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## *The International Energy Forum and the Mitigation of Oil Market Risks*

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Oil and gas markets are once again at the forefront of international attention and home politics. The years of oil prices racing to hitherto unknown levels—close to US\$150 a barrel, which would have been called a crisis in former times—signaled to some the end of cheap oil and to others the end of oil itself. Since then the implosion of oil prices in the wake of financial turmoil has brought consumers some relief but has also raised some fundamental questions: What exactly happened to the oil market? More important, where were the tools to remedy signs of irrational volatility? What policies—if any—would have been feasible? And how can the sector (and its captive customers) avoid repetition of its boom-and-bust history?

Notwithstanding alarmist reviews in the press, most symptoms are quite normal in market-based environments, especially in resource commodities: some degree of price volatility, concern over sustainability of production levels, cobweb investment cycles, and so on. However, oil is at the center of the world's energy supply (ranking first, being some 35 percent of the world's primary energy supply); it is the

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source for the world's transportation sector and thus a strategic commodity. Actual and perceived supply disruptions present a political and macroeconomic threat: the sheer relevance of oil in current economies means that price volatility cannot be easily disregarded in policymaking. Further, the global oil market exhibits some rather odd characteristics even beyond the fact that the price is usually being targeted by cartel policy. Some of these aspects are inbuilt challenges to the world economy and are thus relevant for producers and consumers alike. Moreover, some of the recent developments can be addressed effectively only by a coordinated global community of policymakers, be it institutional or informal.

### The Need for a Global Energy Policy

Global energy policy has stayed surprisingly uninstitutionalized. Even though national or regional policies can mostly be dismissed as ineffective facing global oil markets, a coordinated international energy policy or a global institution or organization for energy has failed to materialize. Oil (and to some extent natural gas) had a history of nondialogue and perceived antagonistic interests for much of the last century, causing them to be a vacuum in international organizations.

The World Trade Organization (WTO) and its predecessor, the General Agreement on Tariffs and Trade (GATT), have tacitly circumvented the mention of oil and gas, based on a gentlemen's agreement among the founding fathers of GATT.<sup>1</sup> Consequently, WTO rules (with minor exceptions concerning recent claims on particular forms of product trades) do not apply to oil or gas and their trade. The International Energy Agency (IEA) has become a highly respected international energy body over the last decades, but its global reach is hampered by two facts: first, it represents the consumer side of the global energy balance only and excludes the world's largest producers of oil and gas.<sup>2</sup> And second, membership is restricted to OECD countries, excluding the rapidly emerging (Asian) consumers.<sup>3</sup> The European Union, as an international organization with an extraordinarily high degree of policy authority, has enacted far-reaching energy policy regulation; however, its reach is regional by definition. Last but not least, the UN is a truly global institution, but in fact competence for energy policy has never been transferred to it, and therefore it does not act.

1. Schorkopf (2007).

2. The IEA exceptions are Norway and Canada, which are net exporters.

3. BP (2008).

### *New Players*

In recent years the world oil market has been characterized by the arrival of massive new oil and gas consumers, mostly Asian. Institutions like the IEA have not been able to accommodate the newcomers, as these institutions are rooted in the past and are not equipped to adapt to a new dynamic. Consequently, the IEA as a consumers' body is facing a declining weight in the market; its member countries represented 75 percent of global oil demand in 1970; it was a mere 57 percent in 2008. China's share rose from 1 percent to almost 10 percent over the same period. The IEA itself predicts that its members' share will fall below 50 percent before 2015.<sup>4</sup> IEA demand-side policy obviously will suffer, as will the IEA's core emergency response mechanism of stock releases.

This development was paralleled by a reemergence of national oil companies (NOCs). Mostly based in non-IEA countries, NOCs' size, production capacity, capability, and especially their reserves have been noted by market analysts with some surprise. The notion of a new set of Seven Sisters was easily framed.<sup>5</sup>

Western institutions have not kept pace with either development. If they are to keep their weight and influence in the markets they will have to devise new frameworks that will accommodate these emerging players.

### *Low Level of Information*

The oil market is a truly global market, highly integrated across industry players, spot markets, nations, and continents. Hundreds of thousands of movements of oil are carried out every day, with millions of corresponding trades on the upstream and the downstream sides of the market.

However, there is a remarkably low level of information about the market in the real world. While the market for crude oil, its refineries, and associated products involves all 200 countries in the world, only 30 of them—the members of the IEA—provide timely data on the state of their oil markets.<sup>6</sup> All other information is based on estimations, which in most cases are educated guesses by bankers, industry traders, or journalists. While references to oil markets and the ubiquitous Brent and West Texas Intermediate marker prices are omnipresent on

4. International Energy Agency, *World Energy Outlook* (2008), p. 93.

5. Carola Hoyos, "The New Seven Sisters: Oil and Gas Giants Dwarf Western Rivals," *Financial Times*, March 11, 2007.

6. The IEA has twenty-eight member countries; however, all thirty OECD countries agree to data submissions.

newswires, the information cited is often based on such guesswork—an example of why visibility should not be mistaken for transparency.

