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SET AND DRIFT

World Dependence on Persian Gulf Oil Strategic Concerns and Market Reality

Jim Hart

OVER THE NEXT DECADE, U.S. strategic interests in the Persian Gulf region will continue to be significant and will present a major challenge to American policymakers. The welfare of both the developed and developing worlds is likely to remain closely linked to events in this region. Concern over future crises in the Persian Gulf is quite legitimate, and it stems in large part from global interest in the region's key asset, oil.

In 1994, the world relies upon petroleum for close to 40 percent of its total energy needs. Coal and natural gas, the next most prominent energy sources, provide in the neighborhood of 20 to 25 percent each. It is not expected that ten years from now this ratio will have changed very much. The United States alone consumes seventeen million barrels per day (BPD) of oil, most of that in the transportation sector, and there is no ready substitute.¹

While the U.S. still produces the majority of its own petroleum supplies, that state of affairs will soon change. Since 1985, U.S. crude oil production has fallen from nearly nine million BPD to under seven million, and this trend is expected to continue. Within the next two or three years, the United States will probably

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The views expressed are those of the author and do not reflect the official policy or position of the Department of Energy or the U.S. government.

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become reliant on imports for over half of its petroleum needs. Also, the fast-growing Asia-Pacific region will see its dependence on imported oil grow from nearly 50 percent to over 60 percent by the turn of the century.² Japan and Korea are almost totally import-dependent, with Saudi Arabia and the United Arab Emirates (UAE) among the leading suppliers.

As the reliance on oil imports increases, the strategic importance of the countries on the Persian Gulf grows commensurately. Two-thirds of the proven oil reserves in the world resides in five of the countries arrayed around the Gulf. Saudi Arabia alone holds over 25 percent of the world's oil reserves, and Iran, Iraq, Kuwait, and the UAE have roughly 10 percent each.³ In the years to come it will fall primarily to these countries to provide the increased production necessary to quench the world's growing thirst for oil.

As dependence upon Persian Gulf oil exports grows, so also grows the damage that could be done to the world economy by upheaval in this politically volatile area. So sensitive is the world oil market that the mere threat of unrest in the Gulf, much less actual conflict, can send oil prices soaring.

The Modern Oil Market

The market has changed radically over the twenty years since Saudi Arabia and other Arab oil-exporting nations embargoed the U.S. for its support of Israel in the 1973 war with Egypt and Syria. In the early 1970s the world oil market was influenced heavily by a few key companies and was characterized by long-term supply arrangements. The "spot" market (i.e., of individual single-shipment transactions) represented only about 5 percent of total oil trade, the remainder being based upon contracts specifying price and quantity over a long period of time.⁴

Today in the 1990s, oil is a commodity traded in a global marketplace. There are thriving spot markets for cargoes of crude oil and petroleum products ranging from the U.S. Gulf Coast, to Rotterdam in the Netherlands, to Singapore. News services such as Reuters and Telerate continually survey these markets and regularly report activity through satellite hookups to traders around the world. The supply contracts that do exist tend to be short-term, having flexible built-in pricing mechanisms that allow prices to change with market events. In contrast to the early 1970s, by 1985 spot and spot-related trades had grown to constitute 80 to 90 percent of internationally traded petroleum.⁵

In 1994, the major players in world oil price determination are the many buyers and sellers in two futures-related markets that focus either on a heavily traded crude oil or on a particular crude oil contract. The New York Mercantile Exchange (NYMEX) contract for West Texas Intermediate crude began trading in the early 1980s. The NYMEX is primarily a "paper" market dealing in "futures" (i.e., contracts to buy or sell oil at a specified time in the future), with less than 1 percent

of these future transactions resulting in the actual delivery of oil.⁶ The Brent market—Brent is a North Sea crude—in Europe is a combination of “wet” (with cargoes actually changing hands) and paper markets (the International Petroleum Exchange, or IPE, in London).

With the advent of the NYMEX and Brent markets, crude oil pricing achieved international visibility, with hundreds of market-makers around the world watching the action “in real time” on their computer terminals. Also, news services transmit both futures prices and news from these markets around the world, practically as it happens.

Hence, oil market reaction to key international events is almost instantaneous. As news of events having potential oil-supply implications flashes on their screens, traders on duty at oil companies and at large trading and brokerage firms immediately react. Individual perceptions as to the degree to which a particular event will affect supply quickly become evident in oil prices as trades are made in the futures market; a general market perception is quantified on trading screens within minutes. Threats to the security of oil supplies are guaranteed to set off a rise in prices, whereas, at the other end of the spectrum, reports of higher-than-expected production or lower-than-expected demand can send prices plummeting.

Desert Shield and the Oil Market

The Gulf War provides a prime example of how the oil market reacts. In early July 1990, oil prices on the NYMEX were trading in the neighborhood of \$16 to \$17 per barrel. There was too much oil on the market to support higher prices, largely as a result of overproduction by certain members of the Organization of Petroleum Exporting Countries (OPEC). At the time, an OPEC production quota was in effect calling on members to restrict production to slightly over 22 million BPD; unfortunately for those OPEC members desiring higher prices, production in July 1990 was running at almost 23.5 million BPD. That summer virtually all major OPEC producers except Saudi Arabia were exceeding their quota to some extent. Iraq, in particular need of higher prices because of massive debts from its war with Iran, took umbrage especially at overproduction by its neighbor Kuwait, in view of its small population and large bank account. In July Iraq rattled its saber at Kuwait, threatening that nation in a variety of ways. Such was Iraq's influence that on 27 July OPEC agreed to reduce output so as to raise its “target price” by \$3 per barrel (i.e., from \$18 to \$21).

By the end of July, Iraq appeared to have achieved a preeminent position within OPEC. By means of shrewd military threats it had been able to generate a good deal of cooperation from its OPEC brethren; it had also made a major impression on the world oil market. From a low of \$16.72 per barrel on 2 July, by the 31st the price of crude on the NYMEX had risen to \$20.69. OPEC and

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the world oil market were paying close attention to what Iraq had to say, and they probably would have continued to do so for some time. But then, on 2 August, Iraq invaded Kuwait.

NYMEX oil prices rose more or less steadily during August and September and finally peaked on 11 October, closing at \$40.42. The loss of Iraqi and Kuwaiti production was certainly a blow to world supplies, but it was known that commercial stocks were fairly high. It was also known that Saudi Arabia had an excess production capacity of 2–3 million BPD that could in part offset the lost output. Still, prices had more than doubled.

The key factor in the price increase was fear that the crisis might result in damage to Saudi Arabia—a loss of Saudi production could have been an unmitigated disaster for not only the oil market but the world economy. The exports of a number of oil-producing countries have become essential, but Saudi Arabia is the one nation that simply cannot be replaced. It can produce alone nearly as much oil as Iran, Iraq, and Kuwait together. In terms of strategic U.S. interests in the Persian Gulf region, Saudi Arabia is the “end game.”

The increase in world oil prices following the invasion was an accurate gauge of the market perception of the threat to Saudi oil. It was not coincidental that prices peaked at the same time, mid-October, that heavy American armored units arrived in Saudi Arabia and greatly bolstered the new coalition’s ability to defend against an Iraqi attack.⁷ As the threat of significant damage to Saudi oil facilities diminished and the flow of Saudi production increased, prices began to trend downward. The day after the Desert Storm assault began, NYMEX prices plummeted by \$10.56 per barrel—the biggest change in a single day in the history of NYMEX. When it became apparent that Iraq would not be able to do real damage to the oil-production capability of Saudi Arabia, prices returned to the low \$20s. In a sense, the biggest single market-moving event in the history of the modern oil market had occurred courtesy of the U.S. Central Command and the coalition allies.

