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PROSPECTS FOR OIL PRICES IN 1992 AND BEYOND

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PROSPECTS FOR OIL PRICES

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Let me begin by briefly reviewing what I said last June[1]. This will then enable me to consider two issues which I regard as crucial for the next couple of years.

My analysis of last June remains robust. The basic argument was that the oil price is set in an administered market. The administration is undertaken by the controllers of excess capacity to produce crude. The extent to which the administered price matches the market price is a function of two things. First, the strength and effectiveness of the market controller and secondly, the state of supply and demand and expectations in the market. The strength and effectiveness of the controller in turn is a function of three factors:

1. How much excess capacity is in the system? The greater the excess capacity, the harder it is to control.
2. If there is more than one controller, what cohesion exists? The less cohesion exists between the market controllers, the harder it is to control.
3. What objectives do the market controllers have with respect to price? The greater the divergence between objectives and market expectations, the harder it will be to achieve the objectives.

Last June the market could be characterized as follows:

- The market was operating close to capacity although there was plenty of oil above ground.
- What limited excess capacity existed was located entirely in Saudi Arabia.
- Saudi Arabia appeared to be following a low price objective.

Today the situation is little changed except that perhaps a little more excess capacity is available.

Such a market could be easily controlled if desired. The problems OPEC experienced in the 1980s in controlling the oil market arose because the relatively large amount of excess

[1] For greater detail see - P.Caddy, P. Davies, D. Hawdon, P. Stevens and J Toalster, Prospects for Oil Prices. SEEDS 59 July 1991, Surrey Energy Economics Centre, Guildford.

capacity in the system was spread around among the OPEC members. Currently, it is the concentration of excess capacity in a few places (mainly Saudi Arabia) which makes the market controllable.

Given this situation there are two questions which must be addressed. First, how long will the market remain controllable? This effectively is asking how long the relatively tight capacity will last which in turn depends upon when Iraq will return to the oil market and under what conditions? Second, while it remains controllable, will Saudi Arabia actually exercise control and to what end?

When Iraq returns, as it eventually must, it is likely that it will rapidly expand its export capacity. When Iraqi exports reach 2 million b/d or above, then the excess capacity within the Gulf members of OPEC will return and control will be much more difficult.

All the current signs are that Iraq will not be allowed to return while Saddam Hussein remains in power. When he will go is a matter of endless speculation. The only qualification to this view is if some upheaval, for example in Russia, Algeria or Libya cuts supply and causes prices to rise sharply. This would generate significant pressure for Iraq's return to contain the potential for a price spike.

While Saddam remains, there may be some exports of oil for humanitarian reasons and/or because the United Nations is seeking funds to meet its expenses associated with monitoring the various UN Resolutions. However, there are other possible sources for such funds such as Iraq's already frozen assets and Western opinion has shifted away from any concern it may have had for the suffering of the ordinary Iraqi. Even Turkish attacks upon the Kurds in Iraq now appear to go virtually unremarked. Also, there is a widespread view in Washington that the greater the suffering in Iraq the sooner Saddam will be deposed. In any case, in a Presidential election where slogans say "Saddam Hussein has still got a job. Have you?", it seems unlikely that any quarter will be offered before November.

While Iraq remains out of the market, what of the Saudi position? Clearly they are still intent upon going for volume and are willing to accept the consequent low price. Fears of an actual price collapse have however been assuaged by the view that the Saudis would not allow this to happen or if price did collapse, they would take quick action to reverse it. This may well be true, but in the past the Saudis have miscalculated - for example in 1985. They are perfectly capable of doing so again.

When Iraq does return, unless the consequent excess capacity can be controlled, prices will remain low and could well collapse. While Saudi Arabia is content to accept a low price, no plausible agreement is attainable other than possibly to prevent a price collapse.

Certainly, the rest of OPEC could not secure higher prices without Saudi consent. This could well be forthcoming although it would be unlikely to be an explicit switch of policy. There are many reasons connected with revenue pressures and the need politically to accommodate other Gulf countries which could trigger such a change. However, while the Saudis pursue volume, the short term prospect, absent a political upheaval, is that oil prices will remain relatively weak ie below the $21 price agreed in July 1990.

PROSPECTS FOR OIL PRICES

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PROSPECTS FOR OIL PRICES

Two factors which facilitate a common understanding on such an occasion as this are, first, a definition of the oil price under discussion; and secondly, placing the present in an historical context to help evaluate any weighting of past influences in the markets which could affect the prospects.

First, the definition. The prices talked about in this paper are the prices of crude oil and products traded internationally and which are reported each trading day from the half a dozen main markets around the world. There is normally a difference of several dollars per barrel between, say, the Dubai price in the Middle East and West Texas Intermediate (WTI) in the USA. So Dubai could be priced at $ 15/barrel whilst simultaneously WTI could sell for $ 19/barrel reflecting differences in the value of the product yield, the location and freight and the different markets for which these crudes are regarded as "Markers".

Secondly, the historical context. Crude oil prices today are within the relatively narrow band which has prevailed for several years, apart from temporary deviations when oil supply has been severely disrupted or in considerable surplus. Whether oil prices will remain in this band over the next year or two will depend upon the relative significance of a variety of driving forces. These are a mixture of macro and micro effects and can be categorised either as market fundamentals or as market perceptions and the fascination of the markets is that they change frequently. A key short-term fundamental is of course, the seasonality of oil demand as the northern winter comes to an end and gives way to the summer driving season. This year, World oil consumption is expected to decline by some 4 million barrels/daily between the high level of February and the trough in May and then build again to another peak in December. In terms of the cut of the demand barrel kerosene and gasoil used for heating and fueloil consumption will fall and gasoline demand will rise during the next few months. Not only is the volume changing, but the specification is changing also as refiners turn from the manufacture of winter grade gasoil to summer grade and in several US markets the vapour pressure in gasoline becomes more stringent and in many markets demand for unleaded gasoline increases. Additional to the regular pattern of seasonality of demand is the short-term effect of abnormal temperatures. For example, oil demand in OECD

countries in February was about 0.5 million b/d below expectation due to warmer than average temperatures. This effect is particularly difficult to predict, it could just as easily have gone the other way if colder temperatures had been experienced. In consequence, stocks of heating oil will now be higher than originally planned and may constrain refinery operations in the coming months. Refiners' preferences will in any case switch for a while from crudes with a high gasoil yield to those with a high gasoline yield and this should be reflected in changes in relative prices.