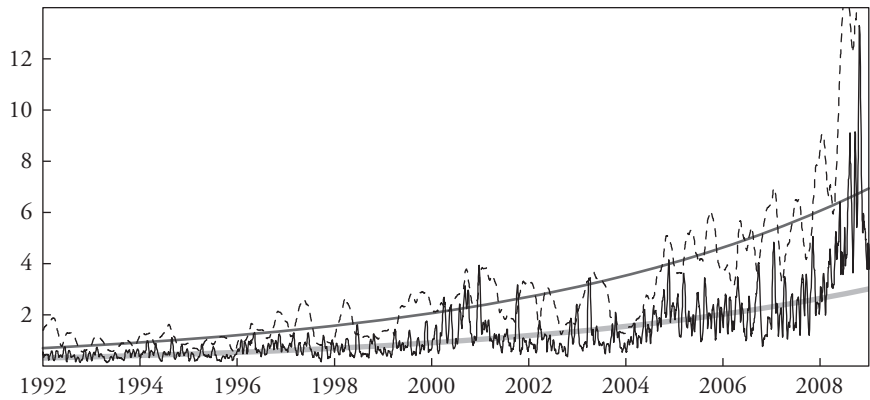
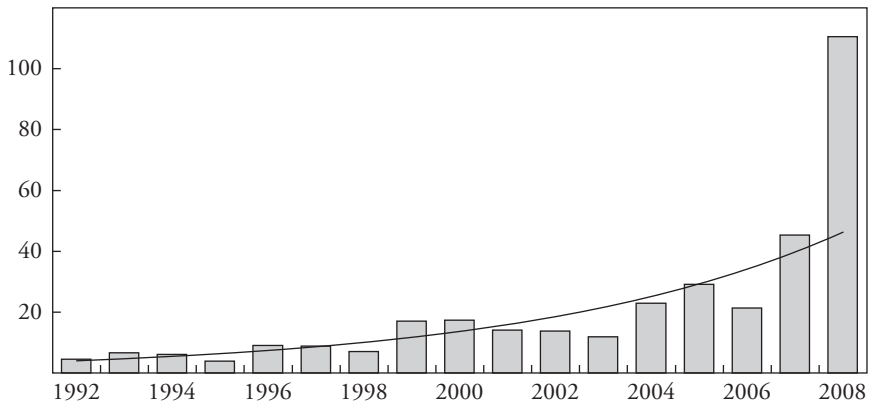
IEA members have signed a legally binding international agreement making data submission compulsory. Consequently, high-quality and timely information is available on the state of their oil markets (production, consumption, imports, exports, and stocks). Information about the rest of the market is, in contrast, difficult to pin down. It is difficult if not impossible to get hold of even the most basic data, including information about oil production and exports from Saudi Arabia, demand and stocks from China, and stock levels in India. An inquiry in these countries usually confronts one of two problems: either the information is classified (is considered of military or strategic national interest) or it is unavailable even to the central ministry itself.

Furthermore, information gathering is a painstaking and expensive occupation and unveils the unfortunate characteristics of a public good, namely that individual data collection only marginally improves transparency in the global market; and if everybody else collects data, the free-rider position of the non-collector is optimal. As a consequence, traders deal with the information they have, accurate or not, and quickly revise positions when new or other information becomes available. The prime consequence of this is price volatility, which by itself fosters a public perception that some kind of speculation must be at work.

### *Price Volatility*

Unfortunately, recent years have been characterized not only by historically high oil prices but also by increases in price volatility. Annual price variations moved from a band (price spread) of around US\$5 a barrel throughout the 1990s to some US\$100 a barrel in 2008, and the standard deviation of daily prices versus preceding months increased tremendously (figure 12-1). Intraday price spreads also exceeded all expectations, with variations easily exceeding US\$10 a barrel within just a few trading hours. While the mainstream media were happy to marvel at the resilience of the booming world economy to high oil prices during 2008, perhaps the real story lay in the long-term impact of extreme volatility and the mechanisms that allowed the phenomenon to flourish for so long.

Several factors were responsible for the structural volatility increase in recent years: the shrinking level of market information, the erosion of spare production capacity, tensions in the Middle East with the invasion of Iraq and the nuclear concerns over Iran, and last but not least, the massive influx of financial investors on the oil spot and paper markets.

Figure 12-1. *Oil Price Volatility and Absolute Price Spreads, 1992–2008<sup>a</sup>*US\$ barrel<sup>b</sup>

Source: www.platts.com; BP.

a. Oil price volatility measured as the standard deviation of daily Brent prices to moving average of trailing 1 and 6 months periods.

b. Maximum annual price difference, Brent's daily closings.

These last do not participate in the physical oil industry (thus the term *non-commercials*) but have discovered the oil market as an investment vehicle.<sup>7</sup> Their arrival was further propelled by the fact that commodity exchanges around the

7. While in the past the oil market was regarded as a hedge against stock markets (which used to move in the opposite direction), the new millennium has shown concurrent upward trends in both equity and oil price, with the oil market offering great returns with an ever-increasing price.

world decided to move to electronic trading systems and to grant access to trading over the Internet. This was first and prominently done by the London ICE, which abandoned floor trading in April 2005. The ICE was followed by NYMEX, which reduced its floor trading hours.<sup>8</sup> Trading in oil futures was thus facilitated, with the result that the paper market for oil soared to several hundred billion U.S. dollars.<sup>9</sup> Much obvious blame-gaming ensued, as both OPEC producers and consumer governments attempted to quantify and justify the influence exerted by these new players (often dismissed as speculators).<sup>10</sup> However, whether much of the price or volatility increase can really be blamed on these financial investors has never been finally proven.

