WORLD OIL AND U.S. IMPORTS:
IS THE PAST PROLOGUE?

by

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As we move towards the end of the 1980's we can look back on almost a decade of rising world oil surpluses and falling oil prices, both trends accelerating in the post-1985 period. The trauma of physical shortages and exploding prices which occupied center stage in world economics and politics from 1972 through 1981 has receded into a historic nightmare as we contemplate the complete reversal of the buyer-seller relationship between then and now.

Yet, in the midst of plenty, the Cassandra warnings of another oil supply crisis in the early to mid-1990's, are heard once again and are, in fact, becoming louder. In the face of OPEC's desperate battle to stem the avalanche of surplus capacity within and rising production without, we are told that within 5 years the organization will once again have the power to raise prices at will and can be expected to do so. Those who make this prediction in the U.S. argue that the interests of our national security require the government to act now to prevent such a development or, at least, mitigate its impact. Since the proposed policies and measures would help the domestic oil producing industry, it is legitimate to ask whether the new doomsday warnings are not, at bottom, self-serving industry pleas. The answer is partly yes, but that does not invalidate them.

The U.S. oil producing industry and the industry which services it are indeed in serious trouble as a result of the 1986 price collapse. True, prices have risen since then. But they have remained...
too low for U.S. producers to drill enough wells to replace their depleting reserves. To wit, in 1986 new oil reserves—just half the 12.2 billion barrels booked in 1985—were replaced only 65% of U.S. production. In 1987 the replacement rate was probably still lower, given the smaller number of wells drilled. By comparison, in the period 1980–85 the annual average of new reserves booked was equal to 100% of production.

Thus, absent a substantial and sustained increase in foreign oil prices in the near future, the commercial resource base of the domestic oil industry will shrink inexorably and probably fairly rapidly. No new public policy could arrest this decline. But the industry believes that administrative or legislative support measures could at least slow it down. There is much debate over what form this support should take. Like all special interests seeking public support, the oil industry must formulate its case in terms of the national interest to receive a serious hearing. It is beginning to get attention because oil imports are growing again, domestic oil production is declining and both trends are expected to continue into the 1990’s.

In other words, it is plausible, though by no means inevitable, that during the 1990’s the U.S.’s and the rest of the world’s dependence on OPEC oil will once again rise to the level where OPEC can temporarily dictate oil prices at will. The organization succeeded twice in using temporary price explosions, caused by brief extraneous supply disruptions, to maintain oil prices for extended periods vastly above their free market value.
Thus, the argument goes --and must be taken seriously -- that under similar circumstances, or even without an extraneous trigger, OPEC would do so again. However, it must also be recognized that this proposition contains the facile assumptions that history repeats itself, that the 1990’s will essentially resemble the 1970’s, that technology stands still and that none of the major players on the supply or demand side has learned a lesson from the past, all of which is unlikely.

The strongest point underlying the present warnings is the almost certain return to the Middle East for incremental world oil supplies after 1990. How rapidly this will take place depends primarily on the future price of oil as well as the present perception of the future price. The lower the price or the price perception, the faster it will occur and vice versa. But at any realistic price assumption the share of Middle East oil supplying the world’s import markets will grow significantly from now on through the 1990’s. This should not come as a surprise. OPEC Middle East crude oil production dropped from a peak of 21.6 million B/D in 1977 to 9.5 million B/D in 1985, thereby absorbing the bulk of the global decline in oil demand as well as the increase in non-OPEC supply throughout that period. Now that world demand is starting to rise again and total non-OPEC supplies are likely to level off within 4-5 years and probably decline thereafter, this process will be reversed. In fact, by 1987 OPEC Middle East crude production had already risen to 11.7 million B/D.
The Department of Energy study, *Energy Security*, published in April 1987, projects under its low price scenario total OPEC Middle East crude production of not quite 21 million B/D in 1995. This seems unrealistically high since it assumes sustained low prices and high demand. But it could easily be met, with capacity to spare, if the region's producers want it. Thus, resource constraint will not pose a problem for oil supplies by the mid-1990's nor by the end of the century.

However, once the Middle East has reestablished its position as the world's incremental producer with control over virtually all actual and potential spare capacity, its exporters would collectively be in a position by the mid-1990's to raise prices temporarily almost at will if they so choose. In a market characterized by rising demand and falling spare producing capacity the marginal supplier has this power.

To what extent Middle East exporters will actually use this power is of course the $64 billion question. If they take a long-term rational approach, based on their current 100-year reserve/production ratio, in planning their revenue optimization, they will not let prices rise to the point of depressing world consumption once again and stimulating high cost oil and other energy production, particularly since such production will continue once the investment has been made, even if prices decline again. Thus, the short term gains of cartel price maximization could well be more than offset by medium to long-term market losses. This is not just a theoretical possibility, as OPEC has learned.
How successful the Middle East countries will be in this rational economic approach depends to a significant extent on political and strategic factors and considerations that have little to do with the economics of oil. In other words, the very low cost and superabundance of Middle East oil may not be the principal future determinants in setting its price, just as they were not in the past.