On the oil supply side of the equation the fundamentals include the extent and timing of maintenance work on facilities. In the upstream, production in several fields will be shut down during the second quarter in, for example, the Norwegian and UK sectors of the North Sea and in Saudi Arabia. As a result, there is likely to be a loss of some 0.5 million b/d of light, low sulphur crudes and a similar volume of heavy gravity crude for a time. In the refining sector, units have been shut down for routine maintenance during the first quarter in the US, where temporarily one million b/d of capacity has been taken out of operation, followed by the maintenance programmes in Europe and finishing in the East, where shut-downs are scheduled to peak in May. There is, therefore, something of an offset in the impact of maintenance on the demand for and supply of crude, although the timing does not fully coincide. In fact, many refineries in the Atlantic Basin will return to operation as crude production falls. Whether the routine field maintenance combined with the reduction of one million b/d or so in OPEC production in March towards its ceiling of 22.982 million b/d(agreed in mid-February) will tighten supply sufficiently is the key to crude price levels in the short-term. Crude oil stocks are adequate in the main refining areas but in some locations certain types of crude are tight. Thus, for example, abnormally severe weather conditions in recent weeks has disrupted and delayed crude movements through Egypt's SUMED pipeline into the Mediterranean at the same time as production difficulties and administrative problems had greatly reduced the export of Russian Urals crude from the Black Sea. The price of Middle Eastern medium and heavy grades has consequently strengthened as reflected in the narrowing differential between Dubai and North Sea Brent prices and the reduced discount of Iranian Heavy off Brent.

However, changes in crude prices can also be driven by changes in product prices. Currently, the ratio of gasoline and fuel prices on the Rotterdam market to the price of Brent is very low compared to the normal seasonal pattern, with gasoil at about the middle of its range. If gasoline prices do not improve relative to crude, refiners' margins will remain low and refiners are likely to cut crude intake to avoid uneconomic operations. The lower call

for crude would then exert downward pressure on crude prices unless producers respond with lower production. Conversely, strength in product prices relative to crude would tend to encourage refiners to process more crude and would subsequently raise crude prices.

This leads to another important factor which will influence price prospects- market perceptions or how participants in the market view the prevailing demand and supply balance and the likely prospects for prices. The main focus is on the following issues: the erratic nature of oil exports from the Commonwealth of Independent States and the potential for greatly reduced volumes overall compared with previous years; the rate of economic recovery in many OECD countries; the slower rate of economic growth in the East and how this will impact on oil demand; and the very significant issue of the relative balance between crude capacity, production and demand and whether OPEC will implement fully its February agreement to cut production. In the background remains the scheduled OPEC meeting on 24th April, which acts as a form of safety net since if prices fall too far the market will expect further OPEC cuts, countered to some extent by the uncertainty of when oil exports will resume from Iraq and at what rate. Perceptions in turn will influence the view of stock levels and the stock policy of refiners. The same level of stock can appear ample or sparse, depending on the perception of supply and price prospects (stock losses affect the bottom line in the company accounts).

So what can be deduced from the fundamentals and perceptions as outlined above about price prospects in the short-term?

CONCLUSIONS

World oil demand will decline seasonally in the second quarter and rise in the second half year. The continuing decline in demand in Russia and Eastern Europe will partially offset the demand growth elsewhere and the net world oil demand growth in 1992 is expected to be approaching one million b/d above 1991. Crude oil supply in 1992 from countries outside OPEC is likely to be close to the 1991 level, with an increase during the second half year. Consequently, the call on OPEC crude will be higher this year than last. How much higher will depend on the extent to which refiners,consumers and producers will be prepared to hold oil stocks. There is scope

for OPEC crude production to increase by approaching one million b/d, but discipline will be needed to phase it in line with the call. Otherwise a stock overhang could unsettle the market and OPEC's objective of supporting oil price levels against the background of

increasing production capacity would become more difficult. The price of OPEC's crude basket is currently over $ 4/bbl below its target of $ 21. Achievement of the target, certainly for a sustained period, in the next year or so is considered unlikely,barring any major oil supply disruptions or severe weather. A price collapse to $ 10/bbl or lower is also considered unlikely, due to the revenue needs of OPEC Members. The fundamentals, then, indicate a continuation until at least next year of the basket price in its relatively narrow range between $ 15 and $ 20/bbl, with perhaps some temporary fluctuations outside. A view of the demand and supply balance during the next few years suggests there is little awaiting beyond the horizon to change this prospect.

OIL PRICE PROSPECTS

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INTRODUCTION

The oil price issue, whether discussed in a short, medium or long term context, provokes considerable interest in governmental, commercial/industrial, financial and academic circles, due to its pervasive and extensive influence on economic activity world-wide, inflation rates and unemployment levels, as well as such relatively parochial matters as OPEC and corporate revenues, oil industry investment plans and exploration activity. However, despite the widespread interest verging on occasions on paranoia or euphoria depending upon the extent of price movements and one's perspective and self interest, the overall quality of analytical input into the discussion is disappointing and the track record of forecasters leaves a lot to be desired. It is interesting to speculate on the possible reasons for this apparent dereliction of duty. One of the principal reasons for the inadequacy of analytical input may be found in the methodological approach adopted by many commentators. In this paper, four different, popular approaches will be considered and an alternative method will be proposed.

Whilst we await the development of a rigorous theoretical framework within which to evaluate the phenomenon of oil price movements some progress may be effected by an amalgam of approaches, with the traditional supply and demand model being supplemented by observations regarding political and social developments in particular countries or regions, together with an assessment of emerging and prospective technological achievements. In this way it should be possible to identify the critical influences at work, from which it should also be possible to select either the single most important variable or combination of variables, affecting the oil price. Moreover, it is my belief that the crucial variables influencing the oil price almost certainly, are more likely to be political and social, rather than economic.

In this context and notwithstanding the fact that there is only a minimal level of surplus productive capacity in the world oil industry at present (perhaps 1-2 million b/d albeit rising rapidly), it is reasonable to conclude that oil prices will average around $18-19 a barrel for North Sea Brent in 1992 and 1993, with oscillations of $2-4 a barrel either side, rising slightly in 1994 to $19-20 a barrel and to $20-21 a barrel in 1995. Thereafter, the most likely

outcome is for a rise in line with inflation (say $1 a barrel p.a.), with no prospect of an upward spike, because demand will be weaker than most commentators expect up to the year 2000, whilst OPEC oil supplies will be substantially higher than the consensus forecast.

This oil price forecast is based on an evaluation of emerging economic and political trends in the industry, placed within the historical context of evolution. In particular, it arises because this price corresponds to the general level desired by Saudi Arabia for a variety of reasons of which the most important is the refusal to return to its previous role as swing producer within OPEC. This oil price forecast would be robust under most scenarios including a limited air strike by the US and its allies against Iraqi military sites. Thus, in contrast to conventional wisdom (itself a fickle variable rather than a reliable constant), the long term economic imperative is neutral and constrained, rather than strongly positive as die-hard optimists maintain.

It is intellectually honest to identify, if possible, under which circumstances a central forecast could be wrong. In this case it would require a dramatic change in the emerging constrained energy world, to effect a review of oil price prospects. After all, few if any forecasters foresaw the demise of the USSR and Communism in the eastern bloc. Whilst economic forces will continue to act as either a depressant or constraint on oil prices into the next century, political/social/religious developments could radically transform the energy scene for a number of years, before an economic backlash propelled prices down again.

Two possible scenarios spring to mind namely: the overthrow of the ruling families in Saudi Arabia and Kuwait due to the rising tide of Islamic fundamentalism and secondly, a volte-face by OPEC in unison, possibly for conservation reasons or as an extreme reaction to the proposed imposition of a carbon tax, to move to a high energy price world accepting all the consequences that this implies. These possibilities would represent momentous events. For example, the House of Saud dates back in its present form to 1902 when Ibn Saud took Riyadh from the Rashid family, whilst the Al Sabah family in Kuwait pre dates the 1899 agreement between Mubarak Al Sabah and the UK to establish a protected state relationship. It would not be easy to remove a ruling elite which has exercised power for generations. Likewise, for OPEC to change decades long oil policies regarding desired output maximisation, would necessitate an unprecedented change of heart.

TRADITIONAL APPROACHES TO OIL PRICE STUDIES

There appear to be four discernible traditional approaches to the problem of forecasting the future trend of oil prices, but none of them provide a completely satisfactory framework within which to draw legitimate conclusions.

(1) The Supply/Demand/Stocks Model

This is the approach favoured by many commentators particularly those with an economic bias, because it is designed to encapsulate in one approximate model all the economic or physical elements in the equation, namely: supply from all sources including the CIS and remaining Communist states, demand world-wide for crude oil and natural gas liquids and changes in stock levels often treated as a residual or balancing item. Such models are usually constructed on a quarterly or annual basis and are frequently revised, sometimes substantially as events unfold and predictions change to accommodate new circumstances. One of the problems with this approach is that the underlying data, even for previous years are inadequate and different reputable agencies and companies cannot agree, hence the base is suspect.

However, the main criticism centres on the fact that it cannot incorporate such non quantifiable elements as desired price targets, national pride considerations and long term strategic objectives. To the extent that such models are used simply to draw attention to emerging trends and are used as the starting point from which other influences can be evaluated, they can be useful. Regrettably, they are often seen as an end in themselves with the conclusion being drawn that whenever capacity utilisation rates for the residual supplier (OPEC) reach a prescribed, magical level, say 80%, there will be automatic and ongoing upward pressure on oil prices.

This analysis has persisted for years and incorrect conclusions have been drawn regarding inevitable upward pressure on oil prices, despite the observation that oil prices are falling in both nominal and real terms. The popularity of this approach, despite its all too evident shortcomings, can be attributed to its intuitive appeal.

(2) Trend Extrapolation Approach

In its various guises this approach leans heavily on the assumption that whenever a trend becomes firmly established it will continue indefinitely irrespective of any other consideration.

This technique has been somewhat discredited in recent years, but old habits die hard particularly amongst a certain breed of corporate planner. There is nothing to commend this approach and it is likely to die a natural death as oil prices drift aimlessly for years buffeted merely by political fears and false hopes of the emergence of a brave new world order.

(3) The Preconceptions Approach

It is perhaps presumptuous to dignify this attempt to cast light on the issue as a legitimate approach to evaluating oil price trends, depending as it does on the inbuilt belief that there are highly positive (upward) underlying pressures on oil prices.

It can be observed that a number of commentators start their analysis with the inherent and unquestioned presumption that (a) oil demand growth world-wide will continue to rise relatively strongly for an indefinite period as the LDCs and particularly the Pacific Rim countries industrialise and experience significant and sustained advances in living standards (b) oil supply is likely to be constrained in the future in the non OPEC world (some advocates move further along this continuum and state that the same principle applies to the OPEC world also due to cash constraints!) and (c) OPEC will always use its bargaining power to force through higher oil prices whenever they possess the power to do so.

Each of these presumptions is open to question to such an extent that they can be regarded as being a left-over from a previous age -decades old- when it was fashionable to talk of impending oil shortages, combined with unbounded optimism regarding demand growth, reminiscent of the halcyon days which disappeared circa 1973. There is more than a trace of wishful thinking in this "approach" but it lingers on in some quarters, particularly where there is a strong vested interest in the attainment of ever rising oil and gas prices.

(4) The Kitchen Sink Approach

Once again, it is a matter of stretching the definition of the word "approach" to its limit, to include a methodology comprising the enumeration of a mishmash of positive, negative and neutral influences on the oil price. Nevertheless, it is an increasingly popular approach because it represents a relatively sophisticated method of avoiding reaching a conclusion at a time when forecasting is perceived to be a hazardous exercise. In its most sophisticated and heinous form, proponents adopt a comparatively optimistic assessment of underlying

influences and conclude disingenuously, with a pessimistic prognostication. This can be classified inelegantly as a case of "having one's cake and eating it".

By incorporating every conceivable outcome under the guise of extensive and unstructured scenario appraisal, commentators hope to safeguard their credibility. In truth, the opposite is the case. Factors under discussion usually include a repeat of widely held possible outcomes, with the most recent fashion (pre 1992) favouring shortfalls from the CIS as it disintegrates into civil war, combined with the possibility of a severe winter and potential supply disruptions in the non OPEC world, as producers struggle to maximise output.