Fundamentally, price volatility is of concern, as it inflicts macroeconomic costs on both consumers and producers. This is due to the fact that volatility alters the system of relative prices to which market participants have to adjust, causing macroeconomic transition costs. For consumer nations it means costly changes in their consumption patterns, as different factor costs may change the optimal investment portfolio (for industrial users), or new, energy-efficient capital goods need to be bought (by individuals). For producer nations it means that oil-dependent state budgets have unpredictable revenues and are bound to bounce between surpluses and deficits, causing the damaging effect of procyclical fiscal policy. Another key consideration is the uncertainty that volatility brings into investment planning, thus delaying upstream projects—a fact that itself may increase volatility. From a purely macroeconomic point of view, volatility is thus worse than a high (but stable) oil price, which would ultimately be absorbed by the system.<sup>11</sup>

### *Spare Capacity and Supply Security*

Spare capacity is a rather peculiar concept: production capacity is built (platforms are constructed and bore holes drilled) only to be left idle.<sup>12</sup> Neither in economic

8. Evidence is emerging that this in itself has increased oil price volatility. Liao, Lee, and Suen (2008).

9. Index funds investments in commodities are estimated to have risen from US\$13 billion to US\$260 billion between 2003 and 2008. "Double, Double, Oil and Trouble," *The Economist*, May 28, 2008.

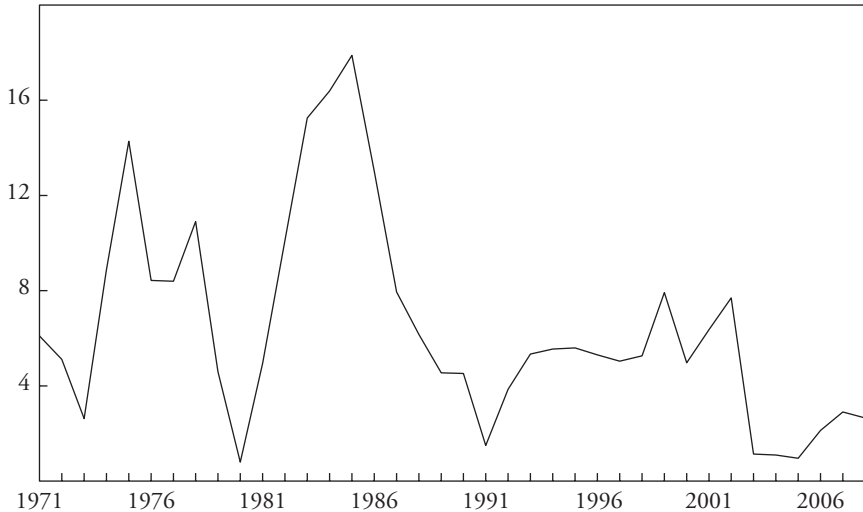
10. See for example the OPEC bulletin of March 2008 ([www.opec.org/library/OPEC%20Bulletin/2008/pdf/OB03\\_042008.pdf](http://www.opec.org/library/OPEC%20Bulletin/2008/pdf/OB03_042008.pdf)); and the U.S. Senate investigation into this matter (<http://levin.senate.gov/newsroom/supporting/2006/PSI.gasandoilspec.062606.pdf>).

11. For macroeconomic studies on oil price changes, see Ferderer (1996).

12. Spare production capacity is usually defined as capacity that can be brought onstream within thirty days and remain sustainable for at least ninety days. International Energy Agency, *Oil Market Report, Annual Supplement* (2008).

Figure 12-2. *Spare Capacity in Oil Production, 1971–2008*

Percent of world population



Source: International Energy Agency, *Oil Market Report* (2002–08); Stevens (2008); author's estimates.

theory nor in the real world does such capacity exist in most commodity markets, since it contradicts a shareholder value approach. The oil market is the one exception: OPEC countries do hold such spare capacity as a result of historic investment decisions compounded with cartel production quota and oil price targets (figure 12-2).

Spare production capacity in the oil market has proven to be the most important single asset for the world's supply security. Every time a supply disruption has occurred, the shortfall was covered by ramping up production from spare fields. Examples include the following supply disruptions: in Venezuela during the strikes in December 2002 to January 2003 (the third-biggest oil producer basically stopped producing); during the invasion of Iraq in March 2003 (the fourth-biggest oil producer was disrupted for several months); and during the Iraqi invasion of Kuwait in 1990. The response to each of these disruptions was to call on spare capacity. Consequently, the main tool for consumers' oil supply security is in the hands of and paid for by producer countries, quite a peculiar political situation.

At the same time, traders know the relevance of spare capacity: its magnitude is widely reported and its ability to respond to physical supply disruption widely accepted. Market psychology factors a so-called risk premium into the oil price, a

premium dependent on traders' perception of the volume and availability of spare capacity. The extreme lows of spare capacity between 2003 and 2008 made a substantive risk premium probable and go some way toward explaining increased volatility.

Unfortunately for security of supply, spare capacity has been disappearing in recent years. The reasons for this include the Asian demand boom, the supply disruptions of the Venezuelan strike in December 2002, and the invasion of Iraq in March 2003, compounded by producer country reluctance to invest in the face of repeated political calls for a move to alternative fuels. The world has become aware of the dilemma of calling for spare capacity and for fossil (oil) demand reductions at the same time.

