Surrey Energy Economics Centre

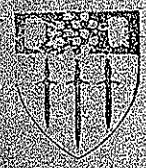
PROSPECTS FOR OIL PRICES

P Caddy, P Davies, D Hawdon, P Stevens and J Toalster

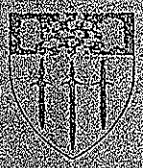
SEEDS 59 July 1991

Discussion Paper Series

SURREY ENERGY ECONOMICS CENTRE

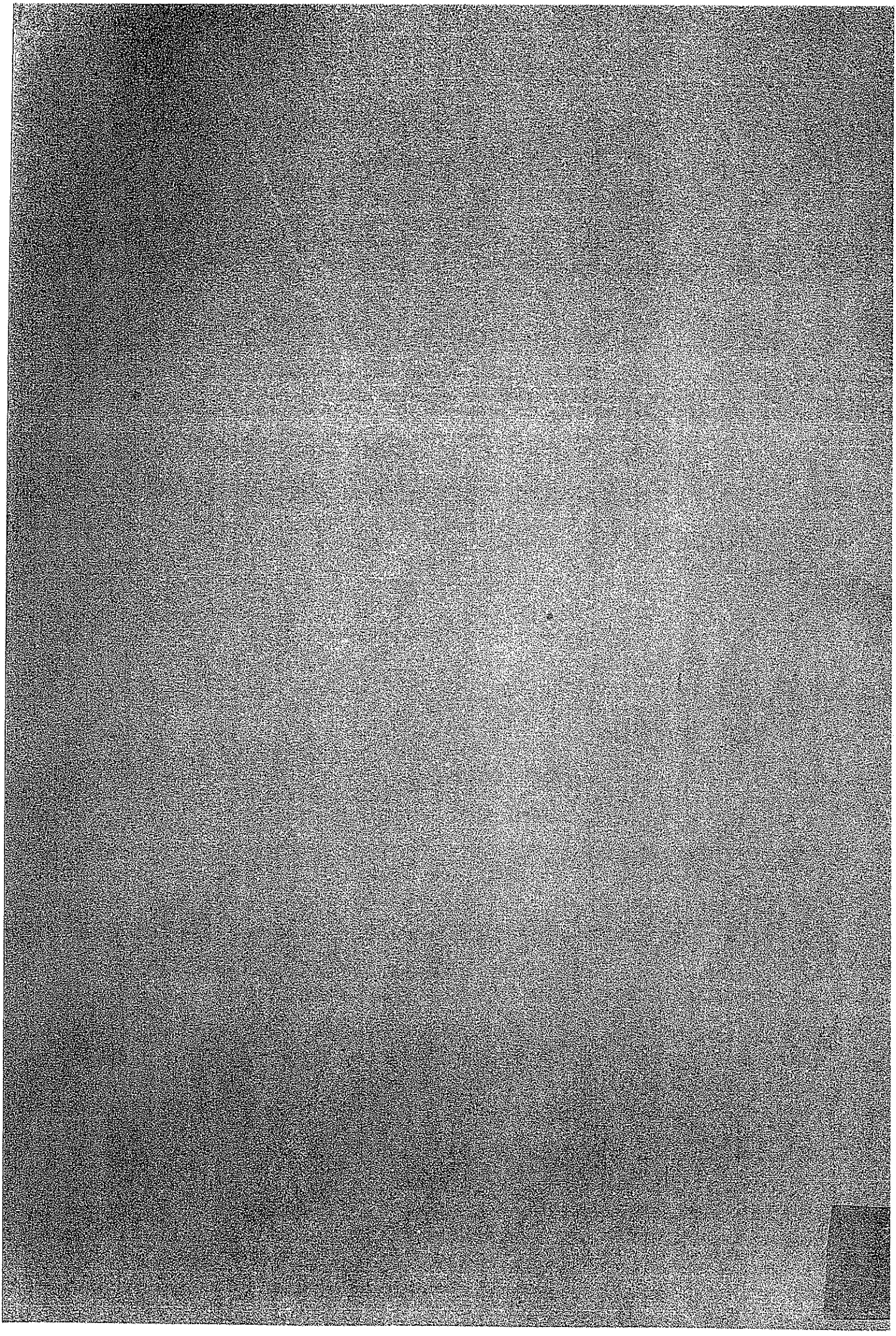


SURREY ENERGY ECONOMICS CENTRE



University of Surrey
Guildford, Surrey GU2 5XH
England U.K.

Editors: David Hawdon, Peter Pearson and Paul Stevens
Department of Economics, University of Surrey, Guildford, Surrey GU2 5XH



PROSPECTS FOR OIL PRICES

P Caddy, P Davies, D Hawdon, P Stevens and J Toalster

SEEDS 59 July 1991

ISBN 185237070X

The papers in this Discussion Paper arose out of a Seminar at the University of Surrey, held on 5 June 1991. The papers were written in June 1991.

CONTENTS

THE PROSPECTS FOR OIL PRICES

Paul Stevens
Surrey Energy Economics Centre, University of Surrey

INTRODUCTION

The purpose of this paper is to consider the prospects for crude oil prices over the short to medium term. I wish to concentrate upon the effectiveness of the price control mechanism which underlies the international price of crude oil, in particular in the context of the current situation in the Gulf. This approach has the advantage that as well as considering the short term, it also provides a framework by which longer term prospects can be considered.

The price control mechanism is whoever controls the excess capacity which in normal times characterizes the industry. The relationship to market forces is illustrated in Figure 1. The price setters[1] state a price. The purchasers either believe in this price and accept it or do not believe and reject it. If they believe, this administered price becomes the market price, if they are sceptical then this acts to force the administered price up or down. Supply and demand interact in this process in one of two ways. First, their existing and expected balance will influence the level at which the market controller feels it can set price and the level which the purchaser will believe. Second, once the administered price has been set, supply and demand balance will create pressures to support or depress the administered price.

The amount of excess capacity for which the market controller is responsible reflects the supply and demand balance in the market place. The control mechanism, which is the focus of this paper, is whoever controls excess capacity in the industry. If the control mechanism is effective, it can decree a price and manipulate supply to ensure the purchasers believe it and the supply and demand balance support it.

A good example of the mechanism can be seen in the 1980s although many other decades since 1860 would provide equally valid examples. The pattern of excess capacity is presented in Figure 2. The decade begins in the throes of the Iranian revolution with no excess capacity in the system. The result was that there was no control and the market consequently chased its own tail with the spot market leading the charge. As the decade progressed, OPEC's excess capacity grew as demand fell in response to recession, conservation and fuel switching and as non-OPEC supply rose in a lagged response to the First and Second Oil Shocks. The control mechanisms - the Saudi swing role and the OPEC quota system - were too weak to hold the line. The administered price ceased

[1] From 1945 to September 1970, the price setters were the oil companies. Between September 1970 and October 1973 they were the oil companies and the oil producing governments. Since 1973, they have been the oil producing governments of OPEC although how far the actual Organisation rather than constituent members has set prices is debatable.