There is a strong intuitive appeal to this "approach" because it is perceived to be pragmatic and realistic, whereas in reality it merely represents an inability to differentiate between the relevant and the irrelevant, with no weight being attached to probabilities. As a predictive tool it is valueless and intellectually it is unsatisfying at best and boring at worst.

AN ALTERNATIVE ECLECTIC APPROACH

An alternative method of examining oil price trends could be based initially on the supply/demand/stocks model, insofar as this provides a useful framework within which to identify critical factors and trends, particularly if a suitably long time span is considered. Thereafter, political and social dimensions can be added, with an assessment of the relative importance of each influence together with an appraisal of how all the individual components fit together. By this means it ought to be possible to avoid the worst pitfalls of the standard evaluation process and add value by examining other powerful and often dominant influences on the determination of oil prices.

Accordingly, the following analysis is designed to provide a fresh look at oil demand and supply whereby other elements are woven into the numerical approach.

(1) Oil Demand

Over the years forecasters have experienced problems forecasting oil demand- they are either too high or too low usually by a large and growing margin. Equally, whenever adjustments are made they tend to be too little and too late. It is important to know why forecasts err on either side and if possible to benefit from this knowledge. There is a tendency to underestimate the importance of new factors and become too preoccupied with powerful

trends just before they lose their strength. Currently, there is a blind spot regarding environmental issues but this factor in itself at the very least is likely to negate any benefits from subsequent economic growth as we approach mid decade and it could easily produce an ex growth industry within 5-7 years.

It is instructive to note that forecasters in almost all countries have been too optimistic over growth prospects for the last two years with regular downgradings becoming the norm. This trend will continue and gain momentum, initially in the USA (already approaching an ex growth state) and latterly in Europe. Although the economic recession accounts for part of this phenomenon, the larger part derives from technological advances with a gradual but persistent decoupling from economic growth.

World Oil Consumption Growth Rates 1860-1990

	% p.a. compound	Comment
1860-70	27.5	
1870-80	17.9	High Growth
1880-90	9.9	
1890-1900	6.9	
1900-10	8.1	
1910-20	7.9	
1920-30	7.5	Robust Growth
1930-40	4.0	
1940-50	6.0	
1950-60	7.2	
1960-70	8.0	
1970-80	2.8	Sluggish Growth
1980-90	0.3	Minimal Growth
1990-2F*	0.5	

*Note * Latest IEA forecast*

There has been a continual slowing in the rate of increase of world oil consumption computed on a 10 year compound growth basis for each decade since 1860. Prior to 1890 growth was generally in double digits and can be categorised as strong, whereas between 1890 and 1970 it ranged between a low of 4.0% p.a. during the depression of the 1930s to 8.1% in 1900-10 and was also strong in the 1960s at 8.0% p.a. This period can be described as robust. The picture changed dramatically after the 1973 oil price rise compounded further

by the 1979/80 price increases and growth slowed dramatically to 2.8% in the 1970s when it can be called sluggish, falling in the 1980s to a barely perceptible 0.3% p.a. which I describe as minimal. The advantage to be derived from this approach is that it encompasses a number of trends such as the large scale replacement of coal by oil in the early period as well as the growing share of the service sector, rising energy efficiency and conservation and latterly decline of fuel oil consumption.

The question arises as to the likely trend in the 1990s and beyond, with most commentators drawing relationships between energy and oil demand and changes in GNP, throwing in hope value for the Pacific Rim for good measure and blaming current weak oil demand on the world recession. According to the latest IEA publication, the rate of growth of world oil demand has crept up slightly to a still barely perceptible 0.5% p.a. between 1990 and 1992 on its forecast. Thus, minimal growth has persisted into the new decade and most forecasters for the last year have been forced to trim back their already low estimates. The consensus view, for what it is worth, is that world oil demand will rise at 1.5% p.a. up to the year 2000.

In view of recent -12 year long- historical trends and other key developments such as the gradual emergence of market pricing in the CIS and the all-important burgeoning environmental awareness issue as well as continuing technological gains throughout a broad spectrum, it is likely that the trend towards reducing demand forecasts will continue unabated for some considerable time. Allowing for gradual economic recovery, ongoing technological advances affecting operating efficiencies and conservation generally, as well as the pervasive influence of measures designed to protect the environment, it would be surprising to see oil demand even reaching 1% p.a on average in the 1990s and it could become ex growth before the year 2000.

(2) Oil Supply

It is self evident that the former Communist bloc countries and non OPEC, have produced as much oil as was physically possible for decades, leaving the producer cartel OPEC to bear the strain of imbalances between supply and demand after allowing for desired changes in stock levels. If OPEC had not performed this role of residual supplier, oil prices would have to fall to a level sufficient to clear the market of surplus oil, possibly equivalent to a landed price for Brent in north west Europe of around $7-10 a barrel for a period of years.

OPEC performed the role of residual supplier extremely effectively for a number of years after the 1979/80 oil price rise, but the strain was becoming intolerable as we entered 1985, with output from Saudi Arabia falling from 10.3 million b/d in 1980 to only 3.7 million b/d in 1985 including the Neutral Zone. In percentage terms the fall amounted to 63.6% compared with only a 20.8% decline for all other OPEC members on average over the same period. Magnanimity has its limits and it is beyond doubt that this limit was reached and exceeded long before 1985.

However, the Saudis tend to be slow to react but when a reaction does occur it tends to remain in place for a long period. The reaction occurred in 1985 following a meeting in Taif attended by King Fahad when it was made clear to other OPEC members that the Kingdom could not bear the burden alone. The message was ignored, netback deals were effected, oil production rose from a low of 2.5 million b/d in mid 1985 and the world oil market duly collapsed in 1986. However, after this debacle, the Saudis were determined not to repeat the mistake and indeed they see no reason why their wishes for price moderation and a substantial share of OPEC production should not be forthcoming for years to come.

This line of analysis provides an insight into the current state of play in the world oil market where many observers cannot understand: (1) why Saudi Arabia is adopting such an apparently aggressive stance and (2) why OPEC does not simply reduce output by a further 1 million b/d and thereby strengthen the oil price to the OPEC basket target price of $21 a barrel, equivalent to $22 a barrel for Brent. Such commentators seek refuge in the belief that Saudi Arabia is trying to please the USA after the Gulf war as though the USA had an oil policy and knew what oil price it desired!

