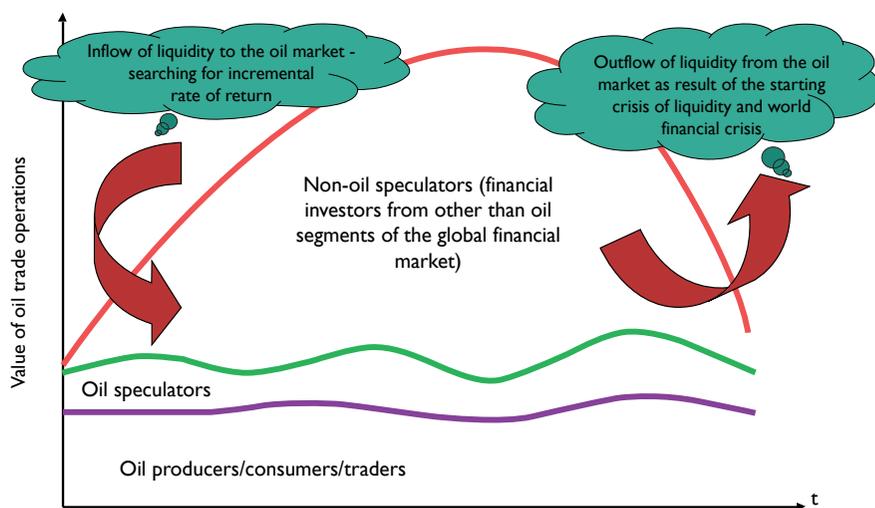
**Fourth period** (1986 till mid-2000s) was characterised by competitive combination of mature physical plus growing paper oil markets and commoditisation of the oil market as the general trend. Pricing was established at oil marketplaces mostly driven by oil hedgers. Well-head prices were netted-back from futures oil quotations. Formation of the global paper oil market was based on the experience and models of financial

markets institutes (instruments and institutions imported to the paper oil market by financial managers from financial markets). Transition from physical to paper market predetermined unstable, relatively low and volatile prices (within 15-25 USD/bbl in the 1990-ies), which led to underinvestment of the global oil industry and has created material preconditions for later growth of costs and prices. Hedgers were the key players (participants at both physical and paper oil market) and fundamentals remain as key pricing factors.

the global financial market, while key players in paper oil now are non-oil speculators that have been bullying the market in recent years and have manipulated it (investment banks and their affiliated oil traders).

Prices at physical market are netted-back from futures oil quotations and oil financial derivatives. Key pricing factors are mostly financial: supply-demand balance for oil-related financial derivatives within a short time-horizon. Pricing is being established outside of oil marketplaces (at non-oil financial

**Figure 2. Role of non-oil speculators (global "financial investors") in forming "price bubble" at the global oil market in 2007-2008 (principal scheme)**



**Fifth period** (mid-2000s to present) presents competitive combination of both physical and paper mature oil markets. Further movement has taken place from commoditisation to financialisation of the oil market. Paper market dominates in volumes of trade. Global institutes of the paper oil market were formed which enabled the paper oil market to work in 7X24 regime. Globalisation, IT-technologies, and a broad spectrum of financial products converted crude oil into global financial assets available (accessible) to every category of professional and non-professional investors (effect of financial 'vacuum sweeper'). Despite steady growth above the volumes of trade in physical oil, the paper oil market remains an insignificant segment of

markets) mostly by non-oil speculators who inflow and outflow different segments of the global financial system, including the paper oil market as one of its segments, with the aim of optimisation of their global financial portfolios. So the oil price is not the aim of their manipulations per se, but just a means of their more global financial optimisation schemes. Non-oil speculators have heavily invested in oil-related financial derivatives in the last decade to compensate for USD decline and thus have stipulated demand for oil-related derivatives, and the increasing price of oil papers was retranslated into price increase of physical oil. This explains the nature of the 2008 oil crisis and its pure financial origin: how the bubble was flown up and how it then busted (see Figure 2), when



the prices first jumped to their historical maximum of 147 USD/bbl in July 2008 and then collapsed to 35 USD/bbl in October.

### **To a more unilateral oil world?**

From my view, there are only two countries that have been really influencing the global oil market today in its current two-segment composition with coexisting physical and paper oil markets. These are Saudi Arabia and the USA.

Saudi Arabia is certainly the key player at the physical oil market due to its level of production and – more important – its export, its spare capacities which could quickly increase this country's oil production levels and hold it for a period of at least few months, its geographical location in between major importing centers, its low level of production and transportation costs, and, of course, its huge proved recoverable reserves of conventional oil.

Another dominant player is the US. Its major role in oil, from my view, is based on its dominant position in world economy and global financial system and thus – at the paper oil market. One should also consider the major US role within cumulative value of global oil financial derivatives

(according to IMEMO RAS<sup>1</sup> calculations, five major US investment banks control almost 95% of derivatives markets), and that pricing on these derivatives and on paper and physical oil is made in USD, the latter being emitted by the US. Another argument is that within the mechanism of 'petrodollars recycling' excessive export revenues of oil exporting countries are invested either into import of goods and services (much of which are of US origin) or in the global financial system where, as was mentioned, the US plays a dominant role.

In the last 15 years the US played, from my view, a dual role in relation to global oil. At the end of last century and the start of the present century, the US played a destructive role in the oil market from the consumer's perspective. In 1999 the USA cancelled the Glass-Steagall Act of 1933 that had been preventing commercial banks from speculating with the money of their depositors. In 2000 they adopted the Futures Commodities Modernization Act (FCMA), which placed transactions with them outside of the control of the US Commodity Futures Trading Commission (CFTC) and thus has significantly downgraded regulatory barriers for risky operations

by socially important institutional investors – holders of long money (such as pension funds, insurance companies). This money was immediately invested in financial derivatives markets, especially those in which growth could have compensated for USD decline. The paper oil market was just one of those. This resulted in oil price growth in the 2000s.