FIGURE 1 THE MECHANISM FOR SETTING OIL PRICES

ADMINISTERED PRICES AND THE MARKET

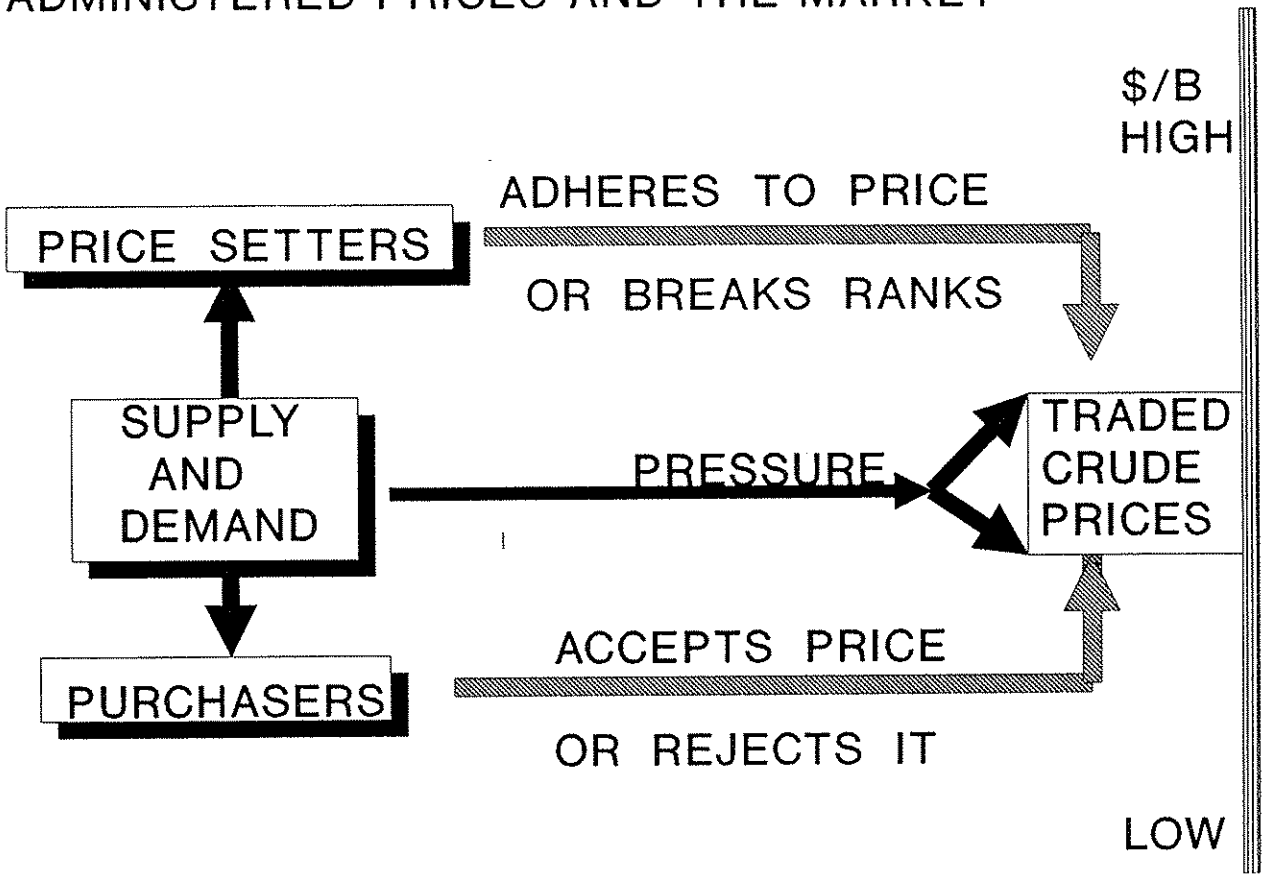
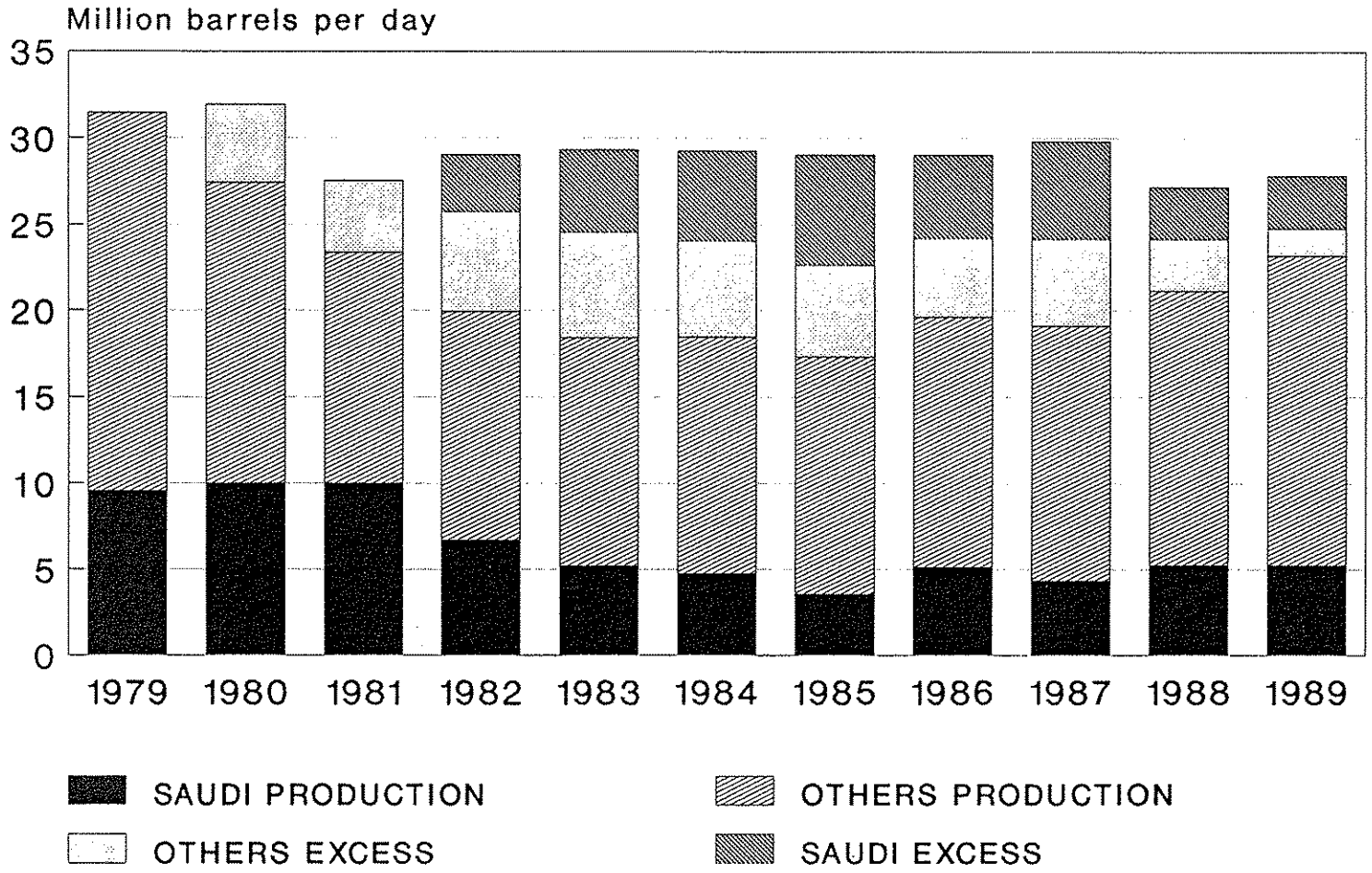


FIGURE 2 OPEC -PRODUCTION AND EXCESS CAPACITY 1979 - 1989



Source: Capacity CIA/Production BP

to be "believable" and in 1986 the price collapsed in the Third Oil Shock. Towards the end of the decade, rising demand began to eat into the excess capacity and the prospects for a restoration of control became a realistic possibility. This was especially because the excess capacity was beginning to be concentrated in Saudi Arabia. This implied the marginalization of the divisions within the OPEC control mechanism which had been so damaging in the mid 1980s.

In general, the effectiveness of the control mechanism at any time is a function of three factors

- How much excess capacity exists? The general rule is that the greater the excess capacity, other things being equal, the harder it is to control.

- If there is more than one entity in control, what degree of cohesion exists between the controllers? The general rule is that, other things being equal, the less cohesion exists, the harder it is to control.

- What are the objectives of the market controller? The general rule is that, other things being equal, the more deviant are the objectives from market perceptions, the harder it is to control.

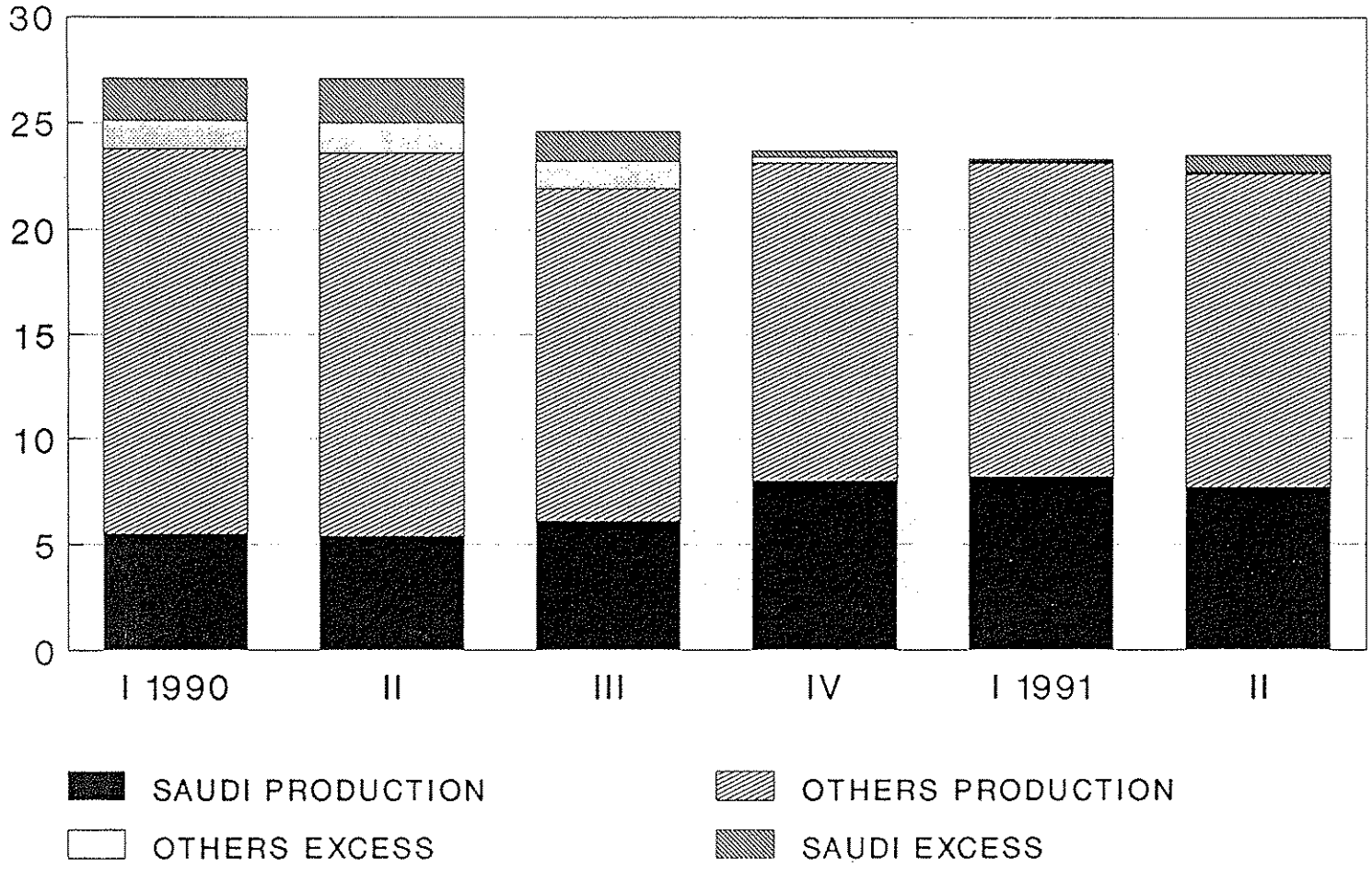
The purpose of this paper is to examine these three determinants of the effectiveness given the situation in the Gulf.

THE STATE OF EXCESS CAPACITY

The current situation with respect to excess capacity is illustrated in Figure 3. The invasion and subsequent war removed Iraqi and Kuwait export capacity by a process initially of sanctions and then physical damage. Two factors however, provided an offset to this. The first was that many producers, notably Saudi Arabia, brought forward existing plans or quickly developed new plans to expand capacity. This was motivated either by revenue considerations to gain maximum advantage of higher prices, or by a desire to prevent the market exploding. More specifically, to regain control of the oil market. How much of these plans were rhetoric and how much were converted into actual nuts, bolts and pipes remains a topic of controversy. In particular, there is much doubt over the sustainability of some of the capacity increases. The second offset to the loss of Iraqi and Kuwaiti capacity was that there was already very high levels of crude above ground in the form of stocks, both onshore and floating stock. These stocks at their height (some 120 million barrels) were dominated by those floating stocks held by Saudi Arabia and Iran.