The beginning of a global recession in fall 2008 changed the above equation. The market is now faced with the prospect of spare capacity of around 7 million to 8 million barrels a day.<sup>13</sup> On the face of it, the world is where it wants to be, but it arrived here by default, not design. The risk is that if comfort turns into complacency and the issue of spare capacity is not an ongoing topic of discussion between producers and consumers, the next cyclical upturn will erase the cushion once again.

### *Oil Production and the Western Plateau*

The so-called end of oil has been part of the public debate since petroleum was first produced in the nineteenth century. This debate was prominently reignited in recent years, with a focus on the imminence of peak oil.<sup>14</sup> However, most market observers do not believe in the mirage of geological peak oil but are concerned more about the above-ground factors of oil production. Oil production growth is mainly dependent on upstream investment, the attraction of capital, access to acreage, optimal extraction paths in oil-rich nations, and political stability.

While the fact that physical oil will not easily run out may be taken as comforting, a close look at market realities makes clear that most remaining conventional oil reserves are concentrated in a few countries in OPEC and the former Soviet Union. To look at it another way: oil supply outside the countries of OPEC and the countries of the former Soviet Union is reaching its plateau, even when one

13. This level was predicted by Daniel Yergin, chairman of CERA, in a 2008 report. It is quoted here from Energy Intelligence Group, "What's New around the World?" *Petroleum Intelligence Weekly*, January 5, 2009.

14. Peak oil is considered to be a point after which oil production will decline. For more information and background on this theory, see its most important propagator, the Association of Peak Oil ([www.peakoil.net/publications/peer-reviewed-articles](http://www.peakoil.net/publications/peer-reviewed-articles)).

Table 12-1. *World Oil Production to 2030*

Millions of barrels a day

<i>World Energy Outlook 2008</i>		
	2007	2030
Former Soviet Union and OPEC	48.8	69.5
Rest of world <sup>a</sup>	35.5	36.9
Total	84.3	106.4
<i>World Energy Outlook 2002</i>		
	2000	2030
Former Soviet Union and OPEC	36.8	79.8
Rest of world	37.1	30.3
Nonconventional	1.1	9.9
Total	75.0	120.0

Source: International Energy Agency, *World Energy Outlook* (2002, p. 96; 2008, p. 103).

a. Rest-of-world production now includes both nonconventional fuels and biofuels.

includes optimistic scenarios for biofuels and nonconventional supplies. The IEA has been projecting this plateau for a number of years (table 12-1), however, without drawing too much attention to it.

With oil production plateauing in consumer regions—and unlike in the 1970s, with no new North Sea to be found—to avoid a supply crunch producers and consumers must enter into constructive discussions either about access to resources or (if more appropriate) about IOC and NOC investment plans.

### *Beyond the Cobweb*

Economic theory suggests that commodities for which production capacity follows investment decisions with a (considerable) time lag have a tendency to show boom-bust investment cycles. This reflects the fact that investment decisions are based on the supply, demand, and price experiences of the past. Textbooks call this phenomenon the cobweb, of which resource commodities (copper, wheat, nickel, and so on) are excellent examples, as they have considerable time lags in production and huge swings in prices.

Oil markets share many of these characteristics: the time lag for an upstream project usually takes eight to ten years from planning to commercial oil, and thus investors must make hard calls on their price expectations one decade down the road.<sup>15</sup> This time lag makes oil prices all the more volatile, as even small extensions of capacity are nearly impossible in the short term (a price elasticity of

15. Costs are enormous; in 2008 they mostly ranged from US\$20 billion to US\$30 billion for production capacity of half a million barrels a day. International Energy Agency, *World Energy Outlook* (2008), p. 312.

production close to zero): hence, again, the paramount relevance of timely and sufficient upstream investment in oil markets.<sup>16</sup>

Recent history is exemplified by misplaced projections and expectations. A good example of this is the fact that no investment planning predicted the oil demand boom of emerging Asia during 2003–08, which fueled a historic seven-fold price increase through inelastic supply.<sup>17</sup> And no one, obviously, saw the crash coming. The financial crisis and global recession in the second half of 2008 put investments in a difficult position, so that it is no surprise that projected capital expenditures on upstream projects are being curtailed or that capital expenditure plans for 2009 were slashed industrywide. While this may seem appropriate and unavoidable in current times, this behavior bears a risk for future supply and demand balances, as low investment now may mean another round of price spikes a few years down the road.<sup>18</sup> Transparency among producer and consumer nations about investment planning of market participants is therefore crucial.

## A Global Response: The International Energy Forum

Many of the problems intrinsic to the oil market stem from the fact that it is a global market, and thus policymaking needs a global response. No institutions or organizations can make this global response because those that exist have no real clout or are burdened by preconceptions of allegiance and thus lack the necessary trust.

However, the emergence of the International Energy Forum (IEF) can rightly be called a successful change of course. This forum was first convened in the wake of the 1991 Gulf War, when the need for international cooperation on the global oil market once again came into sharp focus. A conference to include the world's top producers and consumers of oil and gas was called at the ministerial level and has been meeting biennially ever since. Today, conferences are preceded by a business forum for senior executives of leading companies in the oil and gas sector and related industries.<sup>19</sup> Discussions are still informal, and the agenda does not follow a formal procedure.