How will the U.S. oil industry fare under these conditions? U.S. crude production will of course decline for the foreseeable future. The aforementioned DOE report illustrates this. Even under its High Price Case in which the price is approximately back to the nominal 1985 level by 1990 and to the real 1985 level by 1995, U.S. production in 1990 will be almost 1 million B/D lower than in 1985 and an additional 1.2 million B/D lower in 1995. Yet, these prices would be considered quite acceptable by 1985 standards.

What this suggests is that over time the potential for oil discoveries and production is quite limited in the U.S. and only up to a point sensitive to higher prices. Importantly, this is probably less true for domestic natural gas production whose reserve/production ratio in the lower 48 area is substantially higher than that of crude oil, and could be readily increased, absent the existing gas delivery surplus. Thus, higher prices may do more to stimulate gas production than oil production.

The limited upward price sensitivity of oil production is probably not a mirror image of its downward price sensitivity. In other words, a substantial price increase would at most
postpone the production decline for a number of years. On the other hand, if domestic crude prices were to fall back to the mid-1986 low of about $11 and remain there for several years, most exploratory oil and gas drilling would cease, given the fact that direct domestic finding and development costs are in the $12-15 range. Development drilling would also drop sharply, as would flowing stripper well production. The result would be the phase-out of much of the domestic producing industry and its ancillary service industry over this period.

Technically and physically a price decline of such magnitude and duration is entirely possible. There is enough readily available or developable oil in the world to meet all requirements at a positive cash flow at this price for 4-5 years, perhaps longer. Of course, such a scenario could only come about if OPEC were to collapse totally and its members then engaged in maximum competition with each other and if no reconstitution of the organization in any form became possible for this period. In other words, prices would have to be determined in a fully competitive, totally free, unfettered market. This is highly unlikely, given the overwhelming economic and political self-interest of all oil exporters to prevent it or, if it should happen, to quickly reverse it.

Now let us move from these hypothetical speculations to an appraisal of future U.S. oil imports under what we might call a mid-point price scenario, say, a price rising less than inflation to 1990, and then slightly faster to 1995. First, a look at production. We know that lower-48 production, which had remained approximately flat from 1980 to 1985, fell as a consequence of
the price drop by 800,000 B/D, or 11%, from 1985 to 1987. In the last quarter of 1987 the year-to-year decline levelled off to about 200,000 B/D. It will continue to fall, perhaps at a somewhat slower rate, even under a somewhat higher price than we assume.

Alaskan production, which is far less sensitive to price declines because of its much lower production cost, has moved in the opposite direction. It rose by 40,000 B/D in 1986 and nearly 100,000 B/D in 1987. It is now reaching its production plateau of 2 million B/D, will stay there until 1990 and then enter its long-term phase of declining production with a projected drop of 500,000 B/D in the first half of the 1990’s. Thus, from 1990/91 on Alaska will contribute to the decline in U.S. production. By 1995 this may result in a total U.S. production level about 2 million B/D below the 1985 level.

U.S. demand which was at 15.7 million B/D in 1985, rose by a hefty 3.5% in 1986 and a further 1.5% in 1987. Assuming annual increases below 1% to 1995, demand in the latter year would be about 17.5 million B/D. Imports would therefore have to rise sufficiently between 1985 and 1995 to offset the decline in production and provide the increase in demand. This might require a 4.0 million B/D increase in imports from the 5 million B/D level of 1985. About 1.5 million B/D of this increase has already occurred. It has raised our gross import dependency from 32% of total U.S. demand in 1985 to nearly 40% in 1987 (see Figure I). By 1995 it is likely to exceed 50% under our assumptions.
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Can we afford such a ratio of import dependency? There are as many answers to this question as there are definitions of the term "afford". One can of course point out that many other industrial nations, including such major ones as Japan, Germany and France have always been more than 90% dependent on imported oil. Yet, this has not hurt their economies, nor raised their energy cost above that of the U.S. However, these countries don’t have to cope with the U.S.’s huge balance of trade deficits of which oil imports are a large part.

Up to now, the oil price decline has actually helped our trade balance because it has lowered our oil import bill. In 1986 it was $15.5 billion lower than in 1985. In 1987 it rose but was still $9-10 billion below 1985 despite the substantial increase in the volume of imports (see Figure II). By 1989 our
oil import bill will exceed the 1985 level. Thereafter it will keep growing. But even in the early 1990’s oil’s share of total U.S. merchandise imports will still be below the 20-30% ratio of the early 1980’s. Japan and the oil importing nations of Europe don’t face this problem. Their oil imports will rise much less than ours to 1995. Hence, their oil import bills could well remain below the 1985 level throughout this period.