The result of these factors is that currently, as is clear from Figure 3, the capacity situation is extremely tight. The only possible slack in the system is in Saudi Arabia and even that assumes acceptance of the claim by Saudi Aramco that the 8.3-8.5 million b/d represents sustainable capacity. With the system so tight, if anything else were to happen such as a loss of exports from the Soviet Union or even Algeria, then the price is quite

FIGURE 3 OPEC -PRODUCTION AND EXCESS CAPACITY QI 1990 -QI 1991



Source: IEA

likely to explode in response to what would be real physical shortage[2]. Given this, current market sentiment seems to be incredibly complacent.

Gulf politics will influence this very tight situation in a number of ways. It seems likely at present that the call on OPEC oil is likely to be maintained and indeed rise. The longer the time horizon taken, the more a rising call on OPEC is likely. In this context there are two issues which will influence whether Gulf capacity can meet this call - restoring capacity and developing new capacity.

There are two requirements to restore Iraqi and Kuwait capacity to the market. The first is that UN sanctions against Iraq are lifted. It now seems probable that this will be unlikely to occur while Saddam Hussein remains in power which could be for some time. The second requirement is investment to repair the damage caused as a result of both fighting and vandalism. In Iraq the damage is limited to the export capacity. For the pipelines only the pumping stations were damaged. The export terminal at Mina Al Bakr was damaged but the extent remains undisclosed. Repairs may be problematical since if Saddam remains they are not needed and if he goes, the aftermath of political upheaval could well inhibit repairs. Even if repairs are made and sanctions removed, use of the export capacity could be determined by outsiders. The northern pipeline through Turkey with a design capacity of 1.65 million b/d goes right through the Kurdish safe-haven and could easily be "interfered" with. The southern pipeline through Saudi Arabia, also with a design capacity of 1.65 million b/d, will effectively be under Saudi control if only by means of manipulating storage or tanker access. Mina Al Bakr would be the only uncontrolled exit and that pre-war only had a capacity of 800,000 b/d.

In Kuwait the damage is huge and could be even worse than the surface fires suggest given the possibility of severe reservoir damage as a result of the uncontrolled flow. Assuming no undue delay, estimates suggest it will be between 2-5 years before anything like full export capacity is restored. However, there are grounds for predicted "undue delay". The political situation in Kuwait is extremely uncertain and could at any time explode now that the opposition for the first time are armed. Also the departure (or expulsion) of much of the expatriate workforce has created very serious managerial gaps in the oil sector which is creating major constraints to the repair programme.

The implication of all this is that it is unlikely that restored Iraqi and Kuwait capacity will relieve tightness over the next year and perhaps for very much longer. What of the option of developing new capacity?

Consider first the Gulf countries excepting Saudi Arabia. In all of the other Gulf countries, the political will exists to expand capacity. Iran wants more capacity to try and alleviate the huge revenue pressures it faces in its effort to reconstruct following the Iran-Iraq war. Also control of excess capacity gives Iran greater influence in OPEC meetings. Bahrain, Oman, Qatar and the UAE also want more capacity. The current political situation gives the rulers very high discount rates and revenue is urgently needed to boost political legitimacy. However all these countries face constraints. They lack the

[2] Dependent of course on how long a disruption lasted.

reserves[3], the skilled manpower and (with the possible exception of the UAE) the finance. To overcome these problems they need to discover more reserves and they need assistance from foreign companies. Such assistance is perfectly plausible even in Iran but such involvement will take time before new capacity appears. For the next two years at least, little contribution can be expected from these countries[4].

If capacity expansion in Saudi Arabia is considered, the story is quite different. Without question they have the reserves to support immediate expansion. They also have the skilled manpower and in any case can buy in manpower to fill gaps. Finally, despite the enormous revenue pressures facing the Kingdom which will be outlined below, they will be able to finance any expansion. Clearly they have the ability to expand capacity. How quickly any expansion could happen is debatable since most of the expansion during the crisis came from demothballing. Further expansion will require drilling. Their willingness to expand is another issue. However, all the signs indicate they have got the political will to expand because, apart from any other consideration, excess capacity gives Saudi Arabia control of the market in the current tight environment.

Thus now and in the foreseeable future, only Saudi Arabia has any significant excess capacity. The greater the excess capacity in the market, the greater control over the market. This is providing the market controller is cohesive which raises the second determinant of the effectiveness of the market controller.

THE COHESION OF THE MARKET CONTROLLER

Because the excess capacity is concentrated currently almost entirely in Saudi Arabia, the cohesion of OPEC is almost irrelevant. It will only become relevant again when Iraq and Kuwait re-enter the market significantly or when others' new capacity comes onstream.

Both these are at least two years away and probably longer. The implication of this is absent another shock, Saudi Arabia has effective control of the oil market. In effect, Saudi Arabia alone is the price setter in Figure 1. and as such, Saudi Arabia's price objectives will be crucial.

THE PRICE OBJECTIVES OF THE MARKET CONTROLLER

The Low Price Route

At the moment, both the official rhetoric and the production decisions appear to be pointing in the direction of pricing moderation. The price is several dollars below the

---

[3] This is a controversial view for Iran and the UAE which both claim very high reserves. However, the recently announced increases in reserves were very much driven by political necessity rather than geological reality.

[4] This is true of other oil producers outside the region for similar reasons.

official OPEC target of $21 and there are no signs that Saudi Arabia is willing to reduce production to attain the higher target price. Indeed, at the recent OPEC meeting, Hisham Nazer explicitly ruled out such a course of action.

There are three conventional arguments which explain why Saudi Arabia is pursuing a policy of moderately low prices. Each argument however on closer examination is seriously flawed

The first argument is that high prices will jeopardize the future of oil in the world energy scene and hence devalue Saudi Arabia's huge reserves. Thus it is argued the experience of the Second Oil Shock would inhibit any moves to repeat the exercise and the Saudis have learnt their lesson. Three counters are possible. The first is that the financial and political pressures facing the Kingdom are such that discount rates are extremely high. Long term considerations are relegated to the exigencies of the immediate need to buy legitimacy and survive. The second counter is that current levels of price are in fact extremely low in historical terms. The $40 barrel of 1979 would be over $70 dollars today. Higher prices that remained below $30 dollars per barrel ($17 in 1979) would be unlikely to see oil move out of the energy markets. The domination of oil in transportation means extensive fuel switching is not possible which leaves only conservation where most of the easy action has already been taken. The final counter argument concerns environmental pressures in consumer countries. If it is believed that threats of global warming will lead to measures such as carbon taxes to reduce oil consumption in the future, the oil producers may as well preempt such moves and gain the revenue for themselves rather than leaving it in the consuming countries.

The second argument which seeks to explain the current price moderation concerns the influence of the US. It is argued that Saudi oil policy must now keep the US happy as a reward for Desert Shield and Desert Storm. Two points can be made. First, there are reasons why US self interest might favour higher oil prices. Higher prices would encourage flagging domestic supply and reduce demand in a situation where achieving the same thing by taxation may be politically impossible. Both are required if the US is not to increase its already growing dependence upon Gulf oil. Second, it would appear that Washington has the greatest difficulty in producing a coherent domestic energy policy let alone an international energy policy. Indeed, the Saudis themselves have indicated that they are already receiving conflicting signals from the US.

The final explanation for the apparent low price strategy is that Saudi Arabia is following a strategy of maximizing volume to lock-in markets for when the surplus re-emerges. As a market strategy such volume lock-in must be regarded with great scepticism. There is very limited brand loyalty in the crude oil market absent vertical integration. New or re-emerging crude supplies will be able to regain market share if they are willing to shade prices which history indicates they will.

The High Price Route

If the above counter arguments are accepted, then the basis for the low price policy appears thin and transient. Saudi Arabia's price objectives are only a subset of a whole

series of more general political objectives. Central to these objectives is the political strength and survival of the current ruling group within the family. Saudi Arabia faces severe financial problems. Before the crisis, the Kingdom was running a $6 billion annual budget deficit. Estimates of government foreign assets vary widely but on balance a figure of $40-50 billion seems sensible. Saudi Arabia's bill for the Gulf crisis is of the order of $40 billion excluding free oil, debt forgiveness and promises of aid through the Gulf Cooperation Council. The oil windfall from the crisis was $14 billion.

At the same time, the government is committed to increase expenditure. Defence expenditure is high on the list following the apparent success of high-tech weapons in Desert Storm. Much greater government spending is also required if the private sector is to be persuaded to re-emerge following the crisis. Faced with such spending requirements there is a strong logic and likely to be strong pressure from within the Saudi hierarchy for a gradual move towards higher prices. An extra $5 on price at 7.5 million b/d is worth an extra $14 billion. Furthermore, because of the control given by the tight capacity situation, Saudi Arabia could move in such a direction providing the increase was neither too high nor too quick. This obviously raises the question of what is a "high" price. The current OPEC target of $21 was worth only $12 dollars in 1979.

A strategy for higher prices would also fit other political objectives. The rulers of Saudi Arabia are painfully aware of the rather fickle record which US foreign policy has in the region. As conservative and cautious individuals, insurance policies against a withdrawal of the US must be high on the agenda. A necessary part of any such policy would be an accommodation with Iran. The history of the last 12 years contains at least two notable occasions when an understanding between Saudi Arabia and Iran has had a significant impact on the oil market. The first was the decision by Saudi Arabia in May 1979 to announce a reduction in their production ceiling of 1 million b/d. Arguably this cutback contributed as much as the Iranian Revolution to the start of the Second Oil Shock since it created a huge uncertainty in the market. Since this came shortly after the signing of the Camp David Accords on the White House lawn it was generally assumed the decision was taken as a sign of protest by Saudi Arabia. However, it seems more likely that King Khaled and Prince Abdullah decided to cut production to accommodate the return of Iranian production thereby hoping to placate the new regime in Teheran.[5] The second occasion was in the aftermath of the Third Oil Shock of 1986 when Saudi Arabia was persuaded by the US to reverse its policy and to try and push the price back up. It was an understanding between Saudi Arabia and Iran to jointly act as swing producers (despite vehement public denials) which enabled the market to claw its way back to the newly set $18 target. The control was only broken when the Mecca incident in the summer of 1987 soured relations between the two countries.

