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Current oil (dis)order: players, scenarios, and mechanisms

ENRIQUE PALAZUELOS

Abstract. This article has been constructed under the premise that International Political Economy provides the appropriate analytical tools for understanding the characteristics and performance of oil in economic and political relations. The article argues the need to articulate three levels of analysis (major players, scenarios, and exchange mechanisms) in order to understand the economic and political relations that underpin oil exchange during last decades. The central conclusion is that the current oil system is characterised by a set of asymmetric, unstable, and ungovernable relations, whose consequences are unpredictable but not necessarily traumatic.

Enrique Palazuelos (PhD in Economics) is Professor of Applied Economics at the Complutense University of Madrid where he teaches World Economy and US Economy.His research interests include: energy economy, US economy, international financial markets. Enrique Palazuelos can be contacted at: {epalazue@ccee.ucm.es}.

The importance of oil in international relations goes beyond its already outstanding position as one of the most important commodities in world trade.[1] Oil plays a strategic role in both economic and social development and is one of the greatest sources of world power; the question of oil thus occupies a central role for cooperation (or conflict) in international relations.

This work has been constructed under the premise that International Political Economy (IPE) provides the appropriate analytical tools for understanding the characteristics and performance of oil in economic and political relations. The central conclusion is that the current oil system is characterised by a set of asymmetric, unstable, and ungovernable relations, whose consequences are unpredictable but not necessarily traumatic.

The article is divided into six sections. The first section proposes the IPE approach for defining an analytical framework based on the need to articulate three different levels of analysis (or structures): Players, Scenarios, and Mechanisms of Exchange (or PSM henceforth). Sections two to five analyse separately each of these three levels or structures. The sixth section summarises our analysis,

[1] Fuel trade reached $1.8 trillion in 2007, almost 14 per cent of world trade in goods (Source: World Trade Organization). Most fuel trade was for crude oil and refined products, the exclusive topic of this article. Gas trade shows some characteristics similar to oil, but others are very different, putting it outside the scope of this work.

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underlining those characteristics that define the current system where international oil relationships are developed.

1. Oil and international relations: the analytical proposal

The link between oil and politics dates back to the very beginnings of the world oil trade.[2] Since then, 'Oil Diplomacy' (often becoming 'Oil Militarization') has been a permanent feature of international relations.[3] Thus, the International Political Economy approach is necessary to a right understanding of global oil trade, because the mainstream appears to be chained to the thesis of the automatic and efficient functioning of markets, the consideration of power relations as mere technical issues, and the exaltation of the virtues of US hegemony.[4] IPE perceives oil exchange as an important element of International Economic Relations (IER), and the different schools coexisting within the IPE have all studied oil relations from this broad perspective.[5]

A more precise analytical demarcation is provided by Susan Strange: 'It is impossible to study political economy and international political economy specially without giving close attention to the role of power in economic life.'[6] This point reveals a common characteristic of all the authors who are part of the 'critical dissent' within the IPE, who consider international relations as being not limited to links between states. Neither should they be analysed (dissenters argue) as a mere superimposition of connections between economics and politics, or between state and market, or public and private, or national and international; rather, international relations are shaped *in their very structure* by the interconnection of all these elements. The point is therefore not to stress that economic relations are unilaterally influenced by political interferences, but that they contain within themselves power relations which reflect the unequal conditions under which national governments, firms, and social groups operate in markets for goods, services, labor, currencies, and capital.

[2] It is sufficient to recall colonial conditions under which the Anglo-Persian Company (now BP) was founded, or the political weapons used by the British government (and later by the Roosevelt administration) to obtain for their companies the right to drill oil in the Persian Gulf, or the complacency of those governments in regard to the tight oligopoly created after the Achnacarry agreement in 1928.

[3] See Daniel Yergin, *The Prize: The Epic Quest for Oil, Money, and Power* (New York: Simon & Schuster, 1992); Geoffrey Jones, *Multinationals and Global Capitalism* (Oxford: Oxford University Press, 2005); Fiona Venn, *Oil Diplomacy in the Twentieth Century* (New York: St. Martin's Press, 1986).

[4] The special issues published by *Review of International Political Economy*, 16:1 and *New Political Economy*, 14:3, in 2009, includes several articles on the mainstream neo-classical approach and its liberal-conservative ideology. Also Benjamin Cohen, *International Political Economy: An Intellectual History* (New Jersey: Princeton University Press, 2008).

[5] In fact, this issue used to be among the most frequently analysed through this approach, when oil shocks in the 1970s were seen as a major factor of change in economic and political relations. On the diversity of approaches and typologies, see Cohen, *International Political Economy*. Also Ronen Palan (ed.), *Global Political Economy. Contemporary Theories* (London: Routledge, 2000); Stéphane Paquin, *'La Nouvelle conomie Politique Internationale. Théories et enjeux'* (Paris: Armand Colin, 2008); Nicola Phillips (ed.), *Globalizing International Political Economy* (Hampshire: Palgrave Macmillan, 2005).

[6] Susan Strange, *States and Markets* (London: Pinter, 1988), p. 23.

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In the specific case of oil, production and trade of this natural resource provide power to those governments and companies that have control of it. Such control can be exercised in a cooperative manner, or by excluding other governments or companies. For this reason, oil relationships are among the most important cornerstones of (economic and political) international relations.[7] At the same time, production and export of oil support many rentier societies whose (economic and political) life depends on the distribution of oil incomes among the population.[8]

If we take as starting point the theory about structural power proposed by Professor Strange,[9] oil exercises a significant role in three of the four basic social structures: security (oil ownership gives security, its absence becomes a threat); production (it is a basic economic resource), and finance (because of the huge amount and variety of oil contracts and derivatives). Moreover, Strange was able to understand the important changes that began to emerge in the 1980s in international economic relations.[10] Her thesis of 'triangular diplomacy', meaning that international relationships are established through a triple bond, has proved very fruitful: states are bound to states, states to firms, and firms to firms (understanding firms as transnational companies).

Through this approach, the analysis of oil relations reveals the existence of several types of *major players* (P) that are influential or even decisive to the oil trade, such as transnational companies, national corporations, governments, or other principal actors playing the oil game. In turn there are various *geographic scenarios* (S) where oil transactions take place, being national, regional, or global in scope. And within these scenarios players resort to different *exchange mechanisms* (M), including but not restricted to market mechanisms; markets (of whatever morphology) may play a unique, preferential, or partial role, depending on the absence or presence of other mechanisms that influence or even determine sale and purchase conditions.

Thus, the analysis of oil relations requires an interpretative framework that integrates the links that exist between the major players involved in the oil cycle, the scenarios in which they interact, and the mechanisms through which they develop their activity. This triangular PSM (Players-Scenarios-Mechanisms) pattern sets up an (oil) 'system' that contains all the elements that form part of the oil global exchange.