Oil and the Economy

The reaction of the world oil market throughout the period of Desert Shield and Storm to military events in the Persian Gulf had a direct and significant global economic impact. In the U.S., as oil prices rose in the third quarter of 1990, the economy entered a recession.⁸ High oil prices may have contributed substantially to this economic downturn.

In a study issued in 1993 on the pricing of crude oil and petroleum products, the General Accounting Office noted that at the 1990 rate of imports, an increase in price of \$5 per barrel would have added \$13 billion annually to American expenditures for imported oil. The consequences, the study found, would

include reduced spending by businesses and consumers on other goods and services, leading in turn to higher unemployment and loss of economic output.⁹

Given the flexible pricing mechanisms that are integral today to most oil-supply contracts, rapid changes in price on the world oil market are not only evidenced in the futures and spot markets but are almost immediately translated into increases in fuel costs to consumers. The airlines, for example, rely on a combination of contract and spot purchases; when a significant market event occurs and prices rise accordingly, airline spot purchases of fuel immediately become more costly. The cost of contract purchases, with their pricing mechanisms tied to spot indices, quickly follows.

The same phenomenon occurs throughout the economy, from industrial fuel users, to operators of large truck fleets, to the Department of Defense itself, for which fuel costs are adjusted according to specific market indicators (of wholesale-level trade). However, the most politically volatile fuel price indicator—the retail gasoline price “at the pump”—may be relatively slow in reacting, since oil companies take into account non-economic aspects of possible price increases. As an example, during the Gulf crisis the president himself worked hard to ensure the oil companies held pump prices down.

Saudi Arabia, Iran, and OPEC

In the mid-1990s, OPEC will come under great pressure as its members pursue their disparate goals. Recently the organization has been split into two major camps. On one side are the countries with limited reserves or compelling economic needs; these states desire a higher price, at the expense of production volume. In this group are such countries as Iraq and Iran (with their large populations, war debts, and military ambitions), Nigeria, Libya, Algeria, and Venezuela. In the other camp have typically been the “oil sheikdoms” of the Persian Gulf—Saudi Arabia, Kuwait, and the UAE. With large reserves and small populations, these states usually moderate their price ambitions, maintain output at reasonable levels, and attempt to avoid frightening consuming nations into seeking alternative sources of energy.

The primary challenge facing OPEC in the near term, once the U.N. embargo on Iraqi oil is finally lifted, will be the accommodation of that nation's production within the organization's quota system. Iran has made it obvious that it would like to see Saudi Arabia absorb the bulk of production cuts necessary to offset restored Iraqi output, while Saudi Arabia presumably would like to see that burden spread evenly.

How to accommodate the return of Iraq, however, is but one issue contributing to pressures building between Saudi Arabia and Iran. The latter's ability to increase its production capacity is relatively limited; its output in 1994 is only a

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few hundred thousand BPD higher than it was in 1990, and expansion has been slow. In the short term Iran can make significant revenue gains only through high prices for the oil it can already produce. Saudi Arabia, on the other hand, was able in 1990 to increase its production (to make up for the loss of Kuwait and Iraq) by nearly 3 million BPD. Its OPEC quota in 1994 is 8 million BPD, compared to 5.38 million in mid-1990. Saudi Arabia has an ambitious expansion program underway that should put its capacity at 10 million BPD by 1995. This production capacity will assure the Saudis of market dominance for years to come.

Since Iran almost certainly cannot achieve its goal of market influence by manipulating its own production, it will have to try to manipulate someone else's—and therein lies at least a partial rationale for Iran's military ambitions. At some point in the not-too-distant future, Iran may well attempt to intimidate its OPEC brethren across the Gulf into following production regimes more in tune with Iranian goals. This tactic worked for Iraq, up to a point.

Aside from differences over oil policy, the Gulf region contains several ingredients (beyond the scope of this essay) of instability that bear watching by a world increasingly dependent upon on its oil. Among these is the question of the Saudi succession (King Fahd is in his 70s) and the impact that will have upon the world's foremost oil producer. Additionally, there are several border disputes around the Gulf—involving Iraq and Kuwait, Iran and the UAE, Saudi Arabia and Yemen—that periodically worsen. Finally, Saddam Hussein continues in power in Iraq, seemingly with little internal opposition.