16. See the excellent analysis by Stevens (2008).

17. Low investment is also a consequence of a decade of extremely low oil prices, down peaking as recently as 1998 to below US\$10 a barrel Brent.

18. For warnings about such a supply crunch, see International Energy Agency, *World Energy Outlook* (2008), p. 303.

19. In the May 2008 meeting in Rome, some fifty ministers, thirteen international organizations, and more than thirty top industry executives joined discussions.

In 2003, following an initiative by Crown Prince Abdullah of Saudi Arabia (motivated by the painful experiences of the 1998 oil price collapse), the IEF was organizationally strengthened by the inauguration of a permanent secretariat in Riyadh. The secretariat facilitates continuity of the dialogue between the regular biennial meetings, structuring the debate and coordinating topic proposals.

While organizationally still in its infancy, the IEF is unique in its convening power. Participation in the forum is open to all countries (its executive board currently counts Russia, China, and India among its members). All major oil market nations have been participating in the discussions in recent years. The otherwise usual dichotomy between IEA and OPEC members does not exist, and any issue can be brought forward.

The fact that the IEF was not set up as a full-fledged international organization bound by treaty, and thus has no binding decision authority, could easily be criticized. But it was intentionally set up below the level of an international organization, as it was clear that it would have been difficult to gather the support of all players behind a binding agreement and that important out-of-the-box discussions would have been difficult. It is, finally, this very lack of organizational structure that has proven to be the true strength of the IEF: the dialogue has initiated the end of producer-consumer antagonism, and the informality allows all issues to be discussed. Consequently, the goal of IEF meetings has not been to reach formal decisions but rather to foster a mutual understanding of oil market issues, usually summarized in a statement by the host.

### *Recent Meetings and Milestones*

In 2008, after witnessing the turbulence in the oil market and prices moving into hitherto uncharted territory, the producer-consumer dialogue moved to center stage in order to find causes and remedies for the unhealthy market development. Three IEF meetings followed, starting off with the regular biennial ministerial meeting in Rome.

#### ROME, APRIL 2008

The agenda for the IEF April meeting in Rome was structured around four main issues: sustainability, affordability and price volatility, deliverability and investments, and availability.<sup>20</sup> However, the price of oil had reached US\$110 a barrel just a few days before, and so the price level and its cause were the central (and somewhat thorny) issues of the meeting.

20. Hulst (2008).

Unfortunately, though, producers and consumers were far from reaching a consensus on why the price had risen and even further from any decision on a plan of action. Consumers blamed the price rise on tight supplies (that is, on the producers), while producers mainly blamed it on speculation (mostly rooted on trading floors in consumer nations) and on minor causes like the collapse of the U.S. dollar and tight refineries. The finger-pointing, obviously, was not yielding any tangible solution. As one former OPEC minister put it: "It [the price] brings the parties together, but it also shows how they differ."<sup>21</sup>

JEDDAH, JUNE 2008

Apparently, with a booming world economy, the collective sense of urgency was not yet high enough. That changed just two months later, when Brent passed US\$135 a barrel and Saudi Arabia urgently convened an IEF meeting in Jeddah.<sup>22</sup> The price of oil was now so high that even skeptics had to acknowledge the threat of severe macroeconomic impacts and long-lasting demand destruction. Protests about fuel prices, food prices, and shortages raised international pressure to extremes.

As a result, Saudi Arabia, the biggest oil producer and most influential OPEC member, steered the discussion toward production capacity and upstream investment. It then made the surprise announcement of a detailed capacity extension plan to raise the ceiling on its national oil production to 15 million barrels a day. This announcement, admittedly conditioned upon signs that the market would need such capacities, was welcomed by the consumers and added to the general sentiment that the debate had taken a more long-term and constructive view about oil market challenges.

The sense of producers and consumers being in the same boat was palpable in Jeddah, so much that it was possible to find enough common ground to issue a joint statement. Saudi Arabia, the host of the meeting, and the secretariats of the IEA, the IEF, and OPEC mention hitherto thorny issues: the importance of spare capacity for the stability of the market, the need for regulation of financial markets (and their investors in the oil market), a call for IEA-OPEC "immediate collaboration" on a shared oil market analysis, and even the promotion of energy

21. Cited in Schaik (2008).

22. Strictly speaking, the Jeddah meeting and the following London meeting were not IEF meetings. However, they were direct sequels of the producer-consumer dialogue within the forum, and participants were mostly identical.

efficiency.<sup>23</sup> Such a statement would not have been thought possible before Jed-dah, and it was a huge step toward the realization of urgency and also trust in the dialogue.

LONDON, DECEMBER 2008

At the time of the third meeting, in London in December, the price of a barrel of oil had collapsed to US\$39, the financial crisis had caused bankruptcy throughout the world, oil demand had plummeted, and the impact of the downturn on investment and thus midterm supply was looking disastrous. Again, a sense of urgency made participants agree to take the forum idea one step further, and it was agreed that a high-level expert group would be formed to make proposals for strengthening the institutional architecture of the IEF.<sup>24</sup>

The results and recommendations of this group are to be presented to the next IEF ministerial meeting, which is to be hosted in Mexico in 2010 (with co-hosts Germany and Kuwait). Judging from past experience in setting up organizations with perceived antagonistic parties, expectations ought not to be set too high. However, the current turmoil in financial markets, the economic havoc it has brought, and the hard-earned lessons of oil price volatility may spur common interest in an institutionalized global oil market framework.

