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GLOBAL OIL DEMAND AND SUPPLY: AN OVERVIEW

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For many commodities an overview of future supply and demand would start with a projection of changes in physical requirements and availability and proceed from there to a determination of the price required to balance the projected supply and demand levels.

For oil we must start at the price end and work back to determine the physical quantities required and available at the assumed prices. The reason, as everyone knows, is that crude oil prices are not determined by market forces but by a producer's cartel, which for the past 15 years has consistently maintained a price substantially above the free market level.

There has been much talk in the last couple of years, first about OPEC's demