

The Gulf War and the Price of Oil: Prospects for the Medium Term

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Introduction

The Kuwaiti crisis of 1990-91 radically changed the shape of oil politics. The OPEC cartel is now more divided than ever, and the conflict in the Gulf will have severe financial repercussions for the region's countries for a number of years to come.

On a fairly obvious level the crisis tilted the balance between Iran and Iraq which had been heavily in Baghdad's favor towards Teheran. Clearly, it means that Iraq's prospects of becoming the first populous state in the Middle East to achieve a fully industrialized and diversified economic base are dashed for the foreseeable future.¹ Much less obvious are the ramifications for long run oil prices, and thus the economic position of the other Gulf countries. Not since the early 1970s has there been more uncertainty concerning the economic fate of these nations. Already many of the countries have undertaken radical restructuring of their development plans, together with accompanying social and political strains. Whether or not many of these countries will be able to maintain stability, will depend on future developments in world petroleum markets.

The main purpose of this paper is to gain some perspective on these issues by assessing the likely movements in world oil markets over the next decade. In doing so, the first part of the paper examines some of the patterns and longer run trends that characterized oil markets prior to the Iraqi invasion. The second part assesses the impact that developments since the liberation of Kuwait have had on these fundamental market dynamics. Based on these factors, the final section of the paper draws several conclusions concerning future oil

¹ John Roberts, *War for Oil? Energy Issues and the Gulf War of 1991* (Boulder, Colorado: International Research Center for Energy and Economic Development, Occasional Papers Number Thirteen, 1991), p. 1.

prices and the distribution of economic power in the region.

Key Factors Affecting the Price of Oil²

After more than two decades³ of experience in forecasting prices and production levels, analysts have developed several general principles concerning the functioning of oil markets.⁴ One notable advance is that energy is no longer thought of as exempt from the laws of supply and demand. It was not very long ago that energy was viewed as a necessity and as such was unresponsive to price. Similarly, supply was thought to depend more on the whims of nature than on the ability to find and extract the mineral.⁵

The situation regarding demand before the Iraqi invasion contrasted sharply with the beginning of the decade. In the first quarter of 1981, world oil consumption was about 56 million barrels per day and the price of oil was \$48.64 per barrel (in 1988 dollars). In the first quarter of 1988, world oil consumption was again about 56 million barrels per day. Yet the price of oil had dropped to below \$12 per barrel despite worldwide economic expansion.

Several studies have documented the events, market responses, and adjustments that contributed to these patterns:⁶

1. The Iranian revolution and the onset of the Iran-Iraq War reduced world oil production between 1979 and 1981, pushing prices up. Because short-run oil demand is very inelastic (relatively price insensitive), the reduction in supply

² The following section draws heavily on Robert Looney "World Oil Market Outlook: Implications for Stability in the Gulf States" *Middle East Review* (Winter 1989/90), pp.30-39.

³ For an excellent overview and assessment of OPEC's attempts at coordinating policy and resolving conflicts see M.S. Ahrari, "Conflict Management of the OPEC States," *Mediterranean Quarterly* (Summer 1991), pp. 86-109.

⁴ Douglas Bohi, "Evolution of the Oil Market and Energy Security Policy," *Contemporary Policy Issues* (July 1987), p. 21.

⁵ *Ibid.*

⁶ See for example Samuel A. Van Vactor and Arlon R. Tussing, "Retrospective on Oil Prices," *Contemporary Policy Issues* (July 1987), pp. 1-19; Stephen P.A. Brown and Keith R. Phillips, "Oil Demand and Prices in the 1990s," *Federal Reserve Bank of Dallas Economic Review* (January 1989), pp. 1-10; Michael Olorunfemi and Maria Knobl, "OPEC's Experience in the 1980s: Shaping its Strategies for the 1990s," *OPEC Review* (Spring 1991), pp. 1-12 Cyrus Bina, "Limits of OPEC Pricing: OPEC Profits and the Nature of Global Oil Accumulation," *OPEC Review* (Spring 1990), pp. 55-74; Robert Bacon, "Modelling the Price of Oil," *Oxford Review of Economic Policy* (Summer 1991), pp. 17-34; and Klaus Matthies, "The OPEC After Thirty Years," *Intereconomics* (September/October 1990), pp. 253-256.

- 4 pushed prices sharply higher.
2. The oil consumption and price combination that prevailed in the first quarter of 1981 could not be sustained in the longer run. In the absence of economic growth, a sustained price of \$48.64 per barrel would eventually have reduced U.S. oil consumption by about 40 percent – from 16.5 to 10.2 million barrels per day. On the other hand, for U.S. consumers to continue to absorb 16.5 million barrels per day without economic growth eventually would have required an estimated price of only \$20.61 per barrel.
 3. U.S. consumers require nearly a decade to adjust fully to changes in oil prices. Oil consumption responds slowly to price changes because substantial changes in the ratio of oil consumption to output require new capital investment.
 4. As short run demand adjusted to prices during the 1980s, the market price and quantity of oil consumed were pushed down. Non-OPEC oil producers added to the downward pressure on price as their production decreased. Beginning in 1981, however, OPEC moderated downward pressure on prices by reducing its own production.
 5. Nonetheless, short-run demand continued to decline and non-OPEC oil production continued to rise. OPEC's continued attempts to support prices reduced its production to about 14 million barrels per day by mid-1985, less than 50 percent of its total capacity.
 6. OPEC's attempts to support prices ended in a well-publicized failure. Excess capacity and the incentive for OPEC members to cheat on quotas led to a surge in OPEC production. With demand being inelastic in the short run, the surge in production caused a price break in late 1985 and early 1986. Thereafter, OPEC was unable to restrain its production sufficiently to drive prices back up to earlier levels.

The above analysis indicates that consumption responds symmetrically to rising and falling oil prices. Given this adjustment mechanism, the price of \$15.47 per barrel in early 1989 would have eventually

increased U.S. oil consumption by an estimated 35 percent – from 17 to 23 million barrels per day. On the other hand, for U.S. consumption to remain at 17 million barrels per day, in the long run prices must rise to an estimated \$26.63 even without economic growth.

While longer run movements in oil price are easily explained in terms of market responses and adjustments over time, shorter run movements are still difficult to predict. In fact, it is fair to say that we have only begun to understand the mechanisms controlling month to month (or even year to year) changes in price. Even the dramatic fourfold increases in oil prices in 1974 and the threefold increase in 1979 during a period of stable supply appear to defy the normal laws of supply and demand. It is now clear that inventory demand fluctuations set off by supply interruptions can contribute a great deal more to the shortage in the market and to the severity of the price shock than can the initial supply reduction.

Similarly, we lack complete explanations of the price declines in January 1986 – not of why the price fell, but of why it took so long to happen and then fell so far. The downward pressure had been enormous for years, as world-wide consumption declined by 23 percent between 1979 and 1985 and remained steady through 1985. Even the futures market anticipated a price decline for nearly three years before it occurred, as suggested by the discounts on long term contracts relative to shorter maturities during most of that time. Also indications now exist that the market was surprised by new information in January 1986. Saudi Arabia announced its intention to increase production three months before the price drop, and OPEC failed to reach a new accord in light of the Saudi action one month before.

The most popular explanation of recent oil price movements is that, beginning around 1972, OPEC began exerting its market power to control the world oil price.⁷ Certainly, OPEC possessed the potential market power to control the oil price: during most of the 1970s, OPEC countries produced more than two thirds of total free world output and accounted for nearly 90 percent of all oil involved in international trade. Nevertheless, little evidence exists that OPEC exercised its market power. Political events, and not OPEC decision making, were the catalysts that initiated the two oil price shocks and,

⁷ This interpretation is at best misleading and at worst simply incorrect. See for example: Mohammed Ahraari, *OPEC: The Falling Giant* (Lexington, Kentucky: University of Kentucky Press, 1986).

as noted, reductions in supply do not explain the price shock that occurred.

OPEC production slowed⁸ slightly during the first three months of 1974 and again during the first three months of 1979. However, total OPEC production for 1974 matched that for 1973, and total production for 1979 exceeded that for 1978. What production figures from these two events do not reveal is the extent of the shortages caused by the demand side of the market, in particular, surges in inventory demand.

Unfortunately, the extent of the inventory demand shock cannot be fully described because the only available inventory data refer to primary stocks in OECD countries and nearly all stocks held outside the OECD countries are unknown. Still, more than just anecdotal evidence exists to indicate that considerable hoarding occurred downstream from refineries. Immediately after the Iranian revolution began in October 1978, refined product stocks fell sharply in all OECD countries even though crude oil supplies and refining throughout continued unabated.

Deliveries from refineries to downstream markets continued at an unusually rapid pace through the first three months of 1979 – indeed, too rapid a pace to be explained by a consumption increase – until the process finally slowed in mid-1979 and refiners began to rebuild their stocks. By this time, most of the price increase had already occurred. Refiners continued to build their stocks to record levels over the next 12 months, and in prices offset this slow-down in consumption that would soon dominate the market.

In short, past forecasting errors can be blamed partly on the one to two year lag in completing accurate data and the inventory adjustments underway in the oil market during this period. Long term trends were difficult to identify, much less to quantify. One thing is clear, however; the results of a sound projection methodology should be relatively insensitive to current events. In this light, it is interesting to compare various Department of Energy (DOE) crude oil price forecasts for 1990 with the average price for the year in which each report was prepared.

In 1977, the DOE projected that oil prices in 1990 would average \$24 – the same price level that prevailed in the year the forecast was made. In 1981, after prices had nearly doubled, the DOE projected a

⁸ The following is based on Bohi, *op.cit.*, pp. 23-25.

nearly 50 percent increase during the following nine years. Subsequently, as current prices have declined, projected oil prices have declined even more rapidly. Projections made by Data Resources Inc., Chase Econometrics, Wharton and the other major forecasting services show a similar pattern.⁹

Clearly, projecting oil prices, particularly specific figures for specific years, is highly speculative. More realistically it is better to view oil price movements as cyclical. In this regard, the rise and fall of oil prices from 1969 to 1986 is unlikely to be repeated in the extreme.¹⁰ The depths to which prices sank during the 1960s drove out most competing fuels.¹¹ When prices ascended a few years later, most fuel using equipment was designed to burn only a narrow range of petroleum products. In the short term, consumers had little choice other than to pay higher fuel prices.

As time went on, however, consumers learned to conserve energy and adopted flexible burner tip designs. Worldwide, coal and gas consumption expanded while oil demand contracted. If historical experience is any guide to future behavior in global energy markets, the active presence of competing fuels again will tend to hold down the oil price cycle. In this event, competition among fuels will most likely prevent a complete collapse of oil prices.

In world energy markets, oil penetrates very rapidly into the bulk fuel market when its price is less than \$10 per barrel. Under such circumstances, global oil consumption could increase by 2-3 million barrels per day within a few months, largely at the expense of coal, and could continue to grow by as much as 5 percent per year as oil captured virtually the entire increment in world energy demand. Thus, oil prices below \$10 are stable only if very substantial oil reserve discoveries occur, such as those that took place during the 1950s and 1960s.

On the other hand, competition among fuels prevents oil prices

⁹ Samuel A. Van Vactor and Arlon R. Tussing, "Retrospective on Oil Prices," *Contemporary Policy Issues* (July 1987), pp. 12-14.

¹⁰ A view also put forth in George C. Georgiou, "Oil Market Instability and a New OPEC," *World Policy Journal* (Spring 1987), pp. 295-312. See also Arlon Tussing, "An OPEC Obituary," *The Public Interest* (Winter 1983), pp. 3-21; and Jahangir Amuzegar, "A World Without OPEC," *The Washington Quarterly* (Autumn, 1982), pp. 60-70.

¹¹ The following is based on Van Vactor and Tussing, *op.cit.*, pp. 15-18; and Walter J. Mead, "The OPEC Cartel Thesis Reexamined: Price Constraints from Oil Substitutes," *The Journal of Energy and Development* (Spring 1986), pp. 239-42.

from sustaining a level much above \$20 per barrel. In the longer term, coal from South Africa, Australia, the United States and other producing areas can easily be delivered into major European and Asian markets for \$20 to \$25 per barrel equivalent. Natural gas is an even stronger competitor.

A final fact that we have learned from past experience is that day to day oil price changes are driven by Saudi Arabian production decisions more than by anything else. Since the drop in demand and price peak of 1981, oil prices could stabilize above their earlier levels only because the Saudis and a few other OPEC members were willing to decrease production to balance the market. In the summer of 1985, however, Saudi production had fallen to 2.5 million barrels per day--about one half of the country's OPEC production quota and nearly a 50 percent drop from the production levels of the summer before.

The only way that the Saudis could restore their production and stem the erosion of their export revenues was to retreat on price. They did so through a set of complicated "netback" agreements that guaranteed profit margins to refiners buying Saudi crude oil. As they executed these agreements, Saudi officials warned that they were no longer willing to act as swing producer. Simply stated, the Saudis lost control of the marginal barrel of crude oil and thus the ability to set prices.

What does all this tell us about future Saudi policy over prices or output? As late as 1972, the major oil companies projected Saudi crude oil production potential in excess of 20 million barrels per day. Such an output is still possible, and the investment required to arrive at the production level is an order of magnitude lower than the cost of providing a similar increment in primary energy supply from any other set of resources. It is a reasonable assumption that the Saudis now realize that higher capacity levels should have been installed during the mid-1970s to prevent the price run-ups of 1979 and 1980. (The Saudis themselves wittingly or unwittingly helped engineer those price increases by holding back on production).

So long as Saudi Arabia's leaders are rational, they will price their energy just below the costs of their closest competitors. In the short run, that competition is from other sources of oil such as natural gas in North America and Europe, where the long distance transmission infrastructure is more than adequate to meet current demand. In the longer run, the competition is from coal and new natural gas supplies, including the substantial cost of adding to transport capacity. Thus,

the most important determinant of oil prices in both the short and the long run should be competition among fuels in the bulk fuel market. Put another way, the marginal supplier of energy to the world will base its price on the marginal uses of energy and the marginal development costs of fuels competing in that market.

Because the Saudi reserves are unlikely ever to be worth more than the value of substitute bulk fuels, the Saudis have little economic incentive to restrain development of their fields. In short, Saudi Arabia has both the incentive and the ability to meet the world's incremental energy demand through the rest of the century and at prices comparable to those that prevailed in mid-1986.

In sum, the interpretation of oil markets put forth here assumes that:

1. The tenfold increase in crude-oil prices during the 1970s can be explained by major shifts in market forces, without the need of a cartel theory.
2. From 1980 through mid-1985, evidence of some cartel behavior appeared, including dominant producer(s) control over output.
3. The ability of OPEC or dominant producers within OPEC to attain its (their) price objectives will continue to reflect the basic problems of a non-government enforced cartel – the strong incentives to agree and then cheat, the lack of any enforcement mechanism, and the fact that about 70 percent of world crude output is outside OPEC. These basic problems have not been eliminated by recent agreements.
4. Higher oil prices have led consumers worldwide to conserve on their use of oil. This market mechanism will constrain future oil price increases. But in the early 1990s, crude prices must increase due to the non-renewable character of crude oil.
5. The important and large scale immediate substitutes for oil, which led to oil price reductions in the mid-1980s and which will constrain future price increases, include large reserves of tar sands, heavy oils, coal and nuclear in electric power generation and wind energy conversion. These substitutes are

sufficiently large and low cost so as to be expected to prevent crude oil prices from again rising above approximately \$20 per barrel (1986 dollars) at least until 1993.

At the time just prior to the invasion of Kuwait, these general considerations lead to a likely price scenario whereby oil markets were assumed to continue the adjustments that began the early 1980s. This scenario assumed that oil markets had not yet completely adjusted to worldwide excess capacity in the producing countries, with the net result that prices and/or production levels will continue to fall in the early 1990s: By the mid-1990s:¹²

1. short-run demand was expected to increase from the unsustainable combination of oil consumption and price that characterized the late 1980s and early 1990s. Adjustment was expected to be slow. Nevertheless, together with a growing world economy and low initial prices, the adjustment was thought to result in strong growth in oil demand from the mid-1990s onward.
2. As a first approximation, given the low prices in the late 1980s, the growth rate in consumption was anticipated to begin to increase from around 2 percent per annum in the early 1980s to 9.5 percent by the end of the century.
3. This rate of consumption can not be sustained throughout the 1990s, however, since it would result in levels of demand greater than the world capacity to produce oil – little capacity is likely to be added with the low oil prices that will bring about the rapid growth in oil consumption.
4. Clearly, given the demand they are likely to stimulate, 1989 prices could not be sustained throughout the decade of the 90s. Previous experience had shown that as OPEC is pushed to full capacity oil prices rise.
5. Nearly all excess capacity to produce oil was in OPEC. Given a wide range of consumption scenarios, OPEC was expected

¹² Following Broth and Phillips, *op. cit.*, pp. 4-6.

to come close to full capacity between late 1992 and early 1993. At or below a price of \$25 dollars per barrel, OPEC could reach full capacity no later than early 1993. By that year a price of \$25 per barrel could prove too low – if world capacity did not rise.

6. Similarly, with world economic growth rates between 2.0 percent and 3.0 percent, oil prices could reach \$30 to \$40 per barrel by the year 2000.

Of course, these price forecasts are dependent upon a number of assumptions. If world capacity to produce oil is decreased, if OPEC restricts its production, if oil supplies are disrupted or if economic growth is stronger, oil prices will be higher. On the other hand, if world capacity to produce oil is increased, if economic growth is weaker or if energy taxation is increased, oil prices will be lower than those forecast above.

The Future – as Seen Post-Invasion

Clearly, OPEC was unraveling at the time of the Kuwaiti invasion: its discipline undermined by evaded quotas, declining output and international strife. But OPEC had been looking forward to a revival as its share of world oil production increased during the mid to late 1990s. The invasion of Kuwait put such a revival into question. As the *London Economist* noted in August 1990, the invasion of Kuwait will most likely put an end to this scenario. According to the *Economist*:¹³

1. Developed countries will now favor supplies from outside the Gulf and alternatives to oil, such as natural gas.
2. Conservation will also become more attractive, depressing demand.
3. Even before the invasion a number of observers believed that because of worries about global warming and environmental damage, demand would be less than the consensus forecast.
4. Worse than that, the *Economist* felt the Iraqi action would give

¹³ "The End of OPEC" *The Economist* (August 18, 1990), pp. 55-56.

a boost to non-OPEC exploration. OPEC supply should also increase. Before the invasion, Cambridge Energy Research Associates had predicted that OPEC's large producers would add about 7 million b/d of extra capacity over the next five years – roughly matching the increase in expected demand. Unless producers cut their investment, the world may again find that capacity in the Gulf outstrips demand. If so, discipline over production looks a more futile ambition than ever.

On the other hand, the Economist felt that a price war was unlikely since, although the three big Gulf producers – Saudi Arabia, Iran and Iraq – have plenty of reserves to increase production, they could ill afford a collapse in the world oil price. All should be desperate for money. Iran and Iraq need money to repair war damage. Saudi Arabia's falling oil earnings caused it to run up budget deficits totalling more than \$90 billion in 1983-89.

Presumably the net effect of these forces would be to usher in an era of relative price stability in the foreseeable future. This view was more formally elaborated by Daniel Yergin a year after the invasion.¹⁴ According to Yergin this period of calm for oil producers and consumers will result because:¹⁵

1. The United States, along with some coalition partners, has assumed an explicit role in assuring the secure flow of oil and that certainly affects the orientation of the oil exporters. OPEC, as always, reflects the balance of interests and power among its members.
2. Saudi Arabia is more dominant among the exporters than ever. Committed to moderate prices and stable supplies, it has no doubt that its fortunes depend on the Western economies; and with a quarter of proven world reserves it wants to be assured of a long-term market.
3. At the same time, the crisis demonstrated that Saudi security is entwined with the West. But the Saudis' strategy is not

¹⁴ Daniel Yergin, "Less Oil Politics and More Oil Business," *International Herald Tribune* (August 5, 1991), p. 6.

¹⁵ *Ibid.*

much different from that of most other exporters who have much greater respect for the power of the marketplace today than in the era of nationalism. They have learned that customers count and they want to demonstrate they are reliable suppliers. Even Iran is showing some stirrings in that direction.

4. The economic imperatives of the 1990s also are pushing the exporters toward a new flexibility. With the question of sovereignty over oil resources resolved in their favor, they are now preoccupied with more pragmatic and acute needs – chiefly foreign capital and technology.
5. They need more income from oil just to keep up with their rapidly growing populations. And since they are unlikely to gain more revenue from much higher prices (because they will lose customers) they need to pump more oil. And that requires new investment in exploration and production capacity.
6. How will they pay for it? There is a general expectation of a capital shortage in the 1990s. So one place oil exporters will look for investment funds is in the once banished foreign oil companies. As a result, doors that slammed shut with nationalization in the 1970s will swing open again in the 1990s, and companies will find themselves exploring and producing in territories they never expected to see again.
7. In the aftermath of the Gulf crisis, attention has actually shifted away from the Middle East toward the former Soviet Union, which will become a more important, if uncertain factor in international oil. If a secure contractual basis can be established with western oil companies, several of the former Soviet Republics may in some degree help balance the world's dependence on Middle East oil.
8. The biggest battle over oil in the 1990s may not even concern producing countries directly, but will be the struggle within the industrial countries over energy needs and environmental values. It could turn out that America's "energy strategy" is actually embodied in initiatives such as the 1990 Clean Air Act.

9. Whether economically correct or not, there is an unprecedented state and federal effort to regulate into existence a market demand for alternatives to gasoline, challenging the basic role of oil. The petroleum industry is anticipating a huge bill for the new environmental investments. Perhaps oil demand, not oil supplies, will be the big question in this decade.

Compounding OPEC's problems was a new interest and advocacy on the part of industry leaders in the West in encouraging their governments to pursue policies undermining what remained of OPEC solidarity. In several cases, these views seemed to reflect official government policy. For example, Edward Morse, the influential publisher of *Petroleum Intelligence Weekly*, argued that:¹⁶

1. The main problem of the oil market is that it is the largest segment of international trade without any clear rules. The result has been imbalance, disruption and price shocks.
2. What should be done is simple: the world's largest oil consumer and importer, the U.S., and the largest exporter, Saudi Arabia, can build a new oil regime by taking painless actions that serve both their own and global interests. And in the aftermath of the Gulf War they have a remarkable opportunity to do so.
3. The two countries can start by negotiating a bilateral agreement based on a concept the Saudis have already proposed by urging that "reciprocal security" should be the cornerstone of oil relations. In return for even modest demonstrations of good will, the Saudis promised that consumer nations could gain access to a "fairly priced ocean of oil." After a war that demonstrated our good will, we should not wait any longer to pursue this.

¹⁶ Edward L. Morse, "How to Make OPEC Obsolete" *New York Times* (July 1, 1991), p. A11. A more radical view is given in M.A. Adelman, "Oil Fallacies" *Foreign Policy* (1991), pp. 3-16. A critique of Professor Adelman's ideas is given in Peter Passell, "Cheap Oil, Expensive Cartel," *The New York Times* (March 20, 1991), p. C2.

4. The agreement could begin with plans for energy crisis management, building on an agreement to store Saudi oil in the U.S., both under Saudi control and also leased cheaply to the U.S. Strategic Petroleum Reserve. For the Saudis, this would be a safe and inexpensive way to store oil. It would also demonstrate the kingdom's commitment to U.S. energy security and provide a steady outlet for production.
5. In return, the accord would grant U.S. oil companies long-term access to Saudi oil, with contracts offering American companies the equivalent of equity ownership for that oil.
6. Why would the Saudis reopen their oil sector? It would provide the money they need for postwar reconstruction in the region. Moreover, it would symbolize the commitment to supply oil over the long term. Though these arrangements would lead to more diversity in the Saudi industry, it need not reduce government control.

According to Morse:

1. The key problem of oil instability stems from the large-scale nationalization of oil reserves in the 1970s. Since then, oil companies have lost access to long-term supplies and need to invest and rely upon high cost oil outside of the Organization of Petroleum Exporting countries. For their part, the big monopoly producers like Saudi Arabia, with insecure outlets, disrupt the market with their search for buyers.
2. Eventually, the bilateral agreement could be opened to others, with the Saudis signing similar agreements with Japan and The European Community, and the U.S. negotiating with other large exporters.
3. Building new international institutions would not require the dismantling of OPEC or the international Energy Agency. Yet it could eventually supercede both, providing the basis for a General Agreement of Petroleum and Petroleum Products, much as the General Agreement on Tariffs and Trade emerged from bilateral trade agreements built on reciprocity

and the extension of most favored nation treatment to many countries.

4. This agreement would address short-term energy insecurity and crisis management. It would subject oil to a free market regime needed for long-term stability, providing predictable prices to the Saudis and reasonable prices to American consumers. Over time it would create a more sensible way for the world to manage its oil relationships without forcing oil exporters to give up control over their own resources.

This new aggressiveness on the part of consumers was further refined by Professor M.A. Adelman of MIT.¹⁷ Adelman's argument is that the right price for the industrial countries to pay for oil is the lowest price that would assure an adequate supply for the foreseeable future. And that, he maintains, is \$6 to \$10 per barrel. His calculations throw some light on current policy questions.

1. His estimates for OPEC make clear that most of the cash going to oil exporters is pure windfall. Squeezing the cartel would thus not be likely to reduce the supply.
2. By the same token, his calculations suggest the magnitude of economic waste created by OPEC's continuing financial gap. High prices have created perverse incentives to drain America first: if Mr. Adelman's numbers are correct, little or none of the billions of dollars spent annually on oil development in North America could be justified in purely economic terms.

Implied here is a point often (correctly) made by environmentalists: the ecological damage from burning carbon fuels – local air pollution, global warming – ought to be factored into the price at the pump. As Passel notes¹⁸ "What they rarely acknowledge, though, is that OPEC already assesses a 'carbon tax' that triples the price of crude. Washington does have an oil policy. The only catch, it seems, is that the policy is made in Houston and Riyadh".

While none of Mr. Morse's (or Adelman's) proposals have been

¹⁷ M.A. Adelman, "Oil Fallacies" *Foreign Policy* (February 1991), pp 3-16.

¹⁸ Peter Passel, *op.cit.*

implemented, at least in the United States, there are indications the Europeans are taking them seriously – especially the idea of imposing a "carbon tax":¹⁹

1. A carbon tax is already being used in some Nordic countries and is now proposed for Europe-wide application. The announced intent of the tax, which is based on the carbon content of fossil fuels, is to reduce emissions of carbon dioxide, a gas said to cause global warming.
2. Under study by the European Community since last fall, the carbon tax proposed by the European Commission would start next year at \$3 a barrel for oil, rising to \$10 by the year 2000.

There is also increasing evidence that the industrial countries are simply bypassing or even ignoring OPEC in designing their future energy policies. This is most evident in several oil agreements currently under discussion. These do not even mention the OPEC countries:²⁰

1. If all goes according to plan, around 50 countries will sign by mid-summer 1992 an energy treaty that will define market conditions for trade in oil and gas between the former Communist bloc and the rest of the Western industrialized world. The proposed treaty does not ask the OPEC countries to join.
2. Everything will be covered in the accord and protocols, from investment protection to exploration rights, trade dispute settlement, repatriation of profits and the environment. At the United States' and Germany's assistance the main thrust of the draft text is the legal protection of foreign investments.
3. Although the will is obviously there, most Western oil companies have been cautious about rushing to invest in the republics of the former Soviet Union because of the political uncertainty. The main thrust of the draft treaty text currently

¹⁹ James Tanner "OPEC Ministers Will Discuss Taxes, Not Crude Prices," *The Wall Street Journal* (April 23, 1992), p. A10.