### *Market Transparency*

Currently, the most tangible outcome of cooperation in the IEF structure has been the Joint Oil Data Initiative (JODI).<sup>25</sup> This initiative, which was transferred to the IEF secretariat in 2003, aims to tackle the problem of lack of transparency in the oil market. Seven international organizations, coordinated by the IEF, are collaborating to collect data from their member countries (which are responsible for 90 percent of world oil supply and demand). The data themselves are limited, but they are up to date (due to monthly submissions) and contain information that does not exist elsewhere. The data have been made public (on a website) in order to get critical appraisal and to prove their accuracy to the industry and trade community.

23. See Al-Attayah and Bin Hamad, "Ultimate Goal Is Full Transparency of Agendas 2008" ([www2.iefs.org.sa/Ministers/Pages/UltimateGoalisFullTransparencyofAgendas.aspx](http://www2.iefs.org.sa/Ministers/Pages/UltimateGoalisFullTransparencyofAgendas.aspx)).

24. The chairman's final report mentions that meeting participants called the formation of this group "a matter of urgency" ([www.meti.go.jp/english/press/data/pdf/081219EnergyMeeting.pdf](http://www.meti.go.jp/english/press/data/pdf/081219EnergyMeeting.pdf)).

25. Joint Oil Data Initiative (2008).

Notwithstanding technical problems with data quality and comparability, JODI is the first publication to shed light on the otherwise dark side of the oil market—and is a huge success in itself. It will take time for the market to appraise the data, but this initiative may become an authoritative part of market information. Thus the volatility caused by absence of information is bound to diminish, and the Joint Oil Data Initiative may prove to be a major step toward lowering the macroeconomic cost of the oil market for both consumers and producers.

## The Way Forward: Recommendations

The structural challenges the oil market confronts today requires a global policy response. Specifically, what could be changed in order to arrive at an appropriate policy response to the risks of market exuberance or crisis-like disruptions? Three actions are recommended: to recognize the paramount role of investment, to increase transparency, and to supply infrastructure

### *The Role of Investment*

While the boom and busts since 1998 should be proof enough that a balance between supply and demand is difficult to attain, the current global recession puts even more brakes on investment decisions. Several factors contribute to this very difficult environment:

- The oil price collapse makes the future range of oil prices uncertain.
- The slumping world GDP in 2009 leaves future recovery unclear in timing and size.
- The price elasticity of demand has surprised analysts. U.S. demand reduction, for example, was more than a million barrels a day in 2008.
- The credit freeze adds yet another dimension and is compounded by squeezed cash flows due to the sharp decline in oil prices.

A structured dialogue is necessary, a dialogue revolving around several fundamental aspects: harmonize the understanding and view of the market future, increase transparency on investment plans, frankly debate depletion paths, and stimulate spare capacity.

### HARMONIZE MARKET UNDERSTANDING AND REDUCE MIDTERM VOLATILITY

One measure to reduce the boom-bust swings in the oil market is to engage all relevant producers and consumers in a constructive and intensive discussion about their respective mid- to long-term market projections. If producers and consumers

seek a mutual understanding of one another's perspectives, supply and demand in future market conditions can be more easily anticipated and thus balanced. Investment needs appear more obvious, and the understandable need for supply security and demand security could be met.

The importance of such an approach is recognized by IEF participants.<sup>26</sup> However, achieving this is by no means an easy task. Any balancing of supply and demand intrinsically means raising the thorny issue of price. Nevertheless, recent years and months have witnessed booms and busts that have been extraordinarily harmful to both producers and consumers, and the 2008 meetings show that a mutual understanding of detrimental price and volatility levels does exist.

#### TRANSPARENCY ON INVESTMENT PLANS

Investment planning by market participants is fundamental to future market development. From a microperspective, an investor must make a judgment as to how much investment is being made by the rest of the market and as to when that oil is coming to the market compared to the date when first oil from his own project is expected. From a macroeconomic perspective, producers and consumers need knowledge about current investment planning if they are to discuss future market developments.

In this respect, the IEF London meeting brought an interesting idea to the table: to collect investment planning information from participating countries (in fact from international and national oil companies) via a questionnaire, the results of which would be published.<sup>27</sup> While the intention is commendable, realizing it will not be easy: it will demand relatively high accuracy (the marginal barrel sets the price) and also that companies reveal relatively sensitive information. But the push is in the right direction.

#### OPEN DEBATE ON DEPLETION PATHS

The oil market's most peculiar aspect is that, unlike most other commodity markets, long-term global resource depletion does not follow textbook optimization based on market conditions only.<sup>28</sup> Rather, the resource base is divided into

26. Hulst (2008).

27. "UK Chair's Report," London Energy Meeting, 2008 ([www.meti.go.jp/english/press/data/pdf/081219EnergyMeeting.pdf](http://www.meti.go.jp/english/press/data/pdf/081219EnergyMeeting.pdf)).