There are already clear signs of a strategic alliance re-emerging. Clearly Iran would support higher oil prices now since they need the revenue and face capacity constraints. If such an alliance wanted higher prices they could easily secure it given the state of the

---

[5] It is reported that Crown Prince Fahd was so opposed to the decision that he went off in disgust and sulked in Spain for three months.

market now and as it is expected to develop in the fourth quarter of this year. In particular, they might be in a position to use Iraq as the shelf inventory of the international industry by control or influence over Iraq's export pipelines.[6] Such a move would assist Saudi Arabia's prime objective of political security. Also, to be seen as the bringer of higher prices might limit some of the damage done by recent events to Saudi Arabia's image among a number of other oil producers.

CONCLUSIONS

The market is tight and will remain so for the next couple of years at least. As such it is still vulnerable to shocks. An obvious candidate would be a disruption to Soviet supplies. A less obvious candidate would be something from within the Arab world itself which many see as terribly vulnerable and unstable in the aftermath of the Gulf crisis.

Although Saudi Arabia is currently espousing the virtues of price moderation, the pressures to switch to a higher price policy will be strong, not least from the senior Princes who, as was seen in the summer of 1985, can get policy changed. If the market controller required higher oil prices to survive it is in a position to obtain them provided the rise is gradual and not too high.

Eventually of course, absent another major upheaval in the Gulf, excess capacity will re-emerge. When it does, its impact on the market will be very much influenced by the cohesion of the market controllers. What ever else might influence this it is indisputable that the state of Gulf politics will be a central issues.

[6] Saudi Arabia directly and Iran indirectly by influence with the Kurds.

The Prospects for Oil Prices

by

Peter Davies

Chief Economist, The British Petroleum Co. Plc

1. Introduction

This paper aims to review the prospect for oil prices particularly over the coming 12-24 months. It focuses on the impact of the Gulf Crisis on oil markets today and the likely effect of the unravelling of its after-effects on oil markets in the future. It also considers these developments in the context of longer run underlying trends in oil markets.

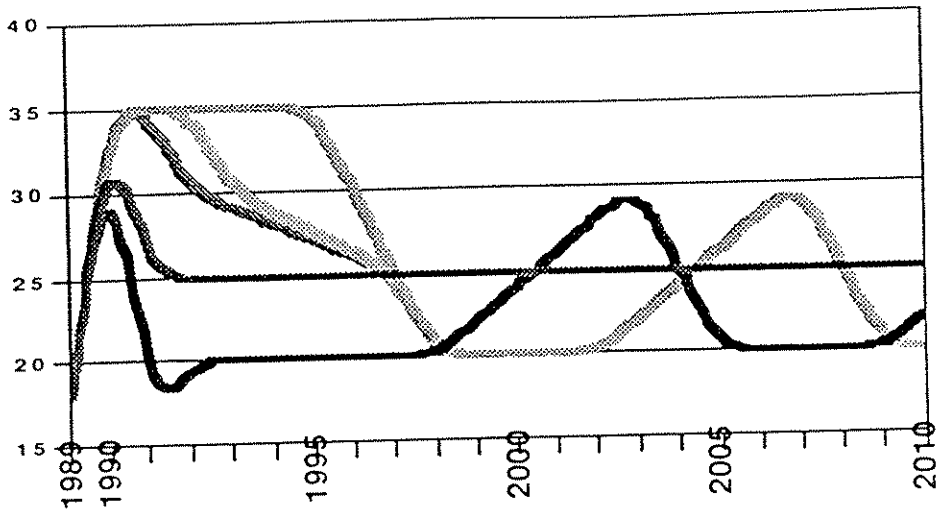
2. Why is the Oil Price not $30?

As of today the price of Brent crude is approximately $19 per barrel. If we are to consider what prospects for future oil prices it is important first to understand why prices are what they are today. To a large degree the surprise today is that prices are only $19 per barrel and not $30 per barrel.

As of today the world oil industry is producing very close to its level of sustainable capacity - probably at about 98% capacity utilisation on a world wide basis, and even over 95% within OPEC. The main cause of this "tightness" is the loss of production from Kuwait as a result of war damage and the loss of exports from Iraq as a result of the UN embargo and, to a much lesser extent, war damage.

In BP, at the beginning of the Gulf Crisis we developed post-crisis oil market scenarios that focused on the amount of war damaged capacity and the price strategies of the key OPEC producers (see figure 1). In short it had been expected that, if damage was limited, oil prices would subside (from a level at that time of $30-40) to the $20-25 range. To the extent that the crisis were to continue to keep Iraqi and Kuwaiti exports out of the market, it was expected that prices would remain above this range - more likely in the $25-35 range depending on tension and potential damage to Saudi Arabian oil producing facilities. Based on this rationale alone, the price today ought to be in the $25-30 range!

Figure 1: Post Gulf Crisis Oil Price Scenarios



Why have prices slipped back to the $18-21 range over the last few months? The first cause was probably the effect of the announcements by the IEA and US Government at the outbreak of war in January as to their willingness to release official stocks. This led to the largest ever 1 day decline in prices and had a fundamental impact on market psychology. The risk of short term physical shortage was eliminated at a stroke. This market confidence has continued since that time and has acted as an important factor in keeping prices relatively low.

In addition, the marketing policies of Saudi Arabia and Iran who have built up "floating storage" have been important. They have been able to satisfy demand for oil rapidly and have thus acted as stabilisers to the prevailing level of prices. At their peak in April it was estimated that such floating stocks totalled 160 million barrels. Some drawdown occurred in May but these stocks still remain an important factor.

OECD commercial stocks are also at a high level, having been built up mainly in the first half of 1990. The latest estimates place these at around 76 days of forward consumption - still about 10 days of normal minimum operating levels. At the same time, stock levels outside the OECD are believed to be high. A number of oil consuming countries built stocks rapidly in the early days of the Gulf Crisis and have yet to reduce them substantially. These stock levels overhang the market and tend to keep oil prices weak.

Furthermore, the market is aware that the current level of production capacity utilisation is probably only temporary. It is widely believed that the UN embargo on Iraq will be lifted soon and press reports from Kuwait have talked about an early recommencement of oil production. In addition, it is widely believed that production capacity is being increased rapidly in the rest of OPEC. These perceptions dominate

market expectations even though they may be too optimistic on all three counts.

There is also a tendency today to consider that the price range of $18-21 for Brent is "reasonably high". Add to this the expectation that the supply situation will improve and a *complacency* starts to enter the minds of many. The argument is that prices today are *reasonable* and the future augurs well. Accordingly there should be few upside pressures on oil prices. This argument, however, fails to recognise a number of factors that will be addressed below. In addition, it ignores the effect of recent inflationary pressures. Today's oil price in 1985 Dollars would be below $15! Looked at in these terms many would accept that such a price is in fact low and close to many analysts' lower bound to oil prices.

Finally, a key determinant of oil prices remains the price objectives and oil policies of Saudi Arabia. Saudi Arabia is the only producer today with any significant degree of sustainable excess capacity and is the only producer who has shown any willingness to reduce production below capacity levels, even though it is reluctant to return to its old swing producer role. In such circumstances, Saudi Arabia can potentially exert significant influence over oil prices. Over recent months the Saudis have taken no actions and made no statements that could be construed as to indicate that they are particularly unhappy at today's levels of prices. While Saudi Arabia is able to benefit from higher production levels, it appears happy to maintain some form of stability in the oil market and in the Gulf region as a whole in the immediate post war period. This is also consistent with their long expressed concerns that higher oil prices pose a threat to oil demand over the long term.

3. Longer Run Oil Market Trends

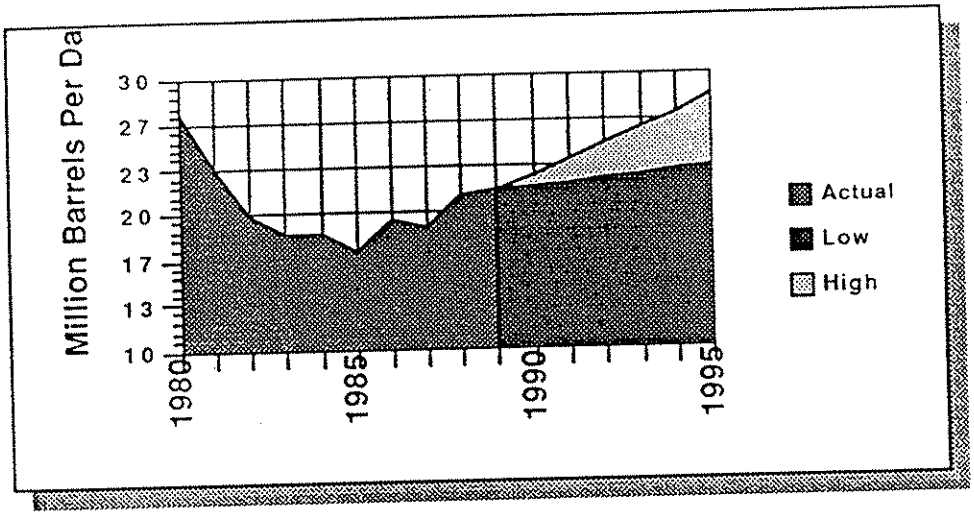
Oil price prospects should also be examined in the context of longer term oil market trends. Oil markets are currently in the midst of a long run cyclical upswing that began from a trough in 1986. The upswing is reinforced by 2 major underlying factors:

1. **Rising oil demand**. World oil demand continues to rise on a trend basis despite contracting marginally in 1990 as a result of the Gulf Crisis. This expansion is caused by world population and economic growth and the ever increasing demand for transportation, especially motor cars. This growth is fastest in the developing world where car stocks are in some cases escalating (e.g. S. Korea) but is also prevalent in much of the industrialised world. This underlying growth in oil demand is tempered by continuing efficiency gains and substitution by gas in the static sector where supplies are available at competitive prices. Fluctuating economic performance has an effect on shorter term trends. The trend growth of oil demand is likely to average around 1.5% in the 1990s.