²⁰ Hillary Clarke, "Oil: Bypassing OPEC," *The Middle East* (March 1992), pp. 30-31.

on the table is the legal protection of foreign investment, including safeguards in the event of war or re-nationalization programs.

4. In the short-term one of the most important political effects of the Charter will be to rule out the likelihood of any of the producing republics from joining OPEC – the market access clause of the text currently under discussion specifically rules out any price fixing or production quotas.

Clearly a significant factor for the future is the likelihood that Russia and several of the former Soviet Republics may, with the aid of foreign investment and technology, reverse the downward trend in production to become significant exporters.²¹ The Soviet's oil problems never really involved lack of reserves: low investment, poor technology and inefficiency were always the main constraint on output – these may be overcome quickly once the expected boom in foreign investment begins.

Against this background, problems within OPEC were coming to the fore:²²

1. Quotas were last formally agreed by OPEC at its July 1990 meeting, on the eve of the Iraqi invasion of Kuwait. As a result of the cessation of exports from Kuwait and Iraq during the Gulf crisis, the other members of OPEC allowed themselves to increase production to make up for the shortfall.
2. At its meeting in Vienna in November 1991, the organization agreed to permit the members to continue lifting as much crude as they could produce. The ceiling of 23.5 million b/d agreed upon at the September ministerial meeting was simply rolled over. It seemed a sensible arrangement at the time since oil prices were averaging \$23 a barrel, Kuwaiti production was only just beginning to trickle back onto the market and no compromise seemed in sight on allowing Iraq to resume

²¹ Leyla Boulton, "The Lure of Oil's Final Frontier," *The Financial Times* (March 6, 1992), p. 15.

²² "OPEC: Saudi Arabia Takes Charge" *The Middle East* (February 1992), pp. 24-25.

exports.

Unfortunately for OPEC, prices started to fall:²³

1. First the winter growth in demand for OPEC oil peaked too soon as the oil companies built up inventories quicker than they needed to. The recession in the Western industrialized world turn out to be deeper than expected, resulting in a depressed demand for oil, dampened all the more because of a relatively mild winter.
2. Kuwait has started to resume production faster than was believed possible. And Iraq was edging its way slowly towards an agreement for the resumption of oil exports at a value of \$1.6 billion a year to pay for "humanitarian" needs.

Little wonder that OPEC members who rely for their oil revenues more on the price than the volume of crude they export were worried. Even before the end of 1991, Algeria and other members were agitating for an energy meeting of the Organization. Saudi Arabia would have nothing to do with the idea. The fact that Algeria, Libya, Nigeria and Venezuela began reducing output unilaterally indicated that the kingdom had the correct negotiating stance.²⁴ Clearly:

1. Saudi Arabia was unwilling to relinquish the 35% of its share of OPEC's overall market for crude exports.
2. It boosted production from 5.4 million b/d before the Gulf crisis to 8.5 million b/d at considerable expense and would not make a deal which did not permit the maximum degree of flexibility.

Future issues:

1. The fundamental issue of reintegrating Iraq and Kuwait into the OPEC marketing structure had to be addressed on a serious level.

²³ Klaus Matthies, "Oil Price Surprises" *Intereconomics* (March/April 1991), pp. 49-50.

²⁴ "OPEC: Saudi Arabia Takes Charge" *op.cit.*

2. OPEC was in danger of losing its credibility as a crisis-management organization by failing to think far enough ahead. Short-run market crises were still dictating oil prices.

The Future Seen as the Dust Settles

The first real glimpse into the medium term future was provided at the mid-February 1992 OPEC meeting. This meeting satisfied none of the members. At that time:²⁵

1. A fragile consensus on output was reached, only to be instantly denounced by its two strongest signatories (Iran and Saudi Arabia).
2. Oil prices continued their seasonal slide as the market continued to remain unimpressed by the proposed cutbacks.
3. The price weakness reflected a number of problems stemming from oversupply and the worldwide recession. In contrast to the 1980s, however, these difficulties were exaggerated by Saudi Arabia's reluctance to make short-term output adjustments.

The February 1992 OPEC agreement and aftermath was very important because it set the tone (apparently for some time) of Saudi Arabia's approach towards pricing:²⁶

1. Under the official agreement Saudi Arabia would have to cut to 7.9 million b/d as part of an overall ceiling of 22.5 million b/d to 22.7 million b/d. The Saudis plan to violate the agreement by staying with their 8 million b/d.
2. Saudi Arabia spent \$US 5 billion during the Gulf war to boost its production from 5.4 million b/d to close to 9 million b/d in January 1992. At the same time, the Saudis increased their market share in OPEC to 35 percent. The kingdom is clearly

²⁵ Peter Kemp, "Saudis Stand Firm as Oil Prices Slide" *Middle East Economic Digest* (April 3, 1992), pp. 9-10.

²⁶ Deborah Hargreaves, "A Deal that Fails to Heal Divisions" *Financial Times* (February 18 1992), p.17.

unwilling to relinquish its hard won market share. It also faces a budget deficit of some \$8 billion which restricts its ability to maneuver.