Therefore, *a priori*, considering the multiplicity of links between players, scenarios, and mechanisms, there is no reason to believe that the existing oil system in a given period should be stable, or should strive for stability, that is, that its main features are to remain unchanged.[11] Any PSM system is conditioned by

[7] See Cécile Kérébel and Jan-Horst Keppler, *La Gouvernance Mondiale de lnergie*, Institut Français de Rélations Internationales (Paris: IFRI, 2009); Jan H. Kalicki and David L. Goldwyn (eds), *Energy & Security. Toward a New Foreign Policy Strategy* (Baltimore: Woodrow Wilson Center Press, Johns Hopkins University Press, 2005).

[8] See Terry Lynn Karl, *The Paradox of Plenty: Oil Booms and Petro-states* (Berkeley: University of California Press, 1997); Richard Auty (ed.), *Resource Abundance and Economic Development* (Oxford: Oxford University Press, 2001).

[9] Strange, *States and Markets*; Susan Strange, *The retreat of the State. The Diffusion of Power in the World Economy* (Cambridge: Cambridge University Press, 1996).

[10] Susan Strange and John Stopford, *Rival States, Rival Firms: Competition for World Market Shares* (Cambridge: Cambridge University Press, 1991); Susan Strange, 'States, Firms and Diplomacy', *International Affairs*, 68:1 (1992), pp. 1–15.

[11] Kérébel and Keppler, *La Gouvernance Mondiale*.

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power relations (of absolute or relative dominance) that give rise to situations in which some players try to consolidate their dominant positions while others seek to overcome their subordinate roles. The same applies to government policies in different trade scenarios. The goals of economic wealth and trade control drive the capitalism dynamic and, therefore, international economic relations.

Long-term stability of this system is viable only when one or a small group of players clearly predominate over others. This means that those players are strong enough (economically and/or politically) to impose their interests on the main scenarios where exchange mechanisms favorable to those players are used. Ideally, stability could also exist in a system governed by a large number of players who reach a lasting consensus to operate in the main scenarios using common mechanisms. But such a consensus is highly unlikely if one considers the diversity of the players with divergent (not necessarily antagonistic) interests at play in different scenarios and using different exchange mechanisms.

Therefore, the status of an oil system is determined by the dynamics of its components in each of the three levels (PSM). The degree of instability of the system depends on the sharpness/mildness of the conflicts that arise between players operating in key scenarios. Thus, Oatley's argument is fulfilled: International Political Economy studies the battle between the winners and losers in global economic exchange.[12]

However, not many works have been specifically dedicated to oil from the IPE approach, and even fewer if we exclude those that mention 'political economy of oil' but actually discuss trends in fundamentals (supply, demand, trade) or the evolution of prices and government policies without a 'whole system' vision. There are, however, some interesting works that discuss oil 'governance' from a global perspective.[13] Other works analyse the specific conditions of oil regions or certain crosscutting issues.[14] Still other works have a more general scope, such as Falola

[12] Thomas Oatley, *International Political Economy. Interests and Institutions in the Global Economy* (New York: Pearson, 2009).

[13] See, for example, Bernard Mommer, 'The Governance of International Oil: The Changing Rules of the Games', *Oxford Institute for Energy Studies*, WPM, 26 (2000); Bernard Mommer, *Global Oil and Taxation State* (Oxford University Press, Oxford, 2002); Cécile Kérébel, 'Quelle Gouvernance du Marché du Pétrole Aujourdhui? Mécanismes, Systèmes dActeurs et Rapports de Force en volution', *IEE-Document*, 42, Louvain (Octobre, 2008), pp. 12–31; Thijs de Van Graaf, 'Old Rules, New Players? Integrating the BRIC in Global Energy Governance', *IEE-Document*, 42, Lovain (Octobre, 2008), pp. 33–51; Kirsten Westphal, 'Energy Policy between Multilateral Governance and Geopolitics: Whither Europe?', *Internationale Politik und Gesellschaft*, 4 (2006), pp. 44–62.; David C. Victor et al., 'The Global Energy Regime', available at: {www.princeton.edu/~smeunier/Victor%20et%20al%energy%20Regime.pdf}, accessed on 30 November 2007.

[14] An IPE approach is taken in various works dealing with very different issues: the Middle East, John Waterbury and Alan Richards, *A Political Economy of the Middle East* (Boulder, Co.: Westview Press, 2007); Central Asia, Lutz Kleveman, *The New Great Game: Blood and Oil in Central Asia* (London: Grove Press, 2003); US struggle versus Russia and China, Michael Klare and Daniel Volman, 'The African "oil rush" and US national security', *Third World Quarterly*, 27:4 (2006), pp. 609–28; the dollar as key currency and implications for exporting countries in the Middle East, Bessma Momani, 'Gulf Cooperation Council Oil Exporters and the Future of the Dollar', *New Political Economy*, 13:3 (2008), pp. 293–314; and Russia, Juliet Johnson, 'Forbidden fruit: Russia's uneasy relationship with the US dollar', *Review of International Political Economy*, 15:3 (2008), pp. 379–98; links between development, oil management, and resource curse, Jahangair Amuzegar *Managing the Oil Wealth: OPEC's Windfalls and Pitfalls* (London: Tauris, 1999); Jonathan Di John 'Oil Abundance and Violent Political Conflict: A Critical Assessment', *Journal of Development Studies*, 43:6 (2007), pp. 961–86.

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and Genova, who combine an aggregate view with country studies;[15] but the result is more descriptive than analytical. Claes focuses on OPEC's actions,[16] while Mitchell relates oil conditions with the political imperative of change due to environmental limits.[17] Also worth mention is the research programme developed by the Center for Strategic & International Studies (CSIS), where we find Weintraub's work as well as publications of the Woodrow Wilson Center, including Kalicki and Goldwin;[18] but both these projects have an analytical and political bias as they follow the point of view of US energy interests.