Like all popular myths there is always an element in truth in them and in this case it would be surprising if Saudi Arabia did not want to show its appreciation to the USA and its allies. However, it has already done so by ensuring that oil flowed in sufficient volume to meet the West's needs during the period before and after the war and also ensuring price moderation during a period when it could easily have spiked upwards and aborted an already feeble World economic recovery. Saudi Arabia has repaid its debt both in cash and in kind and there is no reason to believe that it wants further oil price weakness. Currently, the Kingdom is acting in its own best interest because it knows that if it reduces output by more than the same percentage as most other OPEC members then its share will be taken willingly by other producers.

Opec Production Capacity[1] 1992-5

	Current Production	1992	1995
Iran	3,500	3,800 - 4,200	4,600 - 5,000
Iraq	350	2,800 - 3,200	4,000 - 4,500
Kuwait[2]	610	650 - 1,650	2,500 - 3,500
Saudi Arabia[2]	8,625	8,750 - 9,000	9,500 - 10,000
UAE	2,375	2,500	2,600
Qatar	325	450	550 - 600
Mideast OPEC	**15,785**	**18,950 - 21,000**	**23,750 - 26,200**
Algeria	800	800 - 850	850 - 1,000
Ecuador	295	350 - 380	390 - 410
Gabon .	260	300	400
Indonesia	1,425	1,400	1,400
Libya	1,550	1,750	2,100
Nigeria	1,850	2,100 - 2,300	2,300
Venezuela	2,300	3,200	3,300
Total OPEC	**24,265**	**28,850 - 31,180**	**34,490 - 37,110**

Note: 1. Crude oil only, excludes natural gas liquids and condensates. Based on estimated sustainable, rather than surge capacity.
2. Includes 50% of Neutral Zone.

Moreover, the situation is even worse than this from the Saudi perspective because capacity expansion is continuing apace in several countries whilst Kuwaiti output is building up strongly and Iraq is waiting in the wings to re-enter the world market. In addition, several OPEC members are welcoming oil companies back to the country in order to benefit from their expertise, financial muscle and marketing outlets. Furthermore, they see the environmental movement gaining speed and joint ventures with companies with some political clout are perceived to be valuable at such fraught times.

Hence, the key to understanding the present state of play in the World oil market is to identify the motives behind Saudi Arabia's production policy and its national aspirations. The Kingdom possesses the power to maintain oil price moderation for many years to come and it is in its long term interest to do so, bearing in mind the sheer size of its reserves and the fact that when oil prices spiralled skywards in 1979/80, non OPEC production rose sharply, technological developments received a major boost and Saudi Arabia suffered to an intolerable extent. The lesson has been learnt well.

OIL PRICE FORECAST

In view of the above observations it would be reasonable to deduce that the preferred price range for the principal player -Saudi Arabia- is equivalent to around $18-19 a barrel for Brent possibly for the next two years rising thereafter in line with inflation (say 5% p.a). In recognition of the inevitable volatility of prices, a range of perhaps $2 a barrel either side can be anticipated. If oil prices moved outside this range for any prolonged period it would be equally reasonable to expect that corrective forces would come into play.

THE CAVEATS

From the foregoing comments it is self evident that the dynamic forces at work in the industry suggest strongly that oil prices will be constrained probably for the rest of the decade at around current levels in real terms. Indeed, they have been constrained since the mid 1980s as the industry struggles to adjust to the immense corrective forces unleashed by the 1979/80 oil price rise following shortly on the heels of the 1973 increase. Thus, it would require an equally powerful force to emerge to provide a countervailing offset. Two possibilities exist.

The Gulf war highlighted the tensions which exist in the region due to lack of democratic processes although such feelings are hidden from public - ie foreign- gaze. Meanwhile, the tide of Islamic fundamentalism is rising strongly and it could conceivably swamp the ruling families in both Saudi Arabia and Kuwait. A combination of both civil strife and potential change in output policy would be more than sufficient to raise oil prices onto a higher plateau.

OPEC has been firmly entrenched in a reactive, defensive mode, since 1980 when oil prices surged towards $40 a barrel causing oil demand to fall away sharply and non OPEC production to surge ahead whilst technology and conservation was given a massive boost. However, this mood could change with the impetus coming perhaps from a violent reaction to the proposed carbon tax on the view that consumer governments are securing the economic rent due to producing countries. This mood would be reinforced by the realisation that oil is an irreplaceable resource and should be conserved. Under these circumstances OPEC may advocate a high energy price scenario accepting the inevitable consequences as long as quota allocations are acceptable. This would represent a dramatic sea-change from the present policy of Saudi Arabia.

Whilst both possibilities exist a low probability must be assigned to each currently, but conditions could change in the future. The oil industry is exciting and challenging precisely because it is subjected to a wide variety of influences with dramatic changes occurring on occasions. For the last two decades there have been three major events - the 1973 Yom Kippur war followed by 1979 overthrow of the Shah of Iran and latterly the 1990 invasion of Kuwait by Iraq - none of which was economic. The underlying economic influences act as a depressant on the oil price with upward pressure arising solely from political events. No change in causation is likely for at least another decade.

PROSPECTS FOR OIL PRICES

Peter Caddy, Petroleum Argus

Nine months ago I had the pleasure of addressing this seminar on the topic of Prospects for Oil Prices.

My argument then was that oil prices were condemned to oscillate between $15 and $20 a barrel. Like all good arguments it proved to be wrong but the pattern of price movements we have experienced since then is not too far from the one I suggested last year.

Since July the price of North Sea Brent crude has risen to $23 a barrel in October before falling to $17 a barrel in January. The Opec basket price was about a dollar a barrel below the price for Brent.

Opec production during the same period had a similar profile, rising before falling, but with a two month delay to the price movement. Production rose peaking in December and has been falling since.

THE PRICE WAVE

The thrust of the $15 to $20 a barrel oil argument rests on the anticipated reaction of crude producers to price movements and to a lesser extent on the anticipated reaction of consumers to fluctuating prices.

At $20 a barrel the profits from producing crude are so great that the temptation for oil producers, particularly Opec countries, to produce more than the market will bear, or more than Opec countries had agreed at their market monitoring meetings, is overwhelming. This steady growth in production inevitably leads to an over supplied market leading to an involuntary build in stock levels either by oil companies or by oil producers.

