1 The World Crude Oil Paradoxes

For some years now, the price of oil has been out of control. None of the great names of the industry, the production cycle or the oil market is able to intervene to decide its level or guide its progress. The oil companies, the OPEC producing countries as well as the non-OPEC, the consuming countries, the consumers: not one of these has this capability.

The price of oil, in the imagination of western consumers, is still linked to the equilibrium developed during the 1970s and 1980s, with the emerging of the Persian Gulf countries and the OPEC nations.

It is still a popular belief that the cartel of the largest oil producing countries in the world is capable of regulating the volume of production and using this key raw material to achieve political aims.

Even today, when the price of oil rises beyond any level considered critical, the vast majority of the oil market analysts turn their eyes towards Vienna, where the oil ministers of the OPEC countries meet, imagining, hoping for and analysing decisions which either will not be taken or, if taken, will turn out to be completely ineffective. Lately, in some market reports, more sophisticated analyses are merely focused on the availability of OPEC countries' spare capacity; linking to this factor the dynamics of the oil price. When we look at the graph of the price of crude oil in Figure 1.1 we do not see the result of market forces, but rather a design traced by the hand of a powerful invisible architect who, following his own purposes, has established a course along which the price of oil should travel.

Since the end of 1998 analysts, oil companies and producing countries have mistaken every forecast of the price of oil, clearly showing not only that they no longer control the fundamental market mechanisms, but that they are not even able to comprehend its real dynamics – it is as if the invisible architect had lost his pencil.

If we take our memory back to December 1998, when the price of crude oil fell to $9 per barrel, all the respected names of the oil industry, bar none, forecast that the price would stay for at least one or two decades under $15 per barrel. It is enough to glance at the investment budgets of all the oil companies or the financial programmes of the producing

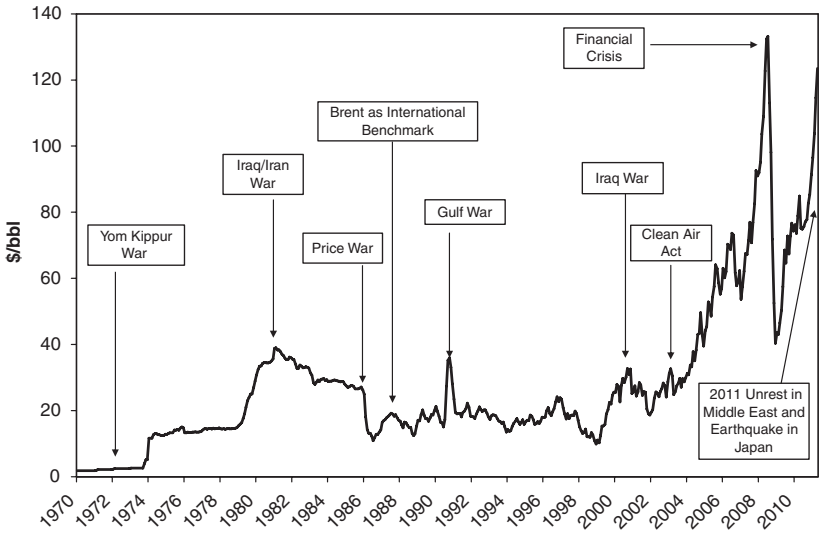

Figure 1.1 Brent Dated 1970–2010 and main historical events

countries to confirm that only the most optimistic among them estimated maximum price levels between $14 and $15 per barrel in the long run. Some oil companies, based on this view, hedged their production at this level of prices and went bankrupt. Yet only a few months later, in the summer of 2000, the price had already reached $35 per barrel, taking everyone – market analysts, oil companies, producing countries, economists, politicians and consumers – by surprise. Rivers of ink were consumed to explain the nature of this event through analysis where the causes were sought in transient factors; a sudden storm, nervousness between two OPEC countries, political uncertainties and so on.

The years of the energy crises were far away and deeply buried in the collective subconscious. The reappearance of such a thorny question was regarded, before it raised any anxiety, as almost a nuisance. Still today, after a decade of price hikes for crude from $9 to more than $140 and then down to $37 and once again above $120 per barrel, most people limit themselves to reciting a series of clichés to try to find justifications for an incomprehensible phenomenon:

- Limited supply from the producing countries, apparently inadequate to satisfy the growing demand for oil.
- Unexpected growth in the demand for oil by China and India, apparently upsetting the stability of the oil market.