3. The kingdom's insistence on maintaining its large share of overall output will inevitably bring it into conflict with smaller producers. All OPEC member nations are suffering the effects of low oil prices, most have budget deficits and most have based their economic plans (for 1992) on a price closer to \$20 a barrel than the current (early 1992) level of \$17.
4. Some members such as Algeria, which is under emergency rule, and Venezuela, which recently suffered an attempted government overthrow, are pressed by political unrest at home which has partially been caused by lower oil revenues. In spite of paying lip service to smaller producers' concerns, Saudi Arabia has reasserted its dominance over the discordant producers' club. Its assertive role is increasingly mapping out a future for OPEC.
5. One significant achievement at the meeting long sought after by the Saudis was a move away from historical production quotas to allocate output more closely in line with individual countries' capacity.
6. However, this presents an opportunity for new disagreements. The danger of using production capacity as a basis for allocating output levels is that countries have a tendency to be over-optimistic in their assessments of their ability to pump oil. In addition the new system will formalize Saudi Arabia's increased clout within the organization.
7. Iran and several other producers are already fighting to reverse the move and return to historical quotas which were in place before the Gulf war. The country has called for a return to the quotas as soon as Iraq is able to re-enter the export market.
8. Iraq is currently barred from exporting oil by United Nations sanctions and its production allocation under the arrangement

is for domestic consumption only. However, by early 1992 the country was capable of producing 2 million b/d.

9. Kuwait has said its output will reach 900,000 b/d in June, rising to 1.5 million b/d by the end of the year. If the return of the two countries to full production is not to plunge the oil market into crisis, other members will have to agree to significant cuts.

On the other hand, despite the disagreements, the spirit of cooperation in OPEC is not completely dead. The more generous producers: the UAE, Venezuela, Libya and Qatar all agreed to cut production by more than the average 9 percent required under the arrangement in order to compensate the disadvantaged smaller producers.

There are also a number of indicators as to what the longer term will hold. The Geneva meeting made it clear that Saudi Arabia will demand that any agreement on overall quotas must take into account its need for a 35 percent market share and minimum of 8 million b/d. Saudi Arabia's aim at the OPEC meeting was to eradicate the last vestiges of the 1990 agreement and the quota shares – especially the kingdom's 22.45 percent share implied in the agreement. It is clear that:²⁷

1. The Saudis were trying to establish new principles to run the organization – if there are to be future production cuts then they must be pro-rated for all members.
2. The Saudis want to get such a system in place before Iraq resumes exports and Kuwaiti production recovers to its pre-war level.
3. It is clear that the Saudis hope that whatever depths current prices sink to, the relatively low prices will help the world economy towards recovery and lead eventually to stronger demand for oil.

Clearly time is on the Saudi side:

²⁷ Kemp, *op.cit.*

1. Capacity utilization in early 1992 was running at close to 90 per cent and as output declines in the US and the former Soviet Union, the kingdom is the only one of the world's three biggest producers which is expanding production.
2. Saudi production capacity will probably increase to 10 million b/d by 1995 under the current Saudi Aramco development program and bolster the kingdom's clout in output.
3. Capacity enhancement programs in Abu Dhabi, Iran and possibly Kuwait are far less ambitious or advanced.
4. Cash concerns intensified by the low oil prices are constraining the pace of development in several producing states and transforming attitudes toward foreign oil companies. Algeria, Iran and Iraq are all seeking foreign investment in upstream development, overturning a long tradition of avoiding outside advances in their need for development capital.

In sum, if OPEC states have a shared interest at present, it is their common need for cash. However, hopes of securing higher prices are being undermined by the collective reluctance to consider deeper cuts in production. Saudi Arabia in particular is determined to set the tone for OPEC's future and will not trim output again, only to see others reap the rewards of higher prices.

For most observers the change in oil market attitudes is proving to be of far greater interest than the latest disagreement between OPEC members over precise production levels. The market is starting to reflect a "new psychology." It is now starting to focus on underlying economic realities rather than reacting to developments on the basis of fears about the security of supplies. On the basis of underlying realities events are not moving OPEC's way over the short term.

Clearly oil production quotas are a thing of the past. They were never strictly observed anyway and, even as the organization reintroduced them later in 1992,²⁸ it is clear that quotas will not be more than a more than a cosmetic cover to disguise the policy differences

²⁸ Neil Buckley "Once Again OPEC Shoots Itself in the Foot," *The Financial Times* (September 22, 1992), p. 30.

which have divided the member countries since the mid-1980s.²⁹ In fact when the issue of quotas was discussed at the September 1992 meeting of OPEC ministers it became so combative that one of the founding members, Ecuador, concerned over its quota, withdrew from the organization. This move has led to speculation that other member countries may find the burden of belonging to the cartel outweighs the profit.³⁰

The Longer Term

In light of the previous discussion, it is interesting to re-read a longer term forecast made by *The Economist* on the eve of the invasion of Kuwait. In its assessment of OPEC to the year 2000 the *Economist* concluded that:³¹

1. At the end of the twentieth century, OPEC will have about four fifths of the world's oil reserves.
2. The main cause of OPEC's problems in the 1980s was OPEC's spare producing capacity of 8 million to 10 million barrels a day.
3. For the future, non-OPEC producers have little capacity. If demand continues to expand, the cartel's surplus will disappear in 10-15 years.

On the other hand, a number of factors will continue to check demand:

1. The amount of oil the OECD countries need to generate each extra dollar of GDP is still falling, despite lower prices. In 1983-85 it fell by 40%; in 1985-87 it fell by another 5%; and it fell again in 1988.
2. Conservation is one reason for this decline. Investments made to conserve oil are still coming on-stream. They include

²⁹ "OPEC: Saudi Arabia Takes Charge" *op. cit.*, p. 25.

³⁰ Youssef M. Ibrahim, "Departure of Ecuador: The Symbol for OPEC of a Decade in Decline" *International Herald Tribune* (September 19-20, 1992), p. 1.