These stock levels then weigh on the market until oil companies begin to fear an oil price fall and rapidly liquidate stock in order to avoid a stock loss when prices do fall. The result is that stock release gives prices the kick downwards leading to a rapid readjustment towards the $15 a barrel level.

This price fall is possibly accelerated by consumers, who are becoming increasingly more sophisticated in their reaction to price movements, by switching energy sources and conserving on oil use. Any reduction in demand at or above $20 a barrel helps tip the scales in the supply demand balance and provokes a further downward price adjustment.

Conversely at $15 a barrel the fear of a price collapse down to the terrifying depths of $10 a barrel or less focuses the collective mind of oil producers, especially those in Opec, and as in February leads to agreed and coordinated output restraint.

This reduction in supply, as is now happening, helps stabilise the market and eventually encourages the build of inventory in anticipation of a tighter market and higher prices later in the year. At the same time more consumers are likely to be reentering the oil market as oil prices fall below the price of competitive and alternative fuels.

This oscillation in price is likely to continue until an outside event, such as another War in the Gulf, kicks the market into a rapid or even panic stricken response. The threat of a supply shortage in these circumstances leads to inventory build as buyers scramble to safeguard their supplies. This initially adds to the price spike but eventually contributes to a rapid price fall.

SIGNALS UP THE SUPPLY CHAIN

This wave in prices, although appearing to suggest price instability, in fact shows exactly the opposite. Steady oscillation between a low price level that leads to new customers and a high price that encourages customers to switch to alternatives is a sign of a stable market. It is stable because there are always signs available in the market from consumers to producers which should enable producers to respond quickly to consumers needs. Producers can then act with the intention of either maximising their profits or their market share.

This transmission of information up the supply chain from customer to primary producer is the vital link that enables output to respond to the price that customers are prepared to pay for the product. If producers refuse to respond to the signs given them by consumers then prices are in for a major collapse. Even if producers attempt to hold prices steady through rigid output control there will always be the threat that eventually one producer will no longer be able to restrain output and absorb the loss of revenue. Instead one producer could resort to greater production so taking prices into a free fall.

THE RUSSIAN CRISIS

In the third quarter of last year crude prices fluctuated between $19 a barrel and $20 a barrel.

This relative price stability had been a feature of the market from January. The primary reason for this market balance was the decision by Saudi Arabia to build up stocks when consumer demand did not absorb all the oil making its way to Europe and the US from

the prolific fields of the Middle East. This stopped prices falling in the summer. And then in the third quarter Saudi Arabia released stock and put more oil onto the market in response to higher than anticipated consumer demand than could be met from well head production. This prevented a sharp price rise.

This active stock policy by Saudi Arabia balanced the market when it was over supplied and balanced it again when it threatened to be under supplied. More importantly the response to changing consumer demand was instantaneous as the stocks had been built up close to Rotterdam and Houston either in storage terminals or on ships rather than being stored in Saudi Arabia which would have involved a 45 day voyage and therefore a 45 day delay in getting oil to the customer.

So successful was this balancing act that even the August coup in Moscow and the greatest revolution in the political framework of Europe for half a century failed to disturb the equilibrium in oil prices. Revolution and chaos in the world's largest oil producer and the biggest supplier of oil products to western Europe was absorbed by the market with only a price ripple.

Eventually, by October, even Saudi Arabia's stocks were exhausted and oil companies looked anxiously at the situation in Russia. Prices then rose as oil company supply departments prayed for a steady flow of Russian oil and a mild winter. Both prayers were answered. And Opec supported the hand of fate by increasing output to meet the needs of oil consumers throughout the world. Prices rose but the response by Opec countries ensured that they did not rise by as much as they otherwise would have done.

By November sufficient stocks had been accumulated by oil companies to dissipate any anxiety about cold weather causing a price spike. Even the threat of a Russian seizure in oil supply did not cause the market any fear. This was just as well because Russian exports collapsed in December.

The collapse in Russian supply and the dry winter, which raised oil demand because lack of rain or snow affected hydro electric output, stabilised prices at a floor of $17 a barrel for Brent. And this is the situation in which we now find ourselves with Opec reducing output in order not to swamp consumers in oil and with Saudi Arabia being prepared to rebuild stocks if necessary rather than see any further price slippage.

AN UNPREDICTABLE SUMMER

The point about this period of relative price stability is that it was achieved despite political upheaval and potentially catastrophic disruptions in the supply of oil to consumers throughout

the world. This was because oil producers reacted quickly and efficiently to changing patterns in consumer demand. And there is no reason to assume that consumers would not have reacted equally as quickly if prices had temporarily got out of control.

The correct reading of signals from consumers up the supply chain by producers unrestrained by political considerations such as oil embargoes should continue to ensure a price stability unseen since the days when seven internationally integrated companies dominated global oil movements. This is not to say prices will stay exactly the same, just that they will be bound within a trading range set by anticipated producer and consumer responses to the fluctuating prices.

The problem for producers is, of course, correctly reading the signals presented to them by consumers.

READING THE SIGNALS

Reading the signals is by no means an easy task. A comparison of the Opec projections for world demand this year and the International Energy Agency's projections for world demand show major discrepancies.

For the second quarter of this year, when world demand is at its lowest, both Opec and the IEA agree that world demand for Opec oil will be around 22.7mn b/d. But as the winter season approaches Opec foresees consumers building stocks in the third quarter and anticipates the call on Opec oil to be 700,000 b/d higher than the call anticipated by the IEA. During the fourth quarter the reverse is the case the IEA foresees demand for oil being 700,000 b/d higher than that foreseen by Opec.

Responding to consumer demand with the right level of production is the key to market stability. If the Opec countries follow their secretariat's projection but the IEA's projections prove to be correct Opec will have swamped the market in the third quarter encouraging price weakness and will starve the market in the fourth quarter possibly leading to price spiking.

THE ELUSIVE ASSESSMENT OF DEMAND

I have tried to lay great emphasis on the difficulty in assessing demand. This difficulty is two fold. Firstly because it takes a Middle East producer 45 days to get his oil to the market the producer has to anticipate demand two months in advance. Secondly the producer has no accurate or fast method of assessing demand trends.

Supply information is available quickly. It is possible to produce estimates of Opec production at the end of the month and also to guess next month's production from the response of Opec countries to oil company's requests for oil. But demand estimates are fragmentary and delayed. The problem facing an Opec producer in feeding the right amount of oil onto the market is like driving a car but while facing backwards.