These two US normative novelties have played major 'damaging' roles in the oil market in the last decade. They have allowed and stipulated huge amounts of liquid financial resources of the above mentioned institutional investors to enter the highly volatile and risky paper oil market. These liquid funds were mostly invested into oil financial derivatives through the 'over-the-counter' (OTC) market, which is out of the regulatory reach and control of the US CFTC.

Nevertheless, I would consider that in the near future the US might play a 'repairing' role at the paper oil market, firstly, by adopting measures aimed at setting a limit to the genie that they have let earlier out of the bottle (though I would assume that it will be now impossible to fully put the paste back into the tube).

After and in result of the 2008 crisis, the US has adopted Wall Street Transparency and Accountability Act, more known as Dodd-Frank Act (adopted by US Congress 21.07.2010, entered into force 14.07.2011). This law is to effectively (as is expected) substitute the FCMA and make illegal risky trade operations within coming and more restrictive CFTC rules. The regulatory role of CFTC is thus being improved with the preserving role of the US in the world economy and financial system.

At the physical market we see an intensive decline of the US role as oil importer due to a shale oil revolutionary development: the US 'shale oil revolution' is a second US 'shale revolution' that followed an earlier one in US shale gas. This country has been already increasing its export of petroleum

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products. And it is not impossible to exclude its conversion into oil exporter (the next step after becoming an LNG exporter soon) in result of these 'US shale revolutions'.

This makes it practical to at least raise the question, whether we are not facing further transformation of the world oil market from a current bipolar (with two dominant players – Saudi Arabia in physical and the US in paper oil segments of the market) to a future unipolar structure (with one player – the US – dominating in both paper and physical segments of the global oil market).

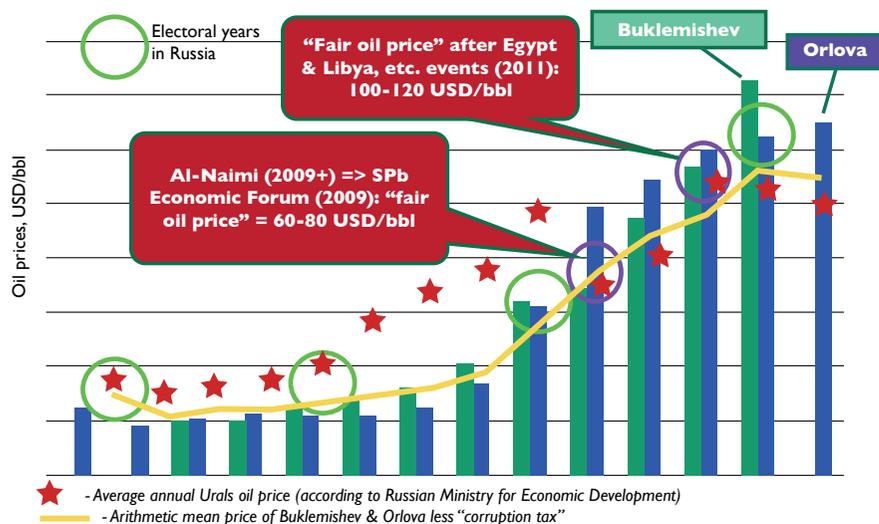
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is more essential today for Russia than in the past. And of course all political speculations such as Russia becoming an energy superpower should be forgotten once and for all since they indicate the wrong aims and lines for action.

The country needs to embrace a different fiscal paradigm and get away from an inefficient state-dominated production coupled with unproductive

all aspects of the Russian oil economy (technology, corporate management, state energy policy, investment climate, etc.). It is only capital that brings technological innovations, so the improvement of domestic investment climate in Russian energy is badly needed as the first step. This author has been arguing for multiple investment regimes for Russian subsoil use, including legal stability and differentiated oil taxation as its necessary means instead of its currently existing flat-rated mineral resource production tax (MRPT) tax with individual derogations (provided in a handy manner) from this universal and generally unfriendly investment rules. Radical improvement of the investment climate is a key to increasing competitiveness of Russian investment projects in oil in the global capital market and, as result, of Russian oil – at the global oil market.

**Figure 3. Oil price balancing Russian budget (with & without "corruption tax") - & "fair oil price"**



Source: Figure created by the author based on the data from presentations of O.V.Buklemishev & N.V.Orlova at the conference "20 years after USSR. What's next?" (Moscow, 09.06.2011), who have kindly provided their data to the author

## The choice for Russia

As a result of current global oil market organisation, Russia needs to confront the challenge of the global financial, including derivatives, markets. Since the role of Russia at the global financial market is currently close to the value of statistical discrepancy, within the current state of global oil market development consisting of both physical and paper segments, the role of Russia is less important today as it was in the period of existence of only the physical oil market. This is why the task of diminishing dependency on the oil sector and thus on oil price fluctuations

consumption and an inefficient use of its oil revenues (see Figure 3). The major challenge for Russia in this regard is how to diminish its high and increasing exploration and production costs for oil, especially bearing in mind continuous worsening of the natural condition of new Russian oil provinces located further North and East. This task becomes additionally challenging with the coming development of Russian Arctic offshore oil and gas. There is no other way for this except introducing multidimensional revolutionary breakthroughs in Russian oil that can be done through bringing innovations into

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## About the Author

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## Reference

1. IMEMO RAS = Institute of World Economy and International relations, Russian Academy of Sciences