Figure II

VALUE OF PETROLEUM IMPORTS AND MERCHANDISE IMPORTS, 1980-87

What about the security of foreign supplies? Can we count on sustained ready commercial access for our growing import requirements?

As pointed out, the physical availability of our projected import volume by 1995, or more if needed, is not in question. Purely economically, the geographic sources of these imports are
of limited importance. Since oil is a fungible commodity, oils from various sources are largely interchangeable and oil prices are generally inter-related and competitive. Thus, any price change initiated by one major exporter is either transmitted to all others or is unlikely to be sustained. However, there are political-strategic implications to certain foreign oil dependencies. The most obvious is of course the Middle East. Between 1980 and 1985 the Middle East’s share of U.S. oil imports dropped from 30% to 6%. In 1987 it was back to 16.5% (see Figure III). By 1995 it may well account for 25-30% of U.S. oil imports.

**Figure III**

MIDDLE EAST SHARE OF TOTAL U.S. PETROLEUM IMPORTS, 1973-87

In analyzing the security of these supplies we must differentiate between long term dependency on foreign oil and the risk of short term foreign disruptions. It is important to keep
these two concepts apart, since they are essentially different and require different policy responses.

A disruption which is temporary in nature can occur at any moment or may never happen again. For the foreseeable future a disruption could only have a serious effect on world oil supplies if it occurred in the Middle East. The reason is the region's excess producing capacity. Currently it accounts for 65-70% of OPEC's total excess producing capacity. By the mid-1990's it is likely to exceed 90%. Thus, if export supplies outside the Middle East became unavailable at any time, importers could readily draw on the Middle East's excess capacity. But if any of the major Middle East producers' exports became unavailable so would their excess capacity. Which would make the disruption more serious and require the importing countries to deal with it on their own.

They can do so through various readily accessible and pre-tested emergency measures. The most important of these is the Strategic Petroleum Reserve (SPR) in the U.S. and similar non-commercial reserves in all other industrial countries. Clearly, our increasing level of imports requires us to keep filling the SPR as rapidly as possible until it reaches the Congressionally mandated level of 750 million bbls. Another measure to assure continued access to oil supplies during a disruption is contained in our recent trade agreement with Canada, currently the U.S.'s largest foreign oil supplier.

The long-term growth in U.S. dependency on foreign oil is inevitable, as has been pointed out. However, the rate of this
growth can be affected positively or negatively through government action or inaction. The pros and cons of these policies have been widely discussed. I would just like to touch on a few. The government’s most negative existing policy in this area is maintenance of the Windfall Profit Tax. The tax is obsolete in concept, creates a potential disincentive to development drilling, and also reduces the cash flow for exploration that would otherwise accrue to the industry from even a modest price increase which is certainly needed.

Another negative public policy is the long-standing prohibition on drilling in the Arctic National Wildlife Refuge. The oil industry considers this the most promising unexplored area in the U.S.

Regarding new governmental action, import fees and drilling tax incentives are the most widely discussed measures. Per dollar of expenditure a tax incentive is much more cost-effective since it concentrates the support where it is actually needed: the drilling of new wells. An import fee might achieve a similar result for new production but it would also raise the price of all flowing production (including natural gas whose price is determined by parity with certain oil products), even though at current prices flowing production obviously does not require any price boost, nor is there a significant volume of shut-in production. A fixed import fee would of course have an inflationary impact on the economy and could also hurt our trade balance, both by raising our cost of energy relative to that of other countries and by inviting trade retaliation from oil exporters who all strongly oppose the fee.
An oil import fee would of course help reduce the budget deficit and encourage energy conservation. However, since there is no causal connection between the price or import volume of oil and the federal budget deficit, singling out oil as an instrument for deficit reduction would be an arbitrary act, devoid of logic. Furthermore, the oil import fee is not an efficient revenue raising instrument. Regarding the conservation effect, if this is desired, an increase in the existing consumer tax on transportation fuels would be far simpler, more effective and less distortive.

Another currently discussed concept is a floor price for crude oil, supported by a flexible import fee or a special consumer tax whose revenue could be used to subsidize the chosen floor price, or, possibly, a tax reduction tied to a floor price. The policy question here is whether the floor price is intended to raise existing prices or to provide a safety net under them for longer-term investment purposes. In the latter case it might provide tangible benefits at very little cost. The concept dates back to 1975 when the International Energy Agency adopted a $7 floor price which remains in effect though it has never been adjusted.

In conclusion, I would like to reiterate my basic points: public action or inaction can affect the pace but not the direction of the post-1985 trend. Over the next 7 years domestic oil demand will rise modestly, production will decline moderately to substantially, while oil imports will account for at least half of total supplies by 1995. Meanwhile, the Middle East’s