28. Oil does not follow Hotelling's model of resource depletion over time. The best example is the counterintuitive fact that the most expensive oils get extracted first and not last (when depletion would force increasing marginal cost ventures).

nations, each of which legitimately follows its own optimal (or sometimes legacy) depletion path.<sup>29</sup> The sum of these paths may not coincide with what would be a global optimum. The result is a price that is higher than it would be in the hypothetical scenario of a totally open market. This basic thought makes clear that national depletion policies have in fact been the crucial driver for market fundamentals over the last decades.<sup>30</sup>

The same relevance is currently accruing to the consumption paths of consumer nations. Although they have for decades depended on oil prices and economic growth, consumption paths have recently moved away from this trend: most OECD consumer nations are vocally and sometimes effectively gearing national policies toward reduction of oil consumption, independent of its price level, as concerns about climate change rise.

Hence both fundamentals of the oil market balance—consumption paths and depletion paths—will in fact be decided upon in the political realm. Consumers need supply security, producers need demand security (or otherwise they have no incentive to invest in needed production capacity). Scenarios need to be developed for a common approach to this two-sided issue; common ground needs to be found. Alarmist warnings or criticisms are of no help. Technologies for combating climate change will certainly allow continuing use of hydrocarbons. Depletion paths will be altered, but it is to be hoped that this will be done with the help of a better understanding of the consumer side of the equation. This is one of the IEF's most difficult but important agenda items.

#### STIMULATE SPARE CAPACITY

Spare capacity has proven to be the prime tool for energy security over the last decades. It nearly vanished between 2003 and 2008 only to reemerge with the recent recession. A more rational approach is needed, one that concerns not only the comfort zone of sufficient capacity but more important the peculiar fact that producer nations alone are effectively holding the safety cushion of the entire oil market. This lopsided balance merits a structured discussion on how producer

29. Depletion paths may depend on social, political, or institutional factors (of the state or the NOC); on parameters of national economic size and system setup; and on interest rate, price expectations, and time preference.

30. The issue of access to reserves does, in fact, lose its traction. From a global perspective on the market, the real question is not who gets access to the reserves but whether whoever has access to these reserves optimizes his depletion path according to market conditions or according to other considerations (political, social, developmental, curse avoidance, and so on).

(OPEC) nations can be incentivized to hold spare capacity. Unfortunately, self-interest does not seem to work.<sup>31</sup>

Out-of-the-box thinking and debate among producers and consumers might yield results. One such unconventional line of thought is the proposal to incentivize OPEC nations by giving spare capacity first priority over stock release by consumers during a supply disruption.<sup>32</sup> That would allow producers to shave off the price peaks and thus reap the maximum benefit for amortizing their capacity investments. One major uncertainty hampering producer investment is that the business case for spare capacity is severely weakened by the existence of consumer nations' emergency stocks.

However probable or politically possible this proposal may seem (it would entail making producer countries sit with consumer nations during IEA decision-making on emergency responses), it is an example of the way that further dialogue about spare capacity may bring results. It should be borne in mind that producers and consumers formulated a common call for comfortable levels of spare capacity for the first time at the Jeddah summit.

### *Transparency*

Two ways to increase transparency are to improve and extend JODI and to address the problem of data inconsistency and lack of comparability across organizations.

#### JOINT OIL DATA INITIATIVE

As mentioned, JODI is an important tangible result of IEF cooperation. Unfortunately, though, the initiative has suffered difficulties with data collection, especially on some of its crucial data points like industry oil stocks. IEA countries publish such data on government and industry stockholdings on a monthly, some even on a weekly, basis. However, in many relevant countries information on oil stocks is considered a matter of national security (as they are of strategic importance for military planning). And bureaucracies tend to be slow (giving the data a mere historical value) or to prohibit declassification outright. Oil stocks, clearly

31. Some debate revolves around the question of whether spare capacity is a rational business for OPEC countries. That is, has it generated huge gains when releases occur during disruptions and price spikes? The answer is in doubt. What is apparent is that, if it were true over the lifetime of an investment, then spare capacity would exist under market conditions (that is, in non-OPEC countries), and it does not.

32. Stevens (2008).

the most market-moving information, is still unavailable for many countries. (They are a sort of thermometer, taking the temperature of the national oil market.) Further cooperation and information sharing may bring results as well as the funding and training of national statistical administrations and capacity building of local staff.

In addition, current data collection is restricted to oil. However, the emergence of a global natural gas market will make collection of information on liquified natural gas (LNG) shipments, trade, and production equally important. Again, as the IEF is the only forum in the world with the membership of all major producers and consumers, it is perfectly suited to extend its vision to the natural gas market. Much of the analysis of this chapter will, rather sooner than later, be relevant to the gas market. Today most transnational natural gas trades are done via pipelines, but projections see the share of LNG in world natural gas trade rise to 70 percent by 2030.<sup>33</sup>

#### DATA CONSISTENCY, COMPREHENSION, AND COMPARABILITY

By the same token, producers and consumers ought to sit down together and arrive at an understanding about differences in methodology and data. A barrel is not always a barrel in IEA and OPEC publications. Consequently, future scenarios of market development are difficult to compare. While much of the basic number work has improved considerably with JODI data, more work needs to be done. It seems especially important to take the next step and work out the differences in approach between the *World Energy Outlook* (IEA) and the *World Oil Outlook* (OPEC). This will require discussions about nonpublished methodologies and may not yield identical projections; however, it will clarify the differences and increase an understanding (instead of mistrust) of incompatible projections. As this endeavor demands some tricky number crunching, no improvements will be achieved in the short run. But understanding the global energy landscape's representation in data should be at the core of cooperation.