2. **Constrained Non-OPEC Production**. The apparently inexorable rise in non-OPEC production came to an end in the mid 1980s following declines in the US, USSR and temporary declines in the UK. The *pipeline* of new projects is such that it will be very difficult to see any recovery in non-OPEC production in the 1990s and a slight trend decline is most probable.

The trend since 1986 has been for a rising requirement for OPEC crude oil. This is likely to continue through the 1990s (see figure 2). a number of OPEC countries are investing to supply this increase in demand. Nevertheless, this rising cyclical trend is likely to be accompanied, on average, by higher oil prices.

Figure 2: Expected Call on OPEC



4. 1991: Temporary Deviation from the Trend?

The probability is that 1991 will appear to be a partial deviation from the longer term trend outlined in section 3 above. This is mainly because of events in the Emerging Market Economies (EMEs) - especially the USSR - and because of stock behaviour.

Oil demand outside the USSR is expected to continue to grow despite the global economic slowdown and outright recession in many English-speaking nations. Demand will be sluggish in the US but still growing at over 1% in Japan. LDC growth shows few signs of weakening significantly. Overall oil demand outside the USSR is expected to increase by about 700,000 bd. The USSR is, however, a serious exception. Forecasters point to a GDP contraction this year of as much as 10-15%. Industrial production has slumped. Oil demand will accordingly contract sharply. Accurate estimates are of course impossible but the decline could be of the order of 600,000 bd. By implication, world oil demand will only increase by 100,000 bd in 1991, after actually declining in 1990.

Non-OPEC production outside the USSR looks likely to increase on average in 1991. Some of this is due to the Gulf Crisis induced increases in the second half of 1990 that have been sustained. The rise is fairly widespread with expansions anticipated in Norway, Yemen, the UK, Canada, Syria, Oman etc. Overall an increase of about 500,000 bd is predicted. Again the outlook for the USSR is particularly uncertain. Production has been falling consistently since 1988. Official statements indicate a further decline in 1991. The fall could be in the region of 700,000 bd - slightly more than the expected decline in oil demand. This implies an overall fall of about 200,000 bd in world non-OPEC production.

By implication, the demand for OPEC crude plus stocks (after allowance for a number of minor other items) should rise by about 300,000 bd in 1991 relative to 1990. However, in 1990 stockbuilding added approximately 800,000 bd to the total call on OPEC. The overall level of stockbuild for 1991 remains uncertain having been positive in the first quarter. However, it is most unlikely that it will be as large as in 1990 and could even be insignificant. The requirement for OPEC production will thus include significantly less than the 800,000 bd stockbuild of 1990. Accordingly the actual year average call on OPEC will probably decline by as much as 500,000 bd in 1991 to 22.3-22.5 mbd from 22.9 mbd in 1990 - a deviation from the longer term trend.

5. 1992: Return to the Trend

The present expectations are that 1992 will see a reversion back to the trend after the disruptions of 1990/1. The world economy looks likely to recover. The first signs of a cyclical pickup are becoming evident in the US and the worst concerns of the gloomsters of a credit-induced depression seem unlikely to be fulfilled. It also seems most unlikely that the USSR could contract by the same amount in 1992 as in 1991, although prophesy in a time of fundamental adjustment is most unwise. On balance, however, oil demand should accelerate in 1992.

A further, but smaller, rise in non-OPEC production outside the USSR is possible. There should be some pickup in the UK and selected increases elsewhere such as the commencement of production in Papua New Guinea. The USSR production outlook remains a conundrum. The maturity of the fields and production problems point to a further decline, although this may be less than in 1991 as investment allocations to the oil industry have been increased sharply.

Overall, this picture points to a return to a rising call on OPEC in 1992, barring as ever any major unforeseen event. However, it should be noted that most of the uncertainties would tend to point to a higher rather than a lower call on OPEC. 1992 is thus likely to see a return to longer term trends in the oil market.

6. Oil Market Pressure Points

Oil prices cannot be predicted accurately merely by examining the direction of the change in the call on OPEC. Furthermore, 1992 offers

the prospect of a *hiatus* when OPEC producers will need to reassess their pricing and production policies.

The timing of the restoration of exports from Iraq and Kuwait is a matter of much speculation. It is clear, however, that the maintenance of the UN embargo on Iraqi exports is a political issue and reflects the US and UK opposition to the regime of Saddam Hussein. While the timetable of events is impossible to predict it is difficult to foresee that he embargo could be maintained beyond 1992. Reports indicate that, as long as Turkey and/or Saudi Arabia is willing to reopen the export pipelines through their territories, Iraqi oil exports will be able to recommence rapidly. While output may not be able to return to previous levels immediately, fundamental damage to Iraqi facilities appears to be limited.

The Kuwaiti situation is very different and depends entirely on the ability of the Kuwaitis and assisting oil contractors and companies on repairing the damage to the fields. In general work seems to be taking longer than anticipated and there may be some longer term damage to some of the reservoirs. Nevertheless, it would be most surprising if oil exports have not resumed and continue to increase during 1992.

The potential increase in production from Iraq and Kuwait is likely to be 2-4 mbd and will exceed the expected increase in call on OPEC over the period. Accordingly, the OPEC nations will need to make decisions as to their intended levels of production with at least some needing to cut output if Iraq and Kuwait are to be accommodated.

The willingness and ability of the OPEC producers to reach a new agreement will be affected by their financial situations. Almost every OPEC producer is facing financial discomfort either as a result of long standing indebtedness or low oil revenues, or as a result of the costs of the Gulf War. War reconstruction, payments to the allies and pressures for new military and other expenditures will create significant financial burdens. The only exception to these financial pressures is the UAE.

The machinations that lead to OPEC agreements are impossible to forecast. However, it is reasonable to assume that when the jockeying and bargaining is over, OPEC nations will be very reluctant to settle for an agreement that will make all members except Kuwait and Iraq financially worse off. The most likely ultimate outcome would thus seem to be an agreement that ensures sufficient production restraint to raise prices somewhat from today's levels even though they could potentially ease temporarily before agreement is reached and implemented. As long as prices do not rise sharply (e.g. to $25-30) the negative impact upon oil demand will be very limited.

A further major uncertainty relates to the situation in the USSR. The USSR is the world's largest producer of crude oil and second largest consumer. Small changes in the USSR could have significant global repercussions. The event which would have the greatest impact on oil markets would be a strike in the oil industry. This could eliminate net exports from the USSR for a period and could even lead to small net

imports for essential purposes. Strikes have been threatened over the last year but so far have not taken place. The probability is that the greatest risk of an all out strike has passed, but it would be unwise to be categoric. If a strike occurred before the restoration of Iraq and Kuwaiti exports, prices could surge and further releases of emergency stocks could be required. If, however, it occurred as Iraq and Kuwait were being restored, the effect would be substantially less and could be absorbed. Ironically, it could even result in lower prices than would otherwise be the case as OPEC would benefit from higher volumes and not need to agree on higher prices.

7. Conclusions

Oil markets are in the midst of a long term cyclical upswing that has been disturbed in 1990/1 by the Gulf Crisis, recession and developments in the USSR. Nevertheless, we will probably return to this rising call on OPEC during 1992 and beyond

1992 will probabaly be a hiatus for oil markets and OPEC as Kuwaiti and Iraqi oil exports are restored. OPEC's financial pressures indicate that they will be reluctant to agree to the any accommodation of the restored production that will weaken their revenue position. On balance an agreement that results in sufficient overall production restraint that will firm prices somewhat is most likely.

The cyclical upswing in the need for OPEC oil is likely to be accompanies by further cyclical increases in oil prices at some stage during the 1990s.

OIL PRICE PROSPECTS

John Toalster
Societé Genérale Strass Turnbull Securities Ltd

INTRODUCTION

In this paper, oil price prospects are examined over a one and five year time span. In order to discuss the likely trend in prices it is imperative to establish a meaningful framework within which to analyze developments in the international oil industry. It is naive to look at changes in such physical volumes as supply, demand and stocks without simultaneously considering the all important issue of the motivations and objectives of the principal players in the market. Power resides in the hands of the largest exporter (Saudi Arabia), which coincidentally and more significantly, is also the major supplier of incremental volumes to the market, rather than with the largest producer (USSR), or the largest consumer (USA).

Currently and for several years to come, Saudi Arabia will exert overwhelming influence on the world market and its moderate oil price objective, undefined, but widely interpreted as lying in the range of $18-21 a barrel for the OPEC basket of relatively light and valuable crudes, which may or may not be in real terms, equating to around $19-22 a barrel for Brent, is easily achievable. At present, with minimal excess productive capacity available anywhere in the world, the influence of Saudi Arabia is enhanced and its moderating influence is more essential than ever before.

Whilst it is self evident that in the short term - over the next six to twelve months - there is a slight risk to oil prices on the upside (perhaps to $25-30 a barrel for a few weeks at most) if a major catastrophe occurs, such as another Gulf war, widespread revolution in the USSR or severe disruption to production facilities in the non OPEC world akin to the Piper Alpha disaster, the most likely outcome is for prices to move $2-3 a barrel either side of the current price of $18 a barrel for dated Brent.

Thereafter, the combination of substantial OPEC capacity increases, with a high probability of renewed struggle for market share within the cartel and the gradual re-appearance of both Iraq and Kuwait in export markets, is likely to create an equally high probability of price risks on the downside, as exhibited in 1986, 1988 and 1990 prior to the Iraqi invasion of Kuwait. Thus, the long term (five year) price range, on average, is unlikely to be significantly higher than $19-22 a barrel for Brent possibly in money of the day rather than real terms and it could be substantially lower on occasions, during the fraught process of realignment of OPEC quotas.