Of course even if Opec countries knew precisely what demand trends were doing they would still have the problem of assessing the two imponderables which dominate oil company planning. The first is the state of the world economy and the second is the weather. If the world economy, particularly the US economy, had not been in deeper recession that forecast

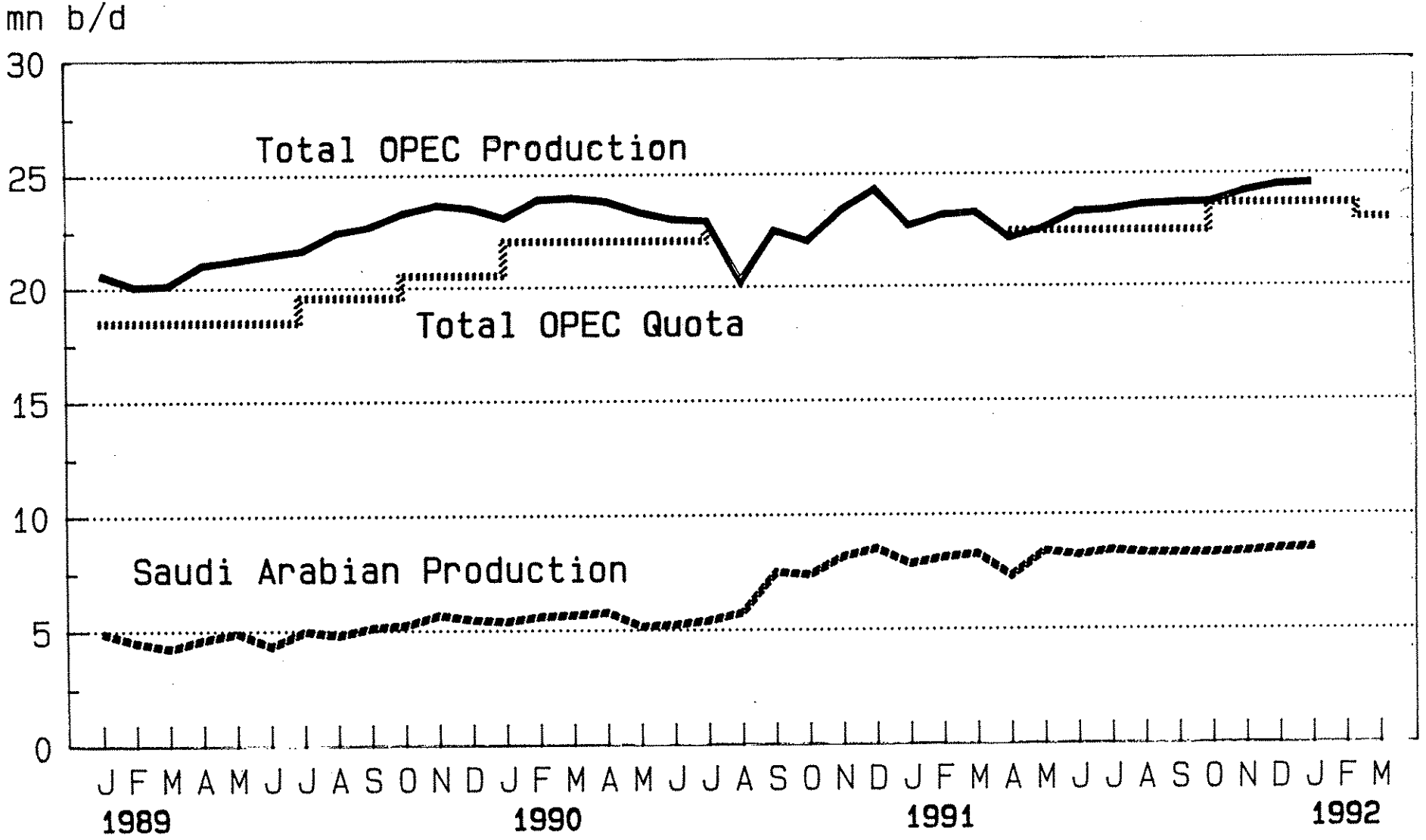
last winter and if the winter had been as cold as an average winter then the demand for oil would have been higher and the price for oil would also have been higher.

So forecasting the price of oil is pretty easy. First forecast the timing of the international economic recovery and then correctly assess the speed of the recovery. Second forecast the length and the severity of the winter in the northern hemisphere. Third accurately predict political events in the Middle East and the former Soviet Union.

It is a tribute to the oil industry as a whole that it is able to do this, or at least can react as quickly as it does once events take their course, and can do so ensuring a steady supply of oil to the customer at reasonable if somewhat volatile prices.

FACTORS AFFECTING BRENT SPOT PRICES

OPEC CRUDE QUOTAS AND PRODUCTION 1989 – 1992



THE OUTLOOK FOR OIL PRICES IN 1992 - RESULTS OF A SURVEY

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INTRODUCTION

Oil Price Expectations Surveys have been made regularly by the Surrey Energy Economics Centre since 1984 in order to obtain expert opinion on likely developments in world oil prices[1]. The eighth in the series took place on 18th March 1992 at the Prospects for Oil Prices conference held at the University of Surrey. Thirty-one participants returned a questionnaire designed to elicit 12 month ahead and 5 year ahead price expectations. Respondents were asked to indicate their view of the likely price of oil in certain broad price ranges. These were selected to cover the wide variation of prices experienced since the early 1970s. Since the previous survey (June 5th 1991) two major developments had occurred - the partial collapse of the Soviet Union as a producer and exporter of oil, and the resumption of significant oil production by Kuwait. In these circumstances it was to be expected that opinions about future oil prices would have altered in some respects.

RESULTS OF THE 1992 SURVEY

Table 1 shows price expectations in March 1992 as compared with those of June 1991 and April 1990. The 12 month's ahead expectations are all clustered in the range $10 to $25 per barrel and $16-$20 is the median predicted price. In comparison with the 1991 expectations, a much higher proportion of respondents (77.4 as compared to 50% in 1991) gave $16-20 as their expected price range, whilst fewer expected prices to rise (19% compared with 46% in 1991). The stability of the 12 month ahead price expectations is a remarkable feature of a period which has witnessed much tension in the Middle East and in the former Soviet Union.