#### *Supply Security and Infrastructure*

Maybe the most important point of concern and risk is the huge and increasing portion of world oil that needs to transit the Strait of Hormuz. Some 17 million barrels a day pass through this strait, an amount projected to increase to more than

33. International Energy Agency, *World Energy Outlook* (2008), p. 121.

24 million barrels a day by 2030.<sup>34</sup> This being roughly a third of total interregional oil trade, the world's supply security hinges upon uninterrupted flows through the Strait of Hormuz. This strait, however, is known among energy and military experts as the ultimate world choke point: shipping lanes are just three kilometers wide, disputed islands lie in the midst of the strait, basically no alternative routes exist, the sheer size of the oil has no alternative sources, and geopolitical tensions have existed in the Middle East for a century.<sup>35</sup>

Producers and consumers at the IEF should address the possibility of creating alternative export routes. One such alternative currently operating is the East-West pipeline through Saudi Arabia, running from Abqaiq on the Persian Gulf to the port of Yanbu on the Red Sea. This pipeline has a capacity of 5 million barrels a day.<sup>36</sup>

Installing and maintaining alternative or spare infrastructure involves costs of significant scale, but at the same time their benefit accrues to all participants in the market.<sup>37</sup> It seems that a discussion of security-sensitive infrastructure is a perfect example of a public good that could be at the heart of consumer-producer cooperation within the IEF dialogue. It is true that at the end of the day financing will be a heated discussion topic. However, infrastructure that increases supply security (and traders' tranquility) is insurance for all, independent of where the pipelines will ultimately be lying.

## Outlook

The current state of the oil market makes any predictions about as reliable as those from a crystal ball. Admittedly the main risk to a significant improvement of the institutional setup and the agenda setting of the IEF stems, perversely, from an oil price implosion. History tells us that consumer nations tend to forget about the oil market and its pending economic dangers and tend to revert to their prior

34. International Energy Agency, *World Energy Outlook* (2008), p. 106. This number, although huge, is a rather conservative estimate compared to prior IEA projections; see International Energy Agency, *World Energy Outlook* (2004), p. 119.

35. For more information on choke points, see Lehman Brothers (2008).

36. There are other routes for oil exports circumventing Hormuz (such as the TAP through Saudi Arabia and Iraq's export pipes through Turkey and Saudi Arabia), but they all operate under difficulties or are actually mothballed.

37. The East-West pipeline currently operates at only half its capacity, as international loadings off Yanbu are immaterial (low demand due to longer shipping times to Asian consumers), a fact that increases its total lifetime costs. Harks (2007).

low-price mentality and consumption patterns. At the same time, producers are suffering hard times, with OPEC refocusing on itself and aiming toward strengthening cartel policy. Consumers and producers could again become oblivious of the need for mid- to long-term cooperation, and the perception of a crisis would vanish at least from the consumer nations' view. Short-termism would reduce most impetus for institutional reform.

That would be the flawed way forward. But that need not be; and the price collapse to below US\$40 a barrel has (such is the current impression) made consumers and producers even more aware of a need to cooperate on the fundamentals of the oil market. The IEA (and also the IEF) have been warning that the price implosion may bring investment delays, which in turn may simply delay the coming oil crunch.<sup>38</sup>

Viewing the IEF as an organizational setup, it is hard not to see the progress achieved in recent years. Dialogue is maturing on content and organization, largely witnessed by its recent branching out into substantive topic events covering much of the current international energy topics.<sup>39</sup> Events in 2008—consecutive meetings in Rome, Jeddah, and London—show how well producers and consumers understand that they are in the same boat. Further, data collection has improved, and the extension of JODI toward collecting annual gas data (not monthly; however, it's a start) is planned to begin sometime soon. Most important in all this activity, the IEF has managed to keep its reputation as a truly neutral broker, with developing oil producers and industrial energy consumers trusting in its work.

True, when it comes down to details the idea of cooperation needs regular reinforcement. That is, both sides will need self-interested incentives for any future commitment. Events in 2008 with their market exuberance made that rather easy; however, the future is not quite that certain. Other incentives may be, for example, long-term transparency of the market balance and consistently understanding one another's data and methodology. The inclusion of spare capacity in the stock draw mechanism is one example of a dialogue yielding results even on thorny financing issues.

38. International Energy Agency, *Oil Market Report* (2008), p. 104.

39. Among others there have been an International Energy Forum–International Gas Union in November 2008, an International Energy Forum–IFP Technology Forum in December 2008, and an IOC-NOC forum hosted by the International Energy Forum and the government of Kuwait in March 2009 ([www.iefs.org.sa](http://www.iefs.org.sa)).

Signs sent by the last London IEF meeting were highly encouraging. Participating countries were daunted by the recession taking shape, and a sense of urgency for cooperation prevailed. The most significant sign was the agreement that an examination of the institutional architecture of the energy dialogue in the IEF was necessary. A high-level steering group (consisting of Saudi Arabia, the United Kingdom, Algeria, France, Germany, Japan, Kuwait, Mexico, Qatar, and the United States) was established to select an “expert group” that will hopefully make institutional proposals to propel cooperation a necessary step ahead.

No real alternative is at hand: it is good news that producers and consumers speak to each other on mostly good terms in a mutually beneficial manner. And no alternative institution or forum encompassing all necessary actors is in sight or of any pragmatic probability. The IEF secretariat is an excellent first step and should be fostered, not undermined, by concurrent proposals.

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