³¹ "OPEC 2000" *The Economist* (February 4, 1989), pp. 17-19.

energy-efficient factories, houses and forms of transport that will continue to depress demand well into the next century.

3. The conservation effort is likely to intensify. Once scornful governments are now taking seriously ecologists' warnings about the environmental damage caused by burning fossil fuels; no longer is talk about global warming, the ozone layer or acid rain confined to conservationists. Conservation is now widely seen as the cheapest way to cut consumption and reduce the damage done by fossil fuels.
4. Developing countries are unlikely to offset the conservation of the industrial countries. Third World energy demand has risen in the 1980s by an average of 2 1/4 percent per annum in part because many poor countries cannot afford new fuel efficient machines and transport. But the developing world accounts for only 20% of global oil use. In the year 2000, it is estimated that up to a third of its energy will still come from non-commercial sources, like firewood, while foreign currency shortages will constrain oil imports. All in all, a boom in oil demand led by the Third World looks like a remote prospect.

From this, one can easily assume prices are likely to remain weak for the remainder of this century. Unless supplies are seriously disrupted by wars or other unforeseen events, the price of OPEC's oil is unlikely in any year to average more than \$20 a barrel (in 1992 dollars) – most likely once Kuwait and Iraq come on stream it will be considerably less.

Conclusions

Before drawing any conclusions concerning future developments on oil markets or the stability of OPEC and its members, one should heed the advice of Daniel Yergin:³²

Recent history shows that just when calm is taken for granted, some new surprise, mixing politics and economics, comes along and shakes all assumptions. Even now one can see the possible elements of a surprise during the next two or three

³² Yergin, *op.cit.*

years. The world is producing oil near the limits of capacity, meaning that there is little room for error.

From the vantage point of late-1992, it is interesting to note that the pre-invasion market mechanisms outlined above still seem to be in effect. Also the forecasts derived from these frameworks are still essentially on line – at least for the trend. In a general sense, it appears that all the invasion did was push the timing forward a few years – the invasion and subsequent liberation of Kuwait do not appear to have fundamentally altered these mechanisms or the scenarios they imply.

If anything, the invasion appears to have postponed the time when OPEC will likely regain some control over oil prices:³³

1. The Persian Gulf war has accelerated the trend away from oil and further undermined OPEC cohesion. Germany, Japan and to a minor extent the United States have increased taxes of petroleum products, which will tend to restrain demand. The growing strength of the environmentalist movement has spurred the trend toward greater energy efficiency and the replacement of oil with abundant natural gas.
2. The post-invasion mini-oil shock reinforced the determination of oil buyers to seek supplies from less volatile areas; i.e., outside the Middle East. The pace of oil (and gas) exploration in the North Sea is at an all-time peak and similar activities are taking place in West Africa, South America, and in other Third World countries.
3. The application of new technology has enhanced the probability of successful finds at lower cost as well as boosting recovery from existing wells.
4. Joint ventures between Western oil companies and producers in the former Soviet republics should, over time, reverse the downward trend that began in 1988³⁴

³³ Eliyanu Kanovsky, "Don't Prop up the OPEC Cartel," *The Wall Street Journal* (June 18, 1991), p. A20.

³⁴ Leyla Boulton, "The Lure of Oil's Final Frontier" *The Financial Times* (March 6, 1992),

5. Probably the single most important factor depressing oil prices will be the financial troubles of the major Middle Eastern oil exporting countries. Even before Iraq's invasion of Kuwait, Saudi Arabia's military budget was huge – the equivalent of about 20 percent of its GNP in 1984-88. The war added enormously to military outlays. Saudi Arabia's request for many billions of dollars of U.S. military equipment and its plans to expand its armed forces presage a major increase in its military outlays in the coming years.
6. Looming on the horizon is the reentry of Kuwait and Iraq into the oil markets. Both countries have vast petroleum reserves and pressing financial needs. They are even less likely than before the war to adhere to OPEC quotas. Iran with its economy shattered by the revolution and its eight-year war with Iraq has announced ambitious development goals. Higher oil exports are essential.
7. Kuwait in particular is lobbying for a much larger oil production quota.³⁵ Kuwait's determination will most certainly clash with Saudi Arabia's high level of production and with Iraq's eventual return to world oil markets as an exporting nation. Kuwait says it badly needs the money to make up the losses from the war which cost it \$65 billion and cut deeply into its assets of nearly \$100 billion. The Kuwaitis say that with planned expenditures of \$8 to \$10 billion over two years they will further raise output to 2 million barrels a day by the end of 1992. Kuwait's output was 1.5 billion to 2 million barrels a day before the Iraq invasion of August 1990.
8. The extensive loans Saudi Arabia has contracted from international and regional banks reflect the financial predicament faced by its government. Its leaders fear that higher prices will trigger strong countervailing forces which will in a few years depress prices; i.e., a repetition of the boom and bust of the 1980s. Hence the Saudi policy of attempting to enhance its oil

pp. 15.

³⁵ Youssef M. Ibrahim, "Kuwait Seeks to Raise Oil Output" *The New York Times* (April 20, 1992), p. c2.

revenues not by higher prices, but by exporting a larger volume of oil.

9. The announced expansion of capacity by Abu Dhabi, Iran, Venezuela and Nigeria as well as by smaller exporters will surely add to the downward pressure on prices. The historical record shows that the greater the idle capacity the stronger the tendency to cheat on quotas.

10. The recent oil finds in Yemen may be sizable.³⁶

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³⁶ Erick Watkins, "Yemen's Oil Fired Optimism" *The Financial Times* (January 28, 1992), p. 27

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