WHERE DOES POWER RESIDE?

The world oil market comprises a mixture of diverse producers, consumers and exporters, with a concentration of power, either potential or actual, existing in the exporting sphere, organised since 1960 under the aegis of OPEC. In purely economic, as opposed to political terms, bargaining strength devolves upon exporters rather than residing with the largest producer in the world (USSR) or the largest consumer (USA). The rationale behind this assertion can be found in the observation that the greatest de-stabilising force historically in the industry, is sudden change on the supply side, in either an upward or downward direction as witnessed in 1973, 1979, 1986 and to a lesser extent in 1990. This supply change emanates from cutbacks or surges in OPEC exports. The demand side of the equation is less significant because it tends to be slow moving, relatively predictable and rarely subject to violent movements, except when panic buying erupts as in the early 1980s.

Currently and possibly for several years to come, the country possessing the largest excess exporting capacity, is Saudi Arabia with plans to expand sustainable productive capacity from around 8.5 million b/d to 10 million b/d by 1995. Whilst other OPEC members are also planning capacity expansions they will not be able, successfully, to challenge the market power of Saudi Arabia.

LESSONS FROM THE PAST

OPEC in general (to a limited extent) and Saudi Arabia in particular (to a considerable extent), have learnt from the mistakes of the past and there is considerable determination to avoid previous and painful excesses. In retrospect, it is easy to identify the 1979 steep oil price rise (160% between 1978 and 1980), following only a few years after the 1973 oil price pullulation (450% between 1972 and 1974), as the cause of most of the industry's subsequent problems, with the adverse effects being felt and endured by consumers and producers alike, not only in the 1980's, but continuing through into the 1990's.

For consumers, the effects were readily identifiable encompassing recession, inflation and a generalised fear regarding security and cost of oil supplies from OPEC. For OPEC, apart from the obvious initial benefit arising from a massive boost to export earnings, it soon became apparent that a strong negative reaction was in progress, incorporating falling oil consumption in the non Communist world, rising supplies from non OPEC sources, official encouragement for such measures as energy conservation and substitution, the building of governmental strategic stocks and the burgeoning distrust of consumers worldwide.

Consumption of crude oil and natural gas liquids declined in the non Communist world from 51.28 million b/d in 1979 to 44.97 million b/d in 1983, representing a fall of 3.2% per annum compound over a four year period, compared with growth of 2.8% per annum on average in the 1970s and 8.0% per annum in the 1960s. Meanwhile, non OPEC producers were rapidly expanding output from the lowly level of 19.8 million b/d in 1979

to the not inconsiderable level of 24.7 million b/d in 1989.

Needless to say, this 24.7% expansion in output was achieved at the expense of OPEC, with Saudi Arabia bearing the brunt of the readjustment. Whereas in 1979 OPEC production averaged 31.47 million b/d including NGLs and output from the Neutral Zone between Kuwait and Saudi Arabia, by 1985 OPEC production had fallen to 17.34 million b/d under the combined pressure of reduced oil consumption and expanding non OPEC output. However, the Saudi Arabian experience was considerably more painful with a retreat from 9.84 million b/d in 1979 to an average of only 3.74 million b/d in 1985 encompassing output of only 2.5 million b/d in mid 1985.

There was a considerable degree of disillusionment in Saudi Arabia in 1985 because the Kingdom had paid a high price over the previous six years in terms of its much diminished oil output and export earnings, in support of OPEC's high priced, oil strategy, with the added irony that it did not agree fully with the price target. Disillusionment turned into a dictum with the implementation of netback pricing policies ensuring rising sales for Saudi exports. As a direct result of the expansion in Saudi output, oil prices collapsed in the first half of 1986 and a new era arose in the world oil market. Thereafter, the market framework was transformed compared with the previous six years.

Seven lessons have been learnt by the various market participants since the 1986 oil price trauma and their effects will be all pervasive for at least the next five years and possibly the next ten years.

The first lesson is that cycles in oil prices has become the norm with oscillations broadly in the $10-20 a barrel range except in extreme cases of disruption caused by unique events such as war. Cycles of over and under production by OPEC alternate regularly, as members either vie for market share or restrain output in order to raise prices from unacceptably low levels.

The second lesson pertains to OPEC insofar as it has realised that the fairy godmother (Saudi Arabia) which underwrote high oil prices in the early 1980s, no longer exists. Instead, the Kingdom is pursuing policies designed to maximise its own benefits.

In the third instance it is widely understood that political factors, on occasions, as in mid 1990 can swamp economic forces as far as oil price determination is concerned.

Fourthly, there is recognition of the fact that in extreme circumstances, such as fear of removal of large supplies of oil from the world market, the West in general and the US in particular, will use military force to restore the status quo.

The fifth element comprises the realisation that when the necessity arises oil supplies can be boosted to a much greater extent than was believed hitherto. The combination of political will, cash availability and the application of existing technology to known substantial oil reserves, is a potent mix and this lesson should not be forgotten by observers who automatically write off the USSR.

Sixthly, the psychological importance of potential stock changes cannot be over emphasised with the IEA offer to release stocks onto the market in 1991 resulting in a warning shot being fired across the bows of oil producers whilst simultaneously offering hope to consumers.

Finally, the currently fashionable concept of a dialogue between producers and consumers to create stability in the oil market, masks a dramatic shift in the balance of power in favour of consumers and away from producers, notwithstanding the short term possibility of an oil price spike in the event of unexpected supply disruption. This shift in the power balance has been facilitated in large part by the above factors, particularly in the context of several countries, both within and outside OPEC, seeking assistance to expand productive capacity.

The lessons learnt since the 1979 oil price rise, reinforced to an overwhelming extent post the 1986 oil price break down, explain not only the current oil price outlook, but also provide invaluable insights into prospects for coming years.

SHORT TERM OUTLOOK

It is paradoxical to some observers of the current oil scene that oil prices are languishing around $18 a barrel, some $3 a barrel or more below the official OPEC target price, during a period when there is minimal excess productive capacity in existence and revenue requirements have never been greater post the Gulf war. Undoubtedly, power lies in the hands of OPEC and the cartel, acting in unison, could achieve and sustain prices far in excess of $20 a barrel if it so desired, prior to the re-emergence of exports from Kuwait and Iraq and the appearance of greatly expanded capacity in coming years. The apparent paradox is explained easily by reference to the above analysis, which proves conclusively that it would be folly for OPEC to exploit a temporary advantage, as occurred in the early 1980s, and thereafter suffer the consequences of its actions for a decade or more. The reaction to such an opportunistic approach would be felt on both an economic and political level.

The political dimension encompasses not only the opprobrium of the West which would be incurred if oil prices surged ahead following the defeat of Saddam Hussein and the removal of Iraqi supplies from the market, but also incorporates the renewed stimulus to energy conservation thereby reinforcing the move towards the imposition of carbon taxes for environmental reasons and substitution of other primary energy sources for oil. However, the most significant political dimension to arise in the post Gulf war world is the increasingly close relationship which has developed between the USA and Saudi Arabia.

It is not unreasonable to suggest that the Gulf arab states are grateful to the military forces which restored the status quo to the area and one tangible sign of this gratitude is to ensure that oil supplies are sufficient to meet requirements in coming months which could be potentially fraught given the absence of meaningful production from Kuwait and Iraq. The corollary to this ample availability philosophy is for an abnormal contango situation to exist in the crude oil market whereby prompt prices are below future prices,

whilst simultaneously, the USA in particular derives a noticeable boost to economic activity during a recessionary period.

The economic dimension reveals the same dichotomy as the political, insofar as the power exists within OPEC to raise prices substantially either currently or over the next few months, albeit at the expense of creating an unwelcome, but utterly predictable, backlash within a relatively short period of time.Oil demand in the non Communist world is sluggish with an overall decline in prospect in 1991. This contrasts sharply with the 1960s experience of 8.0% per annum growth and is poor even in comparison with the 2.8% per annum average 1970s outcome, but it is broadly in line with the bare 0.3% achievement of the 1980s decade.

The last thing OPEC needs at present is a repeat of the early 1980s experience of falling world oil consumption. Whilst it is valid to draw attention to the problems being encountered by the USSR as manifested in the decline in output from 12.5 million b/d in 1988 to only 10.7 million b/d currently, it is equally valid to state that the main brunt of the decline is being felt by the domestic population, with the former satellite states in eastern Europe also feeling the effects. Meanwhile, the USSR shortfalls have been rectified by additional output from Saudi Arabia and elsewhere. Underlying all of these current events is the realisation that productive capacity is gradually being rebuilt in Kuwait and Iraq and an artificially induced oil shortage could change the parameters determining the re-emergence of Iraq back into the world community. Hence, any attempt to exploit the current relatively tight supply and demand balance would be doomed to fail even before it had started. This fact of oil life has been grasped by Saudi Arabian policy makers and by other Gulf arab states, but the short termism which pervades most other OPEC producers precludes them from assimilating the message.

Undeniably, there exists a degree of risk on the upside for oil prices over the next 6-12 months due to the exceptionally small amount of surplus productive capacity amounting to no more than 1-2 million b/d at most. However, the risk is relatively small and for it to be activated there would need to be an exceptional occurrence such as civil war in the USSR, substantial, panic buying spurred on by rumours of impending shortages, renewal of warfare in the Middle East or a major disruption to oil supplies such as explosions in a vulnerable area in the North Sea. In the absence of such events oil prices are expected to trade within $2-3 a barrel of $18 with the downside risk being equally as likely as the upside risk.

LONG TERM OUTLOOK

Nature abhors a vacuum and the emergence of a much diminished level of spare capacity in the world at present equates as closely as is possible in the oil world to a vacuum. Hence, it should come as no surprise to anyone with a historical perspective that several countries are pulling out all stops to raise capacity even when it is self evident that the capacity cannot be utilised fully without creating an oil price collapse. Part of the explanation lies in the fact that bargaining power in the OPEC context is contingent upon the ability to threaten to flood the market unless a realistic quota allocation is forthcoming.