Were two-thirds of the world's petroleum not located around the Persian Gulf, most of these issues would weigh less heavily than they do on the strategic interests of the United States, Western Europe, and the growing economies of the Pacific Rim. However, the oil is there, and its export is important. As the oil market can quickly remind us, a degree of concern is certainly merited.

Notes

1. This essay draws upon several U.S. Department of Energy sources of data, especially *Annual Energy Outlook 1993*, *International Energy Outlook 1993*, *International Energy Annual 1991*, and *Petroleum Supply Monthly October 1993*.

2. Fereidun Fesharaki and Kang Wu, "Energy Demand and Supply Outlook in the Asia-Pacific Region: An Update," *Energy Advisory*, no. 109 (Honolulu: East-West Center, 15 January 1993), p. 8.

3. "Worldwide Look at Reserves and Production," *Oil and Gas Journal*, 28 December 1992, pp. 44–46.

4. Hossein Razavi, *The New Era of Petroleum Trading: Spot Oil, Spot-Related Contracts, and Futures Markets*, World Bank Technical Paper no. 96 (Washington, D.C.: World Bank, 1989), p. iii.

Razavi describes "spot sales" as those associated with "very short-term trading, usually involving one cargo of oil per deal, with each deal struck at an agreed price for prompt lifting or delivery. Spot trading can thus be defined as a process by which cargoes of petroleum are exchanged on a day-to-day basis rather than under long-term contracts."

5. *Ibid.*, pp. 1, 24. Razavi estimates that by 1984–1985, from 30 to 35 percent of oil was traded on the spot market. "Spot-related" trading, which according to Razavi accounts for 50–55 percent of oil traded, links, through term contracts, the price of oil traded to prices on the spot market. For example, a term contract

might call for prices to be revised on a periodic basis (weekly, monthly, etc.) according either to an agreed formula tied to prices being traded on a designated spot market or to the reports of an industry price source, e.g., *Platt's Oilgram*.

6. *Ibid.*, p. 77. Most buyers and sellers liquidate their futures positions through offsetting transactions, with no oil actually changing hands. For example, a trader who has contracted to buy crude in a specified future month may liquidate this transaction by contracting to sell crude (in a like quantity) in the same future month.

7. Douglas Jehl, "Crisis in the Persian Gulf: U.S. Armored Units Arrive to Anchor Ground Forces," *Los Angeles Times*, 15 October 1990, p. 6.

8. U.S. Department of Commerce, Economics and Statistics Administration, Bureau of Economic Analysis, *Survey of Current Business* (Washington: September 1993), p. 52.

9. U.S. General Accounting Office, *Energy Security and Policy: Analysis of the Pricing of Crude Oil and Petroleum Products*, Report to Congressional Requestors, GAO/RCED-93-17 (Washington: March 1993), p. 75.

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This Issue's Cover

The four ships of the *Kongo* class were completed in 1915 as battlecruisers, having high speed but limited protection. All four underwent major reconstruction between 1927 and 1930, resulting in an increase in protection but a reduction in speed from 27.5 knots to 25.9. A second class refit between 1933 and 1940 not only restored the lost speed but increased it to over thirty knots. Redesignated "fast battleships," the *Kongos*, like other Japanese battleships, were innovative and well known for their distinctive "pagoda" superstructures.

Bob Hobbs, an illustrator in the Graphic Arts Department of the Naval War College, also produced our Spring 1991 and Spring 1992 covers. He has also been, for over twenty years, a freelance illustrator, with a growing reputation today in the field of science fiction and fantasy. He has produced artwork for over a dozen national and international magazines, book publishers, and trading card and game companies. Mr. Hobbs has exhibited throughout the United States, with two very successful group shows at the Park Avenue Atrium in New York City. His second book, *Scarabaeus*, is forthcoming from Earth Prime.