[1] See Caddy et al (1991) for details of the 1991 survey.

TABLE 1. ONE YEAR AHEAD OIL PRICE EXPECTATIONS 1990, 1991 AND 1992

FORECAST MADE	- MARCH 1992	- JUNE 1991	- APRIL 1990
	1 YEAR TO 1993	1 YEAR TO 1992	1 YEAR TO 1991
$/BBL	%	%	%
<10	0.0	0	0
10-15	3.2	0	0
16-20	77.4	50	66
21-25	19.4	46	31
26-30	0.0	4	0
>30	0.0	0	0
MEDIAN	$16-20	$16-20	$16-20

Table 2 indicates that this stability extends to the 5 year ahead forecasts as well. Here the median expectation is for prices to rise to the $21-25 per barrel range in money of the day terms. It is noteworthy however that significantly fewer respondents expect higher than median prices (21.6% compared with 39% in 1991) and conversely more of them expect prices to remain in the $16-20 range (32% compared with 15% in 1991). This reflects a growing scepticism about the oil market's ability to sustain higher prices in the long run.

TABLE 2. FIVE YEARS AHEAD OIL PRICE EXPECTATIONS 1990, 1991 AND 1992

FORECAST MADE	- MARCH 1992	- JUNE 1991	- APRIL 1990
$/BBL	5 YEARS TO 1997 %	5 YEARS TO 1996 %	5 YEARS TO 1995 %
<10	0.0	0	0
10-15	0.0	0	0
16-20	32.3	15	7
21-25	45.2	46	59
26-30	19.4	39	34
>30	3.2	0	0
MEDIAN	$21-25	$21-25	$21-25

FACTORS AFFECTING PRICE EXPECTATIONS

The stability of predicted prices between 1991 and 1992 is reflected in the ranking of important explanatory factors. Respondents were asked to rank the 4 factors which they considered most important in determining price developments. Non selected factors were given a rank of 5. Averaging the ranks over all respondents produces an index ranging between 1 and 5 in which lower values indicate greater importance. As may be seen from Table 3, structural and supply factors such as OPEC control of production and the reentry

of Kuwait and Iraq to the market were thought to be the most important factors likely to affect future prices, whilst demand factors like prospects for economic growth in the OECD region are given lower rankings. However, within the supply group of factors, the possibility of Kuwait/Iraq reentry into the oil market overtook OPEC control as the most important likely influence on prices in the March 1992 survey. Respondents were also more concerned about the impact on prices of developments in Eastern Europe in the 1992 survey than in 1991.

TABLE 3. MAJOR FACTORS INFLUENCING OIL PRICES OVER NEXT 5 YEARS

	FACTOR SCORES 1992	1991
Economic growth in the OECD	3.2	3.1
Financial problems in the developing countries	4.9	4.8
OPEC's ability to control production	2.8	1.9
Changes in other energy prices	4.8	4.6
Energy conservation	4.7	4.4
Environmental concerns and taxes	4.1	4.6
Developments in Eastern Europe	3.6	3.8
Re-entry of Kuwait and Iraq to the oil market	2.6	2.8
Value of US dollar	-	-
Other	4.8	5.0

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

FACTORS ASSOCIATED WITH DIFFERENT PRICE EXPECTATIONS

Price expectations depend partly on judgment about the importance of particular factors. Thus in an attempt to discover whether those expecting higher prices differ in the weight given to different factors from those expecting lower prices we divided the set of responses into two groups - those expecting higher than median prices and those expecting lower than median prices in response to the 5 year ahead price question. Separate factor rank averages were calculated for each group and the results are compared in Table 4. Economic growth in the

OECD area is ranked more highly by high price forecasters than by low pricers (2.5 compared with 3.8) and less weight is given to the supply factors (OPEC control gets only 3.5 compares with 2.8 by low pricers). Another significant difference is in the importance attached to Kuwait/Iraq reentry into the oil market. Here the high pricers give an average of 3.5 suggesting that they are much more sceptical about the likelihood of a supply expansion from this factor than are the low pricers with their average of 2.5.

Rather surprisingly, environmental concerns and taxes were given lower ranking by high pricers than by low pricers and this result may reflect uncertainty about the likely development of international environmental policy. As in 1991, environmental concerns and taxes were given a low overall ranking by all types of forecasters suggesting that oil market analysts are unconvinced about the ability of governments to implement environmental effective environmental policies in the medium term. Similarly, although developments in Eastern Europe are given a moderate ranking by both groups it is not possible to discover any significant differences in weighting.

TABLE 4. FACTOR SCORES OF HIGH PRICE AND LOW PRICE FORECASTERS

	MARCH 1992 SCORES		JUNE 1991 SCORES	
	HIGH	LOW	HIGH	LOW
Economic growth in the OECD	2.5	3.8	2.6	3.5
Financial problems in developing countries	5.0	5.0	4.6	5.0
OPEC's ability to control production	3.5	2.8	2.3	1.5
Changes in other energy prices	4.7	4.9	4.6	4.8
Energy conservation	5.0	4.8	4.6	4.5
Environmental concerns and taxes	4.6	4.0	4.7	5.0
Developments in Eastern Europe	3.7	3.2	4.1	4.5
Re-entry of Kuwait and Iraq to the oil market	3.5	2.1	3.2	1.5
Other	4.9	4.6	5.0	4.8

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

OTHER FACTORS

Respondents were invited to add to the list of explanatory factors where they considered other factors to be important. The following factors were mentioned:

Political unrest in the Middle East
War
Economic growth in Non OECD
Economic growth in LDCs
Growth in Middle Income Economies

The first two factors were associated with median price predictions and suggest that these traditional sources of uncertainty associated with the world oil market have lost some of their power to raise prices significantly over moderate periods of time. This is consistent with learning from the actual behaviour of the market during the Iraq/Kuwait conflict when prices fell rapidly once the early shock of the war had disappeared. On the other hand, the three demand factors relating to economic growth outside the OECD area are associated with higher than median price expectations. This focuses attention on an important area of uncertainty in oil market forecasting and one which would well repay more intensive research - namely the determinants of the demand for oil in the non OECD world.

REFERENCE

Caddy P, Davies P, Hawdon D, Stevens P, and Toalster J, Prospects for Oil Prices. SEEDS 59, July 1991, Surrey Energy Economics Centre, Guildford.