- Tensions in the Middle East.
- The prospect of a decrease in the crude reserves/crude production ratio and therefore the availability of spare capacity.
- The excessive taxes on petroleum products (gasoline, diesel, LPG etc.) imposed by European governments.

This type of analysis has the advantage of being simple and easily presentable to the public at large, without, however, explaining what has really happened or is happening. Nevertheless, this approach has enabled some commentators to exaggerate on the contentious issues regarding the excessive power of the OPEC countries and the ways to bring them to reason.

The problem which all serious analysts have to face up to is actually quite simple. The essence is to explain oil price movements by use of the classic model of economics, which assumes that price is a function of the relationship between demand and supply:

$$\text{Price} = \text{f (demand, supply)}$$

This principle of economics seems too valid to allow any space for querying it. Notwithstanding this, the fundamental classic method applied *tout-court* to the oil market does not work. Yes, it is correct to say that the price is linked to the supply and demand balance, but of which good? We need to find out the merchandise or commodity whose supply and demand is determining the dynamics of oil price. For sure, it is not the physical crude oil.

OPEC has programmed and put into effect increases or cuts in production on numerous occasions, but always with scarce results. To every public announcement of increased production by the OPEC countries, the markets have responded with an increase in the crude oil price by at least a couple of dollars per barrel – and vice versa, when they announced cuts (Figure 1.2).

It is therefore reasonable to question whether the economic model utilized really works or if it is applied in an incorrect way to the oil market. Or, rather, that the technological complexity of this market does not allow it to be modelled on the simple relationship between demand and supply at a global level. The internal dynamics of this particular market require a much more detailed and complex model, capable of describing some of the fundamental dynamics of the system.

Unfortunately, the majority of analysts in this field have exclusively economic backgrounds and tend to apply general or econometric models to the crude oil, which are suitable for other commodities (coffee,

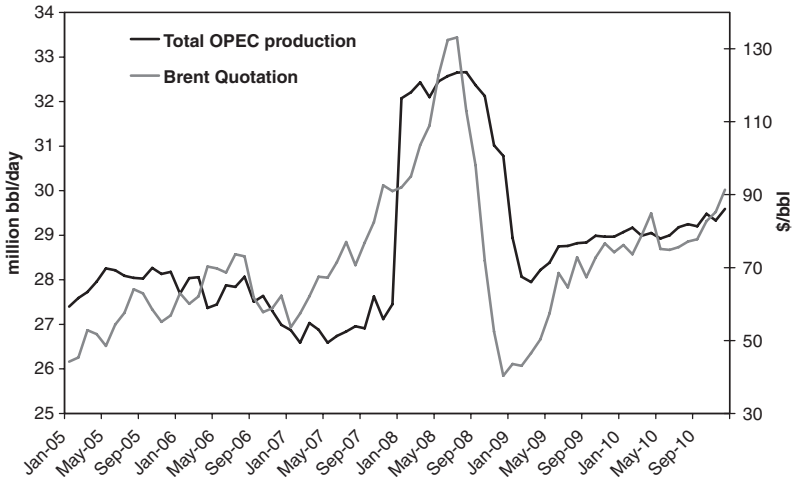

Figure 1.2 OPEC production versus Brent
Source: International Energy Agency

copper, gold etc.), where the production and technological transformation processes are less complex.

One starting point should be the recognition that what is commonly called the oil market is actually the conjunction and interaction of different markets which operate separately and independently but which are linked by certain complex forms of correlation and dynamics (Figure 1.3).