2. New and old actors (mayor players)

The political-economic dominance that was characteristic of the oil system during the 1950s and 1960s went bankrupt in October 1973, when OPEC declared an embargo on the US and Holland, then began to act as a cartel that controlled the supply price of crude oil. Afterwards, most member countries agreed to nationalise the production and exportation of their oil reserves.[19]

2.1. Emergence and consolidation of NOCs

The nationalisation of oil resources, both in OPEC and non-OPEC countries, led to the emergence of new players, since the *National Oil Companies* (NOCs) moved to vertically control oil activity in their home countries. Thus, they became major players sharing the greater part of oil production and exports; they own most of world's reserves and have extensive distribution networks, refining industries, and sale centers for finished products. However, among these national companies there are differences, taking three criteria into account: (i) the degree of state ownership, (ii) the technological and financial capacity to exploit and sell the oil, and (iii) the control over oil export incomes.

a) NOCs in the Middle East stand above the rest. Ownership is 100 per cent public, and together they share a quarter of world production and hold more than 55 per cent of reserves (see Table 1). Generally speaking, they have the technological and financial capacity to act independently, although in varying degrees; they hardly accept the presence of foreign companies, and when they do so, it is only under their own conditions. Apart from the Gulf-area NOCs, Sonatrach, NOC-Libya, Petronas, PdVSA, and Pemex all exhibit similar characteristics.[20]

[15] See Toyin Falola and Ann Genova, *The Politics of the Global Oil Industry: An Introduction* (New York, Praeger, 2005).
[16] See Dag Harald Claes, *The Politics of Oil Production Cooperation* (Boulder, Co.: Westview Press, 2008).
[17] See John Mitchell et al., *A new political economy of oil, impacts on business, geopolitics and society* (London: Royal Institute of International Affairs, 2001).
[18] Sidney Weintraub, 'Issues in International Political Economy, Oil and Natural Gas Politics in the Westhern Hemisphere', *Centre for Strategic & International Studies*, 65 (2005); Kalicki and Goldwyn, *Energy & Security*.
[19] Daniel Yergin, *The Prize*; Fiona Venn, *Oil Diplomacy*.
[20] James Baker Institute, 'The Changing Role of National Oil Companies in International Energy Market', *Policy Report*, 35 (Institute for Public Policy: Rice University), available at: {http://

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b) African NOCs (especially Nigeria's NNPC and Angola's Sonangol), Caspian Sea NOCs (KazMunaiGaz and Socar), and several Latin American NOCs are also state owned, but their lack of technological and financial capability means that oil production and management is in the hands of transnational companies, which thereby receive the majority of export earnings.[21]

c) Other NOCs operate under very particular conditions. Norway's Statoil and Brazil's Petrobras are only partially owned by the state, and their behaviour resembles that of large private companies.[22] The Russian companies, Rosneft and Gazprom (the giant gas monopoly), also retain a majority of state capital, but they share the oil market with large private companies.[23]

d) Finally, other important NOCs have been created in consuming countries like China (CNPC, Sinopec, CNOOC), India (ONGC and OIL), and Korea (National Korean Oil). These control the oil extraction in their countries and, above all, they invest in producing countries from Asia and Africa in order to obtain direct access to oil resources and/or better exchange terms for their imports.[24]

2.2. Transnational corporations

Large private companies that dominated the oil business until 1973 have had to adapt their strategies to new conditions that reduced their presence as oil producers and exporters. On one hand, they have expanded their activities into other energy sources (natural gas, electricity) and downstream oil, that is, refining, chemical, petrochemical production, and commercial distribution of petroleum and chemical products. On the other hand, they have settled into other producing areas where they are allowed to drill oil, such as the West African coast, the Caspian, and Latin America. At the same time, many mergers and acquisitions have brought about a profound sector restructuring.[25] Following these changes, we can identify three different types of firms according to their size and their technological and financial strength.

bakerinstitute.org}, accessed November 2007}; Falola and Genova, *The Politics of the Global Oil Industry*; Waterbury and Richards, *A Political Economy*.

[21] Jedrej George Frynas and Manuel Paulo, 'A new scramble for African oil? Historical, political, and business perspectives'. *African Affairs*, 106:423 (2007), pp. 229–51; Richard Weitz, *Kazakhstan and the New International Politics of Eurasia* (Washington: Central Asia-Caucasus Institute, 2008). However, there are important differences in the share of production and revenues that NOCs retain. This share depends very much on the bargaining power of each government and NOC against foreign companies. Moreover, the distinction we draw between the two groups of NOCs is not static. It may be that a company of the first group (such as PDVSA Venezuela) enters a phase of difficulties (political, financial, and technological) that forces a greater presence by foreign investors and, thus, reduces its control over production and export earnings.

[22] Kalicki and Goldwyn, *Energy & Security*.

[23] Rafael Fernández, 'Some scenarios of Russian oil exports up to 2020', *Europe-Asia Studies*, 61:8 (2009), pp. 1441–59.

[24] Hiroyuki Ishida, 'Energy Strategies in China and India and Major Countries' Views', *Institute of Energy Economics*, Tokyo, available at: {http://eneken.ieej.org/en, March, 2007}; Enrique Palazuelos (dir.). *El petróleo y el gas natural en la geoestrategia mundial* (Madrid: Akal, 2008), cap. VI, VII, VIII and IX.

[25] Amy Myers Jaffe and Ronald Solingo, 'The International Oil Companies', *The James Baker Institute for Public Policy*, Rice University, available at: {http://bakerinstitute.org, November, 2007}; Falola and Genova, *The Politics of the Global Oil Industry*.

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	State ownership (%)	Oil output 2007 million barrels/day	Reserves[a] 2007 million barrels/day[b]
Middle East			
Saudi Aramco	100	8.5	710
National Iranian Oil Co.	100	3.9	380
Iraq National Oil	100	2.1	315
Kuwait Petroleum Corp.	100	2.2	280
Abu Dhabi National Oil Co.	100	2.3	255
Petroleum Development Oman LLC	60	0.8	42
Qatar Petroleum Corp.	100	0.6	15
Dubai Petroleum Co.	100	0.04	11
Africa			
National Oil Corp. (Lybia)	100	1.7	115
Nigerian National Petroleum Corp.	100	2.3	100
Sonatrach (Argelia)	100	1.4	34
Egyptian General Petroleum Corp.	100	0.6	25
Sonagol (Angola)	100	1.7	25
Latin America			
Petroleos de Venezuela (PdVSA)	100	2.9	275
Petróleos Mexicanos (Pemex)	100	3.1	30
Petrobras (Brazil)	32	1.9	26[c]
Petroecuador	100	0.5	12
Ecopetrol (Colombia)	90	0.3	4
Russia and Caspian Sea			
Rosneft (Russia)	75	0.7	48
Gazprom (Russia)	50	0.7	–
Kazmunaigaz (Kazakhstan)	100	–	–
Socar (Azerbaijan)	100	–	–
Europe			
StatoilHydro (Norway)	62	1.1	6.5
Asia			
Petronas (Malasia)	100	0.7	15
Pertamina (Indonesia)	100	0.1	–
China Nacional Petroleum Corp.	100	0.8	32
Sinopec (China)	72	–	–
China National Offshore Oil Corp.	66	–	–
Oil and National Gas Corp. (India)	74	–	–
Oil Indian Ltd	100	–	–
Korean National Oil Co.	100	–	–

[a)] Includes condensates and gas liquids.
[b)] Data on reserves are originally in barrels but here are converted to b/d to facilitate comparison with production data.
[c)] Its importance will grow considerably, as new oilfields have been recently discovered. Sources: *Oil & Gas Journal* (15 September 2008) and Petroleum Intelligence Weekly (*PIW's Top 50: How the Firms Stack Up*).