The extent to which capacity expansion will develop in the future has been complicated by the Gulf war and its aftermath with particular question marks over Kuwait and Iraq. Whilst it would be reasonable to expect under-performance by those two countries it is apparent that some other states such as Iran, Venezuela and Nigeria, have become more ambitious, perhaps sensing a window of opportunity. It is not realistic to assume that development plans will be restricted by lack of funds because the potential profitability of incremental, low cost, supplies from OPEC is such, that a formula will be reached whereby fields are developed. In total, OPEC capacity can be expected to rise from its present level of 24-5 million b/d to 35-7 million b/d by 1995 with the lower figure representing continued setbacks compared with previous plans in Kuwait and Iraq, whilst the higher number would materialise if uninterrupted progress is forthcoming. In any event the plethora of new projects ensures that oil price risks of potentially serious magnitude, exist on the downside in coming years.

Turning to a five year supply and demand balance it is self evident that growth in OPEC productive capacity of between 2.6 and 3.1 million b/d each year on average until 1995 far exceeds the likely growth in oil demand of between 750,000 b/d and 900,000 b/d, on the most optimistic assumptions, regarding recovery from the present recession and the absence of carbon taxes. Non OPEC output is unlikely to exhibit any marked trend either upwards or downwards over this time span, whilst any change in the USSR, unless civil war erupts, will probably remove only marginal amounts from export markets in hard currency areas, given the overriding need for foreign exchange.

CONCLUSION

The most likely outcome for oil prices in both the short term and over the next few years is for a trading range to be established around $18-21 a barrel for Brent, in money of the day, terms thereby representing a further decline in real terms following the steep fall since 1980.

It is obvious that a price risk exists on the upside as we enter the stock rebuilding season, but stocks are currently rising and this will reduce the pressure on the fourth quarter. It will take a major disruption to oil supplies to push up prices short term and it would peter out probably within a few weeks if the unexpected happened.

Longer term, the price risk moves to the downside as OPEC renews its traditional struggle for market share and a repeat of the 1986, 1988 and early 1990 oil price falls can be expected to materialise once again.

PROSPECTS FOR OIL PRICES

Peter Caddy, Petroleum Argus

I doubt if anyone a year ago would have predicted the wide swings in prices that we have all seen since the invasion of Kuwait last August. That is a salutary lesson to us all. So I am going to excuse myself straight away and say that I am not going to predict what will happen to prices. I will only put forward ideas concerning the present market.

Cyclical patterns

I would like at first to consider patterns in oil prices which seem to repeat themselves. Two cyclical patterns on oil prices appeal to my colleagues and me at Petroleum Argus.

The first deals with the response by Opec countries to international crude prices and the second concerns the response by marginal buyers, particularly British utilities, to oil prices. Firstly the $15 to $20 a barrel oil scenario. Taking the $15 to $20 a barrel oil price first. This argument was presented to this seminar one and a half years ago by my colleague, Jan Nasmyth. Only then it was called the $10 to $20 concept. Whether this is a subtle change in emphasis I will deal with later. The argument, however, runs as follows. There is no shortage of crude oil availability in the world. There never has been. Not even during the panics of the 1920s, the 1940s or the 1970s was there ever any real shortage of crude. The problem in any international supply demand balance is not a potential shortage of crude oil but whether oil producer exporters can operate restraint in putting crude oil onto the market. Price stability in oil is obtained by the fast, efficient and judicious use of production restraint in response to fluctuations in demand. This was achieved in the days of the so called seven sisters, the major international oil companies, because as integrated oil companies any variation in demand could and was instantly transmitted through their internal system into crude production.

This stable state of affairs broke down in the 1970s and 1980s because de-integration within the industry meant that variations in oil demand were not responded to quickly enough by producer exporters. The result was that price fluctuation set in. Prices in 1980s and 1990s have in consequence oscillated like an energy wave.

The theory of $10 to $20 barrel oil was first propounded by a London based consultant Martin Orlean in 1988 and has characterized international oil prices since the price collapse of 1986. The theory suggests that as demand rises Opec countries who have available surplus capacity for release to the market, will increase supply in order to take advantage of rising prices. The desire to place more crude into the market in order to capitalise on the higher prices will be so great that eventually it will outrun demand and a stockbuild will occur. This outflowing of oil to meet rising demand certainly occurs by the time $20/bl oil is reached. This therefore becomes a generalised ceiling on oil prices. And this is the situation at present with Saudi Arabia and to a lesser extent Iran releasing oil from their floating stockpiles off the US Gulf coast and Rotterdam. It also explains why the Algerian oil minister, Sadek Boussena, constantly reiterates the concept

of the Opec target price of $21/bl. Because what is at stake is the price at which Saudi Arabia and Iran release inventory and sell from these floating stockpiles.

The converse to rising prices is that when prices begin to fall oil producers are normally too slow to react by restraining exports. The result is that the market becomes saturated and the fall in prices becomes exaggerated. Prices only stabilise when producer exporters restrain their exports. This has in the past occurred around $10/bl when the financial pain experienced by producers was so great that there was great incentive for Opec countries to cooperate in a policy of production restraint. When relations between Riyadh and Teheran are as cordial, however, as is the case at present, this price stabilisation seems to occur around $15/bl. The $15 to $20 oil price in other words revolves around the Riyadh-Teheran axis. Secondly the $60 to $90 a t oil price scenario

The second cyclical theory deals with demand rather than supply. This argument runs as follows. Price is set at the margin and the marginal oil product is fuel oil. So the price of oil is determined by the buyer, in this case the power utilities, deciding at what price to buy the marginal product, fuel oil. In Europe the marginal buyers for fuel oil are the newly privatized British power utilities. Italy is a much larger fuel oil buyer than Britain but must buy fuel oil for base load. France, Belgium and the Netherlands rely upon nuclear and domestic gas. Germany is an inland market increasing tied into Soviet gas.

As a result British utilities set the price for fuel oil and this is why the price marker for fuel oil in Europe is now assessed at the River Thames. The British utilities regard oil as an alternative fuel source to imported coal. On this basis fuel is a better buy than coal at $60/t Thamesside. Between $60 and $90 the competitiveness of oil and coal depends upon inventory cost, interest charges and local transport costs. But at $90/t fuel oil is definitely uncompetitive with coal. In other words when fuel oil is at $60/t British utilities will be regularly in the market buying up oil and firming the oil market. But when fuel oil is at $90/t British utilities have no interest in the fuel oil market and demand will evaporate bringing the price down as well.

Traditionally the price of fuel oil has been 70 percent the price of crude. On this basis $60/t for fuel oil equates to $14/bl crude and $90/t fuel oil equates with $21/bl for crude. These figures of $14 and $21/bl neatly dovetail with the earlier argument of $15 and $20/bl. So these two cyclical arguments reinforce each other showing how crude supply increases and marginal demand disappears at over $20/bl but supply cutbacks tend to occur at the same time that marginal demand increases at below $15/bl. A balanced market would gently swing between the two as supply reacted to seasonal demand. The balance, however, could always be thrown out of kilter by an outside force such as a war in the Middle East. But is there an infrastructure crunch looming? Price oscillation paradoxically characterises a stable market. Regular or unanticipated supply or demand fluctuations are absorbed and cushioned by price movements which either suppress demand or encourage new sources of supply.

This evolutionary stable situation can be disturbed by events which overturn the rolling ship. Such an event was of course the invasion of Kuwait and the subsequent operation - Desert Storm. But there could be an equally disturbing situation slowly creeping into the market at present. It is possible that the industry is facing an infrastructure crunch

which will exaggerate the price oscillations and turn them into wild price swings as various parts of the infrastructure hit against the limit of their capacity.

There are three possible bottlenecks to watch out for. The first is on crude production. I said earlier that the world had never known a real crude oil production problem. But one may occur if international politics and UN sanctions prevents Iraqi crude reentering the international system. Demand in the fourth quarter of this year could reach 67mn b/d. Excluding production from Iraq and Kuwait this is perilous close to present production limits. This scenario is to my mind unlikely as both producers and consumers have become increasingly more rapid to react to price changes. Demand is likely to shift into alternative fuel sources or disappear into conservation measures. And new producers will be tempted by price rises before a price explosion can occur. But if Soviet exports continue to plummet and Kuwaiti and Iraqi crude remain out of the production equation then there could be a production crunch this winter. This is the reasoning behind Saudi Arabia's insistence on maintaining present high production rates despite high inventories and restrained demand. Saudi Arabia wants consumers to have access to oil through pre-established stocks in the event of a cold energy hungry winter.

The second bottleneck is on tankers and storage. For over a decade the oil industry has accustomed itself to surplus tanker tonnage. The very idea that there could be a shortage of tanker tonnage with resulting rises in tanker rates was preposterous only last year. If Saudi Arabia and Iran continue their independent policies of maintaining large oil stocks near consuming centres occupying storage and tanker tonnage then there is the very real possibility of capacity constraints being reached on both. The result can be seen over the past year as tanker rates have fluctuated widely, rising sharply when a bottleneck is created and falling sharply when the bottleneck no longer exists.