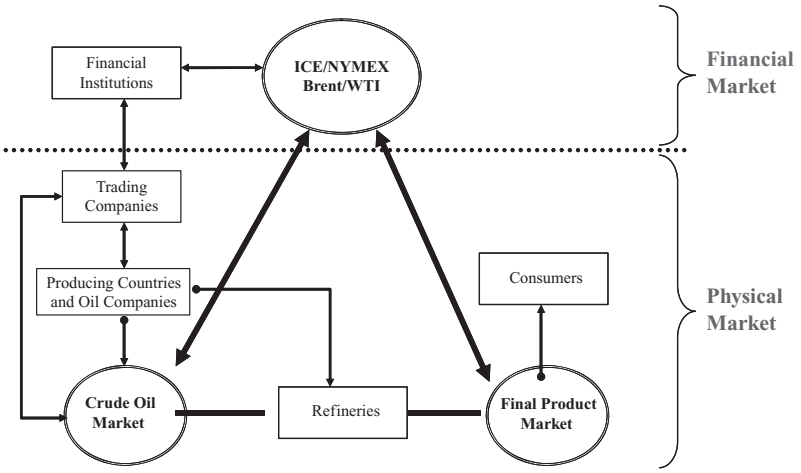

Figure 1.3 Complexity and interdependence in the oil market

We refer now to the crude oil market (raw material), to the finished products market (gasoline, diesel, jet fuel, fuel oil, chemical feedstocks, lubricants) and to the financial market for crude and finished products (futures). We should always remember that in our cars and in airplanes we do not use crude oil, but finished products, which are increasingly difficult to produce. We cannot also neglect the dramatic developments of the futures market and its predominant role in the world economy.

Each and all these markets respond to different behavioural patterns and they are operated by bodies with differing interests, culture and business objectives. A model that does not take into account the interrelations between these markets and their individual dynamics is incapable of describing what happens to oil prices.

When the analyst is confronted by the unequivocal event of a price variation, and having only the classic model of the global demand/supply, he can only create a scenario of probable events (input to the model), which, when processed, might generate the variation in price which actually took place. If the price rises it is clear that there must have been an increase in demand or a reduction in supply. Therefore, one looks for all the clues which might prove that something like this has taken place. In the absence of reliable and prompt information there is more than enough space for these concoctions. It is thus very easy to reach the mistaken conclusion that China and India (the distant enemy, the invisible tartars) are becoming the critical factors for our planet. And that certainly OPEC (the conflict of civilizations) is yet again, for political and ideological reasons, not producing enough crude. Unquestionably there is no need to verify the production data of Venezuela under Chavez, or Iran under Ahmadinejad. It seems highly likely that both would wish to create problems for the west by raising prices.

The economic and strategic importance of the themes related to the price of crude oil would require a far more detailed technical analysis.

In this discussion we shall firstly try to examine the structural changes in the oil industry in recent decades, to see what has changed to make these dramatic and uncontrollable variations in price possible. And above all we shall try to understand why, in the space of a few short weeks (August–November 2008), without having seen even a small variation in the physical crude oil demand/supply situation the price tumbled from $144 to $37 per barrel. Then, in a couple of months it climbed back to $70–80 per barrel, exceeding again $120 per barrel in 2011. These events have silenced many analysts, who have not been able to provide consistent answers to the following questions. First of all, why did the price drop in 2008? What happened in those few weeks? Did the

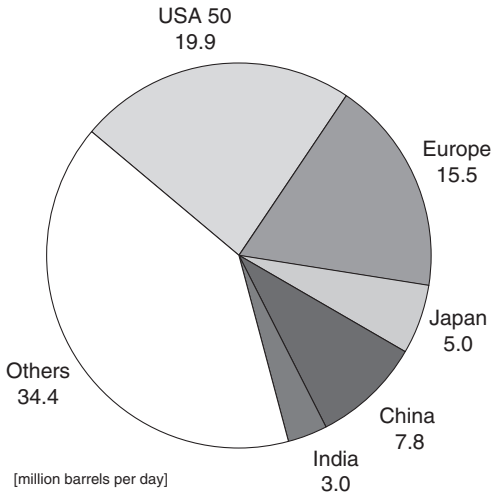

Figure 1.4 World oil demand (average in 2005–2010), million barrels per day
Source: International Energy Agency

demands of China and India dry up or did the tensions in the Middle East calm down? Was OPEC flooding the markets with crude?

The truth is that OPEC cut production, the data regarding world demand for oil (see Figure 1.4) showed no reduction in global consumption, and – in the previous weeks – the Middle East lived through one of the most dramatic crises in recent history. In all this turmoil, the oil price plunged by almost $110 per barrel.

What is the factor that then pushed the price up again above $120 per barrel, during a worldwide dramatic economic crisis and stagnation of oil consumption?

Is there an economic model that can explain these recent events? A description will be attempted in the following pages.