Table 1. *Principal National Oil Companies by regions*

a) Seven major companies occupy the most prominent position (see Table 2). The former 'Seven sisters' are among them, although they have since integrated into ExxonMobil and Chevron, two of the three major US companies, alongside

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ConocoPhillips.[26] The other four majors are European (BP, Shell, Total, and Eni), although BP has a growing US profile following its purchase of Amoco and Arco Soho. The production capacity of these majors is significant, but much lower than that of the main NOCs.[27] However, these companies remain unbeaten in other phases of the petroleum cycle. They control a large number of pipelines, a very significant portion of refining (seven produce a quarter of global derivatives), and the commercialisation process of these products. Each of these companies has numerous refineries and hundreds of service stations located throughout the world, besides having a presence in natural gas, other energy resources, and numerous chemical productions. The value of their assets and net revenue (see Table 2), like other figures such as their stock market value, show that the majors are part of a select group of global giants.

b) Large private Russian companies, like Lukoil and Surgutneftegaz, still maintain very close ties with the state apparatus.[28] They have production and reserve levels above the majors, but their technological and financial capacity is far lower, as is their international presence, though Lukoil is winning prominence in the Caspian Sea and other producing areas while expanding its refineries in Eastern Europe.

c) Other US companies are at a lower level. These are smaller than previously and more focused on domestic drilling and refining, but with a growing presence overseas. These include the six listed in Table 2, alongside other Canadian and Australian firms also focused on domestic resources but with growing investments abroad. Others, like Spain's Repsol and Austria's OMV, are focused on foreign production but also engage in refining and marketing in many countries. Similar is the case of Japanese companies engaged in overseas oil production (Caspian, UAE, Southeast Asia); although private, they have close ties, including financial ties, with the government.

Finally, although they are not transnational companies, other relevant players in international oil exchange include the large US refineries that are not dedicated to oil extraction but whose domestic processing is done mostly through imports. These include big firms like Valero, Tesoro, and Sunoco. In a similar position are the major Japanese refiners Cosmo Oil, Nippon Oil, and Idemitsu Kosan.

2.3. Governments

Governments of major producing and consuming countries have assumed a greater role since the oil shocks of 1973 and 1979.

[26] ExxonMobil comes from the merger between New Jersey Standard Oil and Mobil. Chevron is the result of merging Standard Oil of California, Gulf, Texaco and Unocal. ConocoPhillips joined Conoco and Phillips, and then purchased Burlington Resources.

[27] Among the twenty biggest oil drilling companies only four are private, and the best placed, ExxonMobil, is ranked number seven, while Chevron stands at 11th place, ConocoPhillips at 16th, and British Petroleum at 19th. Their positions are even weaker on stocks, because the vast majority of oil reserves are in the hands of large NOCs. The best-positioned in stocks is again ExxonMobil, though it places at a distant 20th.

[28] Although Conoco-Phillips already owns 20 per cent of Lukoil, the other private company (TNK-BP) has a more independent (and conflicting) relationship with the Russian government. Fernández, 'Some scenarios of Russian oil'.

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	Output 2007 million barrels/day	Reserves[a] 2007 million b/d	Asset Value 2007 billion $	Net turnover 2007 billion $
ExxonMobil (US)	2.2	21.1	242	141
Chevron (US)	1.8	19.5	149	19
ConocoPhillips (US)	1.4	17.3	178	12
Total (France)	0.6	17.9	166	19
British Petroleum (UK)	0.9	15.1	236	21
Royal Dutch Shell (Holland)	0.7	10.4	269	31
ENI (Italy)	0.4	10.7	148	14
Lukoil	2.0	43.2	60	10
Surgutneftegaz	1.3	–	37	3
Occidental Petroleum (US)	0.5	6.0	36	5
Apache (US)	0.3	3.0	29	3
Devon (US)	0.2	2.7	41	4
Anadarko	0.3	2.7	49	4
Hess (US)	0.3	2.5	26	2
Marathon (US)	0.2	1.9	43	4
Canadian Nat. Resources	0.1	3.8	37	2
Encana Corp (Canada)	0.9	2.7	46	4
Talisman (Canada)	0.2	2.2	21	2
PetroCanada	0.2	1.9	24	3
Repsol YPF (Spain)	0.5	2.7	69	5
OMW (Austria)	0.2	1.9	31	3
BHP Billiton Pet. (Australia)	0.2	1.6	59	14

[a)] Includes condensates and gas liquids.
Source: *Oil & Gas Journal* (15 September 2008)

Table 2. *Principal Private Ownership Oil Companies*

a) Leaders of countries with oil resources have become aware of the economic possibilities that stem from having direct control over one's own reserves; even more so since they are almost all oil-rentier economies that use oil rents to feed the continuation of social and political domination structures. The elites of the Middle East, North Africa, and elsewhere have launched oil strategies, implemented through NOCs, with three main objectives:[29] (i) maintaining a sufficient supply of crude oil, but rationing production so as not to deplete reserves; (ii) increasing (with favourable prices) and controlling the entry of foreign currencies via oil exports, and (iii) diversifying their customers.[30]

The situation is different for governments whose NOCs have insufficient technological and financial capabilities and/or very weak political and economic institutions. This domestic fragility makes them more vulnerable to corruption and foreign pressures, as is particularly clear in the sub-Saharan African countries, but

[29] See Robert Mabro (ed,), *Oil in the Twenty-First Century. Issues, challenges and opportunities* (Oxford: Oxford University Press, 2006); Palazuelos, *El petróleo*.

[30] OPEC could be considered a 'booster' to the governments' negotiating power with all member countries. It can be said that OPEC worked as a supply cartel between 1974 and 1982. However, after the decline of its policy of production quotas and the lack of internal discipline among its members, OPEC does not currently play an important role in international oil relations.

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also in the Caspian Sea states and some of Latin America.[31] Given these conditions, such countries accept the dominant presence of foreign companies both in drilling and export, dramatically reducing their policy space to undertake an independent strategy and achieve the three above-mentioned goals.

b) Governments of consuming countries have decided to take a more active role in oil relations due to increasing concern about energy import dependence. Despite recurrent statements in favour of limiting oil consumption, the fact remains that even today this resource represents a large share of energy demand in major developed countries, and this share is increasing in China, India, and other countries,[32] while most of that oil consumption is supplied through massive crude imports.[33] Therefore, the strategy of these governments is aimed at ensuring this huge external oil supply to feed domestic demand from transport systems, industry, agriculture, households, and commercial services. This strategy is part of their energy policy as much as their political and military policies, and it is always defined by four key goals:[34] (i) ensuring the largest possible range of crude; (ii) direct access to foreign reserves in producing countries (through international oil companies and Asian NOCs); (iii) reaching best prices and stable trade through markets and/or other means, and (iv) diversifying suppliers to reduce the power of sellers.

3. Old and new oil scenarios

Distribution of oil flows has also undergone important changes from the point of view of their origin and destination. Following these changes, three main areas have been shaped:

a) *Import-dependent scenarios:* crude imports by the three major consuming regions (the US, Europe, and Southeast Asia-Pacific) have risen from 19.5 million barrels per day (b/d) in 1970 to 30.4 million in 2000, and to 37 million in 2008, to which 4.5 million b/d of refined products must be added. This increase has been very strong in Asia due to the intense economic growth of the newly industrialised countries (South Korea, Singapore, Hong Kong, and Taiwan); the growth of three other, larger countries that have tried to follow the four dragons (Indonesia, Malaysia, and Thailand); and, dramatically, economic growth spurts in China and India. In this way, the Asian region has claimed a fundamental role as oil

[31] See Nicholas Shaxson, *Poisoned wells. The Dirty Policies to African Oil* (London: Palgrave Macmillan, 2008); Auty, *Resource Abundance*; Jean-Pierre Angelier, 'Lvolution des Relations Contractuelles dans le Domain Pétrolier', *Note de Travail, 11/08, LEPII* (2008).

[32] Oil accounts for almost half of energy consumption in Japan and Korea, and over 40 per cent in the US, and ranges from 33 per cent in France to 46 per cent in Italy among the six major European consumers. It accounts only for 20 per cent in India and China but is growing rapidly. Source: International Energy Agency, IEA, *Oil Information* (Paris: IEA, 2008). International agency estimates (from IEA, EIA, OPEC, APERC) agree that oil will continue to provide about 35 per cent of world energy consumption over the next two decades.

[33] Imports account for about 60 per cent of consumption in China, over 65 per cent in India and the US, and even higher percentages in European countries, while Japan and Korea depend entirely on imports. Estimates are for these shares to continue to grow in the coming decades.

[34] Kalicki and Goldwyn, *Energy & Security*; Enrique Palazuelos, *El petróleo*, cap. I and XVI.

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importer.[35] In net terms, these three most important consuming regions are importing over 32 million b/d, of which more than 15 million go to Southeast Asia, more than 10 million to Europe, and a similar volume to the US. The 4.5 million b/d of imported refined products are distributed in similar proportions among the three regions.

Thus, as shown in Table 3,[36] the three regions account for nearly four-fifths of world oil consumption but only provide a third of production, including the two drilling areas whose production feeds the US (Canada-Mexico) and Europe (North Sea). However, in the case of refined products, these consumer regions have almost 70 per cent of refined production, yet they are also importing from other oil producing countries. While these oiler economies share less than a third of world production, they have an exportable supply of refined products due to their lower economic development, lower degree of urbanisation, and lower extension of motor vehicles.

b) *Exporter scenarios:* The discovery of new oilfields has allowed more countries to play an exporting role. In the 1970s, this was the case with the North Sea (Norway, the United Kingdom, Denmark) and Mexico.[37] In the 1980s, the sub-Saharan countries of the west coast of Africa, such as Nigeria, emerged as exporters or strengthened their capacity, as did others located in Southeast Asia (Brunei, Indonesia, Malaysia, Thailand) and Latin America (Colombia, Ecuador). More recently, in the former USSR during the late 1990s, Russia regained its capacity to export (after the collapse suffered in previous years), while production in Kazakhstan and Azerbaijan took off following discoveries made around the Caspian Sea.[38] On the other hand, the US recorded a gradual depletion of its most significant onshore fields, and production dropped quickly,[39] as has also occurred in the current decade in what were once emerging exporters: Mexico, the UK, and Norway.

As a result of these changes, the world's oil output grew from 48 million b/d in 1970 to 75 million by 2000, and to nearly 82 million in 2008. This is more than enough to supply the increasing demand from developed countries and other (mainly Asian) economies that have recently become consumer-importers. The supplier role, meanwhile, is undertaken by four regions: the Middle East, Africa, Latin America, and Russia-Caspian, which together generate more than

[35] All together, the nine countries mentioned have increased their consumption from 1.7 million b/d in 1970 to 13.3 million in 2000, and to 18 million in 2008. Sources: International Energy Agency, IEA, *Oil Information*; British Petroleum, *Statistical Review of World Energy* (2008), available at: {www.bp.com} accessed on 23 April 2009.

[36] We consider a four-year (2005–2008) average to be more representative than 2008 data, since the year was very peculiar (with rising prices in the first half and sharp decline in the second).

[37] These three European countries quickly began production, reaching 2 million b/d in 1980 and growing through the end of the century (to 6.2 million in 2000), when output began to decline. Mexico raised its production from 0.5 to 1.4 million b/d in 1980, staying around that figure until the present decade, when output began to decline. Sources: IEA, *Oil Information*; British Petroleum, *Statistical Review of World Energy* (2008).

[38] The fall in Russian output was dramatic between 1990 and 1998, from 10.4 to 6.5 million b/d. The subsequent recovery has returned production to 10 million b/d, while in Kazakhstan and Azerbaijan, output has risen from 1 to 2.5 million b/d. Sources: IEA and British Petroleum, *Statistical Review of World Energy*, 2008.

[39] US oil production decreased from 11.3 to 10.1 million b/d during the 1970s, then continued to fall, to below 7 million beginning in 2000. Enrique Palazuelos, 'The Role of transnational Companies as Oil Suppliers to the US', *Energy Policy*, 38:8 (2010), pp. 4064–75.

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three-quarters of production and consume slightly more than a fifth. Consequently, with total exports at 32 million b/d, more than half of these sales come from the Middle East, 6.5 million b/d from Africa, 6 million from Russia-Caspian, and almost 2 million from Latin America, mostly from Venezuela (see Table 3).

c) *Transit scenarios:* The sharp increase in trade and the presence of new players all around the globe have made relevant two other areas related to oil transport: cross-country pipelines and key maritime points along transoceanic routes. First, Ukraine, Belarus, Poland, and the Baltic republics have become transit zones for some Russian oil moving from Western Siberia to Western and Central Europe. The same has happened with Caspian Sea production, due to the existence of intermediate territories between the producing areas and large consuming countries in Europe and Asia. Georgia, the Black Sea, and Turkey have all become crucial for the European route, while Pakistan, Afghanistan, and Bangladesh are key for routes to the East and Southeast, and Russia and Iran have reinforced their position both as producing and transit countries.[40]

Second, the relevance of shipping as become even greater, as this is currently the means of transport for over 60 per cent of the global oil trade. Thus certain geographical points have become unavoidable for ships travelling from the Middle East and Africa to Southeast Asia and America. The straits of Bab el Mandeb, Hormuz, and Malacca are particularly important, as oil traffic here is especially intense. Currently, 40 per cent of world sales transit through the Strait of Hormuz, and this share is expected to rise to 50–60 per cent over the next two decades.[41]

4. New exchange mechanisms and new market conditions

A growing share of the purchase and sale of crude oil is conducted through institutional and business arrangements whose details are distinct from those that rule direct transactions on spot and forward markets. Moreover, the exchange taking place under market conditions is now influenced by new factors that affect the formation and evolution of prices.

4.1. Institutional and business agreements

The most obvious form of trade that takes place outside competing markets is when transnational companies import crude oil to feed their own refineries located in different countries. But even when different companies are involved, the trade instruments have been diversified through various types of arrangements.

a) *Investment agreements* between international companies or NOCs from importing countries (China, India) and NOCs or governments from exporting countries. The former gain access through prepayment of the licenses required for exploring and drilling oil (oil equity). The same goes for joint ventures, Production

[40] Mamuka Tsereteli, *Economic and Energy Security: Connecting Europe and the Black Sea-Caspian Region* (Washington: Central Asia-Caucasus Institute, 2008).
[41] International Energy Agence (IEA), *World Energy Outlook* (Paris: IEA, 2004).

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	Production		Consumption	Reserves[a]	
	Crude	Refined		Without sand	With sand[b]
US (%)	8.4	20.1	24.1	2.4	2.1
Canada-Mexico (%)	8.2	4.4	5.0	3.0	13.7
Europe w/o North Sea (%)	1.6	17.3	17.3	0.3	0.2
North Sea countries (%)	5.7	2.5	2.5	1.0	0.9
South-Eastern Asia (%)	9.7	28.9	29.5	3.3	3.0
World share (%)	33.6	73.2	78.4	10.0	19.9
Total (million barrels/day)	26.6	54.8	66.4	342	769
Middle East (%)	31.3	8.4	7.1	60.6	54.0
North Africa (%)	5.7	}3.3	1.6	4.7	4.3
Sub-Saharan Africa (%)	6.7		1.7	5.0	4.4
Former USSR (%)	15.3	8.0	4.7	10.3	9.1
Latin America (%)	8.3	7.2	6.5	9.3	8.2
World share (%)	67.4	26.8	21.6	90.0	81.1
Total (million barrels/day)	54.8	20.2	18.2	3.082	3.082

[a)] Data on reserves are originally in barrels but here are converted to b/d to facilitate comparison with production data.
[b)] Canada's endowment of oil sands reserves raise total reserves from 70 to 493 million barrels/day.
Source: Own made from BP (2009).

Table 3. *Oil production, consumption, and reserves by deficit and superavit regions: annual average 2005–08 (% and million barrels/day)*

Sharing Agreements (PSAs), or any other variant that exchanges capital and technology for oil.[42] These agreements are often complemented by other commitments related to building refineries and/or pipelines. Most common in West Africa, the Caspian, and Latin America, they are also found in other regions.

b) *Trade agreements* between government agencies, NOCs, or refineries from importing countries and NOCs and governments from exporting countries. Both sides guarantee the supplier-customer relationship in the medium term, with provisions to adjust prices to benchmark changes. This is a tool commonly used by big Asian importers with Middle Eastern countries and other producing areas. These agreements come often together with oil equity and pipeline projects. The US and Western European countries lack state institutions (agencies and NOCs) to undertake these types of agreements.[43]

c) Simultaneously, *some general instruments* are employed to facilitate investment and trade agreements. These include, firstly, the establishment of extra-oil economic ties through which NOCs and governments from importing countries invest, provide loans, and supply industrial products to countries that have oil (and other raw materials). Again, the Asian countries most often promote these ties, taking advantage of their large stock currency reserves, economic potential, and recourse to public or semi-public powers to back the links, especially with the Middle East, Africa, and countries such as Venezuela).[44]

[42] Angelier, 'Lvolution des Relations'.
[43] Jaffe and Solingo, 'The International Oil Companies'; Palazuelos, *El petróleo*, cap. III and V.
[44] Gawdat Baghat, 'Energy Partnership: China and the Gulf States', *OPEC Review*, 29:2 (2005), pp. 115–31; Ishida 'Energy Strategies'; Erica Downs, 'The Fact and Fiction of Sino-African Energy Relations', *China Security*, 3:3 (2007), pp. 42–68.

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The other instrument is political-military in character. The governments of the US and China, and to a lesser extent others (France, the UK), lobby for their own interests. China presses for oil equity agreements and trade deals, while the US wants producing countries to guarantee a sufficient and steady oil flow into markets. Counterparts to achieve such ends include supporting oil-producing governments in international organisations, spurring arms-sale contracts, giving military advice, or signing agreements that protect the ruling elites from any domestic or foreign enemy. The ultimate expression of this instrument can be seen in the Middle East, where US policy has established onshore and offshore military bases, fed local armies, and guaranteed political protection for ruling elites.[45]

d) *Agreements among transnational corporations*. Some agreements share the investments risks in oil exploration and pipeline projects, such as the joint ventures and other partnerships in the North Sea, Caspian Sea, and, increasingly, in West Africa.[46] Many joint ventures also exist for refining, both in European and Asian countries without reserves as well as in oiler countries such as Canada, the United Kingdom, Venezuela, Brazil, Australia, Indonesia, and almost all of Africa.

e) *Agreements by exporting NOCs with companies or governments* from importing countries, in order to gain entry into markets through asset sharing in domestic refineries and distribution networks. Venezuela's PDVSA is the most consolidated case, with a large refinery in the US and a vast network of fuel stations. Saudi Aramco and Pemex also have refineries abroad which are shared with companies from the consumer countries, and NOCs from other exporting countries are focused in the same direction. Russian companies and other NOCs such as Pertamina, Petronas, and Petrobra are instead oriented towards Africa and the Caspian Sea.

All these arrangements (between firms, between governments, and between firms and governments) support a significant share of oil trade. This trade is carried out under conditions different from those ruling the open markets (both spot and forward), where other export-import players also engage.