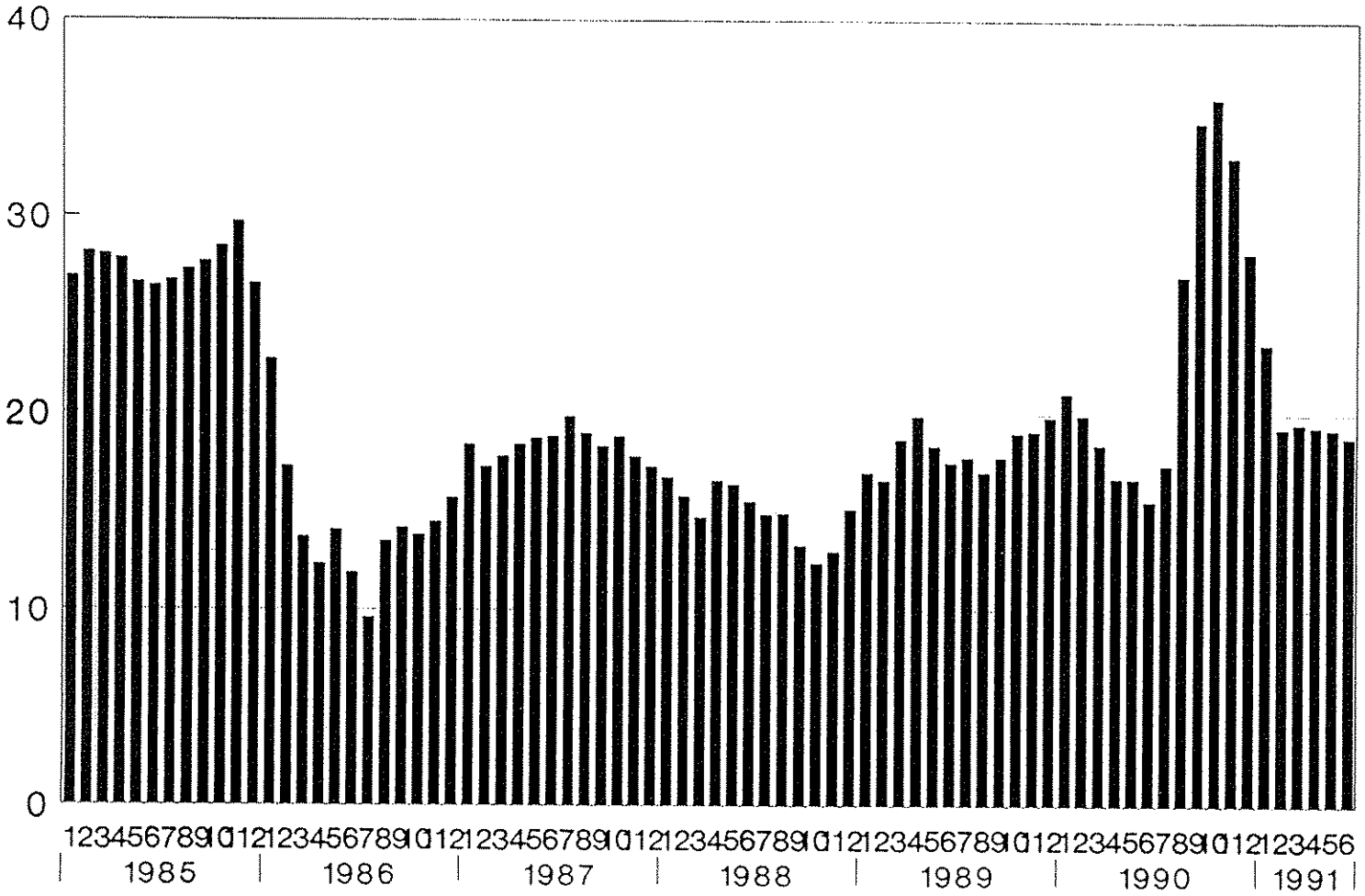
The third constraint is in refining. Analysts have been advising for many years of the possibility of a crunch in upgrading capacity in refineries. The most obvious effect was seen following the invasion of Kuwait when Kuwait's sophisticated kerosine producing refineries were lost from the Asian supply demand balance. The result was a rapid rise in Asian kerosine prices to over $70/bl which left the economies of many developing Asian countries reeling under the blow. A similar phenomenon has been projected in Europe and the US if the growth in gasoline demand continues. But each year the refiners amaze us all by tweaking their upgraded units and getting more vital gasoline out of the unwanted fuel oil.

But have we all been mesmerised by the possibilities of bottlenecks in upgrading at the expense of closing our eyes to the problems of the less glamorous distillation units. Distillation is the first process in refining and for the past decade European and Asian distillation has been mothballed or decommissioned in the wake of the collapse in fuel oil use. But are we now facing the prospect of increasing pressure for the output of distillation at a time when the construction of new distillation units is more difficult? Transport fuels and environmentally less polluting fuels are the areas for future oil demand growth. Both will impact on primary distillation. Jet fuel for aviation demand is a product of primary distillation. More environmentally friendly gasoline to be introduced in the US through the Clean Air Act will be the product of primary distillation. And environmentally less polluting low sulphur fuel oil for our power stations

is the product of primary distillation. Increasingly in the future the pressures will not be on cracking capacity but on distillation and an environmentally conscious Europe and America will make it very difficult for new distillation to be built.

In short refinery constraint could tighten up an oil market now oscillating between $15 and $20 a barrel. But paradoxically as the oil market tightens and consumers have to pay more for their gasoline and heating oil the very tightness on distillation space will mean that crude oil prices will begin to swing wildly. When there is refining capacity available crude oil will be in strong demand by refiners. But when the refineries hit distillation limit or storage is full crude prices will tumble as the refiners will not be in a position to buy crude. If there is an infrastructure crunch looming then the price oscillations of the past six years will appear like gentle swings of a price pendulum.

PRICE OF BRENT -$ PER BARREL
PETROLEUM ARGUS



OIL PRICE EXPECTATIONS AFTER THE CRISIS

A Report on Surrey Energy Economics Centre's Survey of Oil Price Expectations June 5th 1991

David Hawdon
Surrey Energy Economics Centre, University of Surrey

The seventh Surrey Energy Economics Centre survey of oil price expectations took place on June 5th 1991. Twenty six economists attending the Prospects for Oil Prices conference participated in the survey. We expected that its results would be affected significantly by the ending of the Iraq-Kuwait conflict and were therefore surprised to find that both the one year ahead and the five year ahead forecasts remained virtually unchanged from those of the 1990 survey. Table 1 shows that both in 1990 and in 1991, the median one year ahead prediction was for prices in the range $16-20 a barrel and the median five year ahead prediction was for $21-25 a barrel. The effects of the crisis are seen however in a widening of the distribution of expected prices with increases in the proportions both of those expecting $16-20 to prevail over five years (+8%) and those expecting 26-30 (+4%). This reflects a substantial loss of forecasting confidence in the wake of a political crisis which had not been foreseen. In spite of this there was a remarkable degree of agreement on the likely movement of prices, which has been noted in previous surveys. All except one of the respondents believe that prices will rise over the next five years.

TABLE 1. OIL PRICE EXPECTATIONS 1990 AND 1991

FORECAST MADE:

	JUNE 1991		APRIL 1990	
	1 YEAR TO 1992	5 YEARS TO 1996	1 YEAR TO 1991	5 YEARS TO 1995
$/BBL	%	%	%	%
<10	0	0	0	0
10-15	0	0	3	0
16-20	50	15	66	7
21-25	46	46	31	59
26-30	4	39	0	34
>30	0	0	0	0
MEDIAN	$16-20	$21-25	$16-20	$21-25

The survey asked participants to rank the major factors which they considered would influence prices over the next five years. The results are given in Table 2. They show that, as in previous surveys OPEC's ability to control production was considered to be the single most important factor likely to affect prices. This was enhanced by the significance attached to the reentry of Iraq and Kuwait onto the oil market. In comparison with 1990, the importance of OPEC control had increased slightly. The influence of demand on prices was the next most significant factor but its importance was unchanged as between the two surveys indicating unchanged expectations regarding demand growth. Developments in Eastern Europe although retaining the previous years ranking were seen as slightly less important. All other factors are perceived to have diminished influence, especially such things as environmental concerns, energy conservation efforts and even Eastern European developments, in the post conflict situation.

TABLE 2. MAJOR FACTORS INFLUENCING OIL PRICES OVER NEXT 5 YEARS

	FACTOR SCORES	
	1991	1990
Economic growth in the OECD	3.1	3.1
Financial problems in the developing countries	4.8	4.7
OPEC's ability to control production	1.9	2.0
Changes in other energy prices	4.6	4.3
Energy conservation	4.4	4.1
Environmental concerns and taxes	4.6	4.0
Developments in Eastern Europe	3.8	3.7
Re-entry of Kuwait and Iraq to the oil market	2.8	-
Value of US dollar	-	4.4
Other	5.0	4.4

(Scores range from 1 - highest to 5 - lowest)

A simple analysis of factor scores between those who expect higher than median prices (high pricers) and those who expect lower than median prices (low pricers) suggests something about the weight given to supply and demand factors - see Table 3. High pricers tend to emphasize economic growth - the main demand factor, and to downgrade OPEC control in their analysis of underlying factors relative to low pricers. Low pricers by contrast give a substantially higher weight to the reentry of Kuwait and Iraq into the oil market and a continuation of this influence over five years.

TABLE 3. FACTOR SCORES OF HIGH PRICE AND LOW PRICE FORECASTERS

	JUNE 1991 SCORES	
	HIGH	LOW
Economic growth in the OECD	2.6	3.5
Financial problems in the developing countries	4.6	5.0
OPEC's ability to control production	2.3	1.5
Changes in other energy prices	4.6	4.8
Energy conservation	4.6	4.5
Environmental concerns and taxes	4.7	5.0
Developments in Eastern Europe	4.1	4.5
Re-entry of Kuwait and Iraq to the oil market	3.2	1.5
Other	5.0	4.8

(Scores range from 1 - highest to 5 - lowest)

The period 1987 to 1991 has been a remarkable era in terms of oil price expectations. In most years analysts have expected short run stability in the $16-20 a barrel range (Hawdon, 1989, 1991). Even the relatively small rise in prices expected over the longer term - amounting to 6.3% per annum compound - amounts only to a modest growth in real terms. Given the history of oil prices it might be considered prudent not to bet too heavily on such projections.

REFERENCES

Hawdon, D, "Whither Oil Prices?" in P Pearson (ed), **Energy Policies in an Uncertain World**, Macmillan, 1989, pp 102-13.

Hawdon, D, "Future Oil and Coal Prices: A Survey Approach", in P Pearson (ed), **Prospects for British Coal**, Macmillan, 1991 (forthcoming), pp 171-88.