4.2. Price formation and evolution in spot and forward markets

Oil markets reflect the dominant role of political and financial powers in international relations through two key issues: benchmark prices and payment currency. Most oil market transactions use as benchmarks the Brent and WTI indexes, which do not actually represent the majority of oil supply; the former (North Sea) is a minority type of oil in world production, while the latter (West Texas Intermediate) refers to a mix of crudes produced in or imported into the US. Despite this, they are used as reference prices in oil markets because the UK and

[45] Hossein Askari et al., *The Militarization of the Persian Gulf. An Economic Analysis* (Cheltenham: Edward Elgar, 2009); Rachel Bronson, *Thicker than oil: America's Uneasy Partnership with Saudi Arabia* (Oxford: Oxford University Press, 2006); Colomban Lebas (dir.), *Géopolitique de l'énergie:risques et enjeux pour la Defense*, Centre d'Études et de Recherche de l'Enseignement Militaire Superieur (Paris: CHEM-CEREMS, 2006).

[46] Boris Najman et al., *The Economics and Politics of Oil in the Caspian Basin* (London: Routledge, 2008); Bernard D Cole., *Sea Lanes and Pipelines. Energy Security in Asia* (Westport, Conn.: Greenwood Press, 2008).

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US are world powers, while London and New York are major financial centres.[47] Also, as another expression of US political power, the US dollar is held to be the key currency in oil markets.

However, despite evidence of certain significant institutional bias in the oil markets framework, none of the oil players has had access to direct control over prices since the mid-1980s. This is a very important feature of current oil market performance. The early period when prices were controlled by transnational corporations gave way to another period, from 1974 to 1983, when the reference price was determined by OPEC, as it used to control most part of world exports. The subsequent weakening of OPEC as a cartel led to yet another situation without leading players. This situation remained until the end of the 20th century and brought as its principal consequences a growing oversupply, falling prices, and very favourable conditions for importing countries and companies.[48] However, these conditions discouraged investments in exploration of new oilfields and encouraged the over-exploitation of fields in Mexico, the North Sea, Egypt, and other countries. Thus, the current supply of crude oil can only grow slowly while the gap between potential and effective production continues to narrow, so that output is increasingly being adjusted to demand growth.

Spare capacity reduction introduces still greater uncertainty, should hypothetical traumatic events affect major exporters, or should the acceleration of demand hold true. Since 2000, and even more since 2004, these threats, while very unlikely, have been repeatedly used by a new type of player: financial capital. The context of uncertainty (where many other factors are playing)[49] is attractive to a growing number of high-risk investors (hedge funds, investment banks) willing to make use of new financial instruments in the oil markets (futures, options) for speculation. The large volume of the invested capital has *financialised* real oil markets (spot and forward), now moved by agents whose sole use for oil is to reap quick financial profits.[50]

Among others, the three papers that were cited above show how from 2004 to 2008, financial capital became a price-maker in the oil trade, holding the dramatic upward trend of the benchmark. Financial investors made high profits when prices

[47] Bassam Fattouh, 'The Drivers of Oil Prices: The Usefulness and Limitations of Non-Structural Models, the Demand-Supply Framework and Informal Approaches', *Oxford Institute for Energy Studies WPM 32* (March, 2007); Bjorn Hagstromer and Szymon Wlazlowski, 'Causality in crude oil prices', *Munich Personal RePec Archive*, *MPRA Paper 1577*, available at: {http://mpra.ub.uni-muenchen.de/1577}, accessed on 14 June 2008.

[48] Bassam Fattouh, 'The origins and evolution of the Current International Oil Pricing System: a critical assessment', in R. Mabro (ed.), *Oil in the 21st Century*, (Oxford: Oxford University Press, 2006), pp. 41–100; Fattouh, 'The Drivers of Oil Prices'; Robert Mabro, 'OPEP behaviour 1960–98: a review of the literature', *Journal of Energy Literature*, 4:1 (1998), pp. 3–37. Nominal prices fell from annual average ranges of $33–35 per barrel, depending on the variety of raw, in 1980–82, to $28–29 in 1983–85. Beginning in 1985 and for a long (12-year) period, averages were at $16–18 per barrel. Source: British Petroleum, *Statistical Review of World Energy*.

[49] Such as the impact of natural gas (conventional and tight gas), the impact of political turmoil in the Middle East region, and the US sanctions on Iran (uncertainty for Irans oil development but also for Caspian oil/gas, and pipelines).

[50] Michael Greenberger, 'Energy Speculation: Is Greater Regulation Necessary to Stop Price Manipulation?', *Testimony before Subcommittee on Oversight and Investigations of the US House Committee on Energy and Commerce*, available at: {http://digitalcommons.law.umaryland.edu/cgi/} accessed on 17 December 2007; Hagstromer and Wlazlowski, 'Causality in crude oil prices'; Randall Wray, 'The Commodities Market Bubble. Money Manager Capitalism and the Financialization of Commodities', *Public Policy Brief*, 96 (Levy Economics Institute, 2008).

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rose from $50/barrel in 2005 to $70 in 2007, and to $150 in the summer of 2008; exporting companies (NOCs and transnational) were also favoured, as were governments from producing countries, whose income grew rapidly.

5. (Dis)order in the international oil system

5.1 Several important players, without hegemony and without global consensus

An important feature differentiates oil from almost all other goods, services, and financial products. Whereas most trade and financial relations have experienced increasing liberalisation and privatisation, many governments and state enterprises have strengthened their influence in the oil sector over recent decades.

However, this does not mean that 'the State' is the only unit of analysis in oil relations. First, transnational corporations (of different types) and NOCs (also of different types) are important players as well. Second, the 'State' entity can play a dual role in the oil system, as a player (in the case of governments that are relevant actors) and/or as a scenario (as a territory where other governments and foreign companies play an important role, especially when national institutions are weak and open to pressures from external actors).

Analysis of the major players reveals that none of them dominates its rivals, none has decisive control over oil relations, or simultaneous control over several important scenarios, and none is able to enforce those exchange rules most useful to its own interests. This general non-hegemony can be demonstrated through analysis of such actors as the US government, multinational companies, and large NOCs and their governments.

Large NOCs in the Middle East and in certain other countries control most of the world's oil reserves and have the technological and financial capacity to exploit those resources; but they are limited by US political and military dominance over the region and over transoceanic routes. US domain is exerted in order to guarantee a sufficient exportable supply,[51] as well as to maintain benchmark prices and the US dollar as key currency.[52]

Transnational corporations have great technological capabilities and significant financial resources, as well as a pre-eminent position in downstream activities, but they control only a very small part of oil reserves.[53] They tend to deal with very

[51] Bronson, *Thicker than oil*; Askari, *The Militarization*; Palazuelos, 'The Role of transnational Companies'; Paul Rivlin, *Economic Policy and Performance in the Arab World* (Boulder, Co: Lynne Rienner, 2001).

[52] Russia is a possible exception to these restrictions. Russian companies control a significant proportion of world reserves and are closely associated with the state apparatus, whose autonomy of decision is ample. However, weak technological capabilities and, especially, financial constraints force these companies to develop different forms of agreements with foreign companies to exploit domestic resources. Russia is also the exporting region with less diversified exports, as 90 per cent of sales go to Europe. Moreover, although it is not an oil rentier economy, oil (and gas) export revenues are increasingly important. Mommer, 'The Governance of International Oil: The Changing Rules of the Games, *Oxford Institute for Energy Studies*, WPM, 26 (2000).

[53] NOCs from producing countries have 78 per cent of reserves and Russian companies 6 per cent, so that multinational corporations directly control 6 per cent and have access together with NOCs to another 10 per cent. Jaffe and Solingo, 'The International Oil Companies'.

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weak governments (in Africa, Central Asia, and Latin America), setting very good conditions for the exploitation of resources through oil equity agreements; but this factor also translates to great uncertainty for transnationals, which must always face the possibility that changes in political conditions may lead to dissolution. Over the last decade, the most important example of this uncertainty has been Kazakhstan, where the government forced a renegotiation of prior conditions with transnational companies. The strengthening of state political power, as well as alliances with Chinese and Russian firms, simultaneously weakened the position of Chevron, ENI, and other Western companies.

The governments of the major exporting countries (although with some nuances) maintain influence over their NOCs and control a large proportion of hard currency incomes. But at the same time they are very vulnerable, depending entirely on that income to perpetuate the rent-seeking game that enables their continued political domination. In addition, they are not free from military dependence on the US.[54]

The US government enjoys the important levers of military power and political influence in the Middle East and other producing countries, but its weaknesses are also clear. Oil imports have grown rapidly and now account for two thirds of domestic consumption. The production of US transnational companies in other countries contributes very little to reduction of that foreign dependence, because only a small part of production is directed to the US market.[55] At the same time, there are no public agencies responsible for negotiating trade agreements that can guarantee supply. Consequently, most large US oil purchases are made directly by private companies in open and very volatile markets.

East Asian governments, meanwhile, do have NOCs and public agencies to lead and reach institutional agreements with governments and NOCs from producing countries. However, even as China pursues its great international expansion, its political and economic ties in the Middle East remain very weak, despite an increasing need for imports. At the same time, although those governments remain under US military subordination, most oil exports are directed towards South and East Asia, especially Japan and South Korea, which have minor relevance in international politics but stable and extensive regional links with the Middle East.[56]

From a global perspective, the changes that have taken place in international oil relations may be associated with Strange's thesis (1996) on the general reordering of international relations through three central movements in the 'patterns of power'.[57] First, power has shifted away from the strongest players, whose positions have been weakened. In this respect, the most prominent case is found among Western European governments and the EU itself, whose influence is now minimal.[58] Second, power has also shifted sideways from states to markets, either (as in the case of Europe) because liberalisation and privatisation have given companies full control over oil relations, or because the transnational companies

[54] Baghat 'Energy Partnership'; Bronson, *Thicker than oil*; Waterbury and Richards, *A Political Economy*.
[55] Palazuelos, 'The Role of transnational Companies'.
[56] Ishida, 'Energy Strategies'; Palazuelos, *El petróleo*, cap. VI and X; Glada Lahn, 'Trends in Asian National Oil Company Investmant Abroad: An Update', *Working Paper Chatham House* (November, 2007).
[57] Strange, *The retreat of the State*.
[58] Kérébel and Keppler, *La Gouvernance Mondiale*; Palazuelos, *El petróleo*, cap. IV and V.

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have strengthened their own positions in Africa, the Caspian, and Latin America, or because some NOCs have gained certain autonomy from their governments. And thirdly, some power has 'evaporated', as no one is currently exercising it. The best evidence of this 'hole of non-authority' is the behaviour of oil prices over the last decade. Their exaggerated volatility has been influenced by certain objective trends in the oil market that are not determined by any major player; rather, most of time, price evolution has been determined by financial investors.

Conclusion: a polyhedral oil system

Contrary to regularities that require the dominance of certain players, scenarios, and mechanisms to guarantee the functioning of a stable system, the current oil system presents elements resembling an irregular polyhedron – a geometric form with varied polygonal facets, with the points of each plane projected onto others, forming heterogeneous figures. In other words, we are facing a complex oil reality with three basic features:

- *Ungovernability:* no player has a dominant position and none of the major players show a willingness to reach agreements on common criteria and standards of performance.
- *Asymmetry:* the different impact of each player on the various scenarios and mechanisms reveals a profusion of relationships and a great diversity of possible situations.
- *Instability:* many of these combinations could yield very different results if any of the elements comprising the PSM framework were to change position.

Thus, significant changes, whether political (regional tensions, refocusing of foreign policy by major countries), economic (expectations of cycle change, financial interests), or strictly related to oil (uncertainties in supply and demand) generate successive impacts on multiple players, scenarios, and mechanisms.

These three features allow the oil system to be classified as disordered or 'chaotic', if this term is used in its strict literal sense (that is, unpredictable due to a complexity of causal relationships), while the more dramatic meaning of this term, signifying bloody excess, does not correspond to existing conditions. Such a result would certainly become possible, were current tensions to lead to conflict or outright struggle, but at present this seems avoidable and unforeseeable in coming years.

Causes that could drive the current situation toward overflow would have two possible origins. One is internal to the oil system, related to a sharp and persistent supply deficit while demand continues to grow. This gap could foment clashes among leading players in the main scenarios, resulting in trade changes driven by political and military threats. The other potential source of overflow is exogenous to the oil system, deriving from political and/or business struggles that interfere with trade and alliances among oil players; or from terrorist actions across oil extraction zones or transit routes, conceivably strangling the oil supply. However, contrary to the scaremongering and anxiety of American Think Tanks and financial markets, which have addressed such hypotheses as imminent realities,

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analysis of current oil conditions leads one to the conclusion that, while possible, this frightening horizon remains highly unlikely.

The unpredictable evolution of the oil system is the greatest evidence of how knotted this oil (dis)order and international relations have become. Oil (dis)order is a key element of current international relations because such important issues are at stake: the need to guarantee a strategic commodity (by importing countries); the taking of economic and political advantage from possession of said commodity (by exporting countries); the need to obtain good business turnover (by both transnational companies and NOCs); and the increasing political and military force (by international state powers) needed to control so universally essential a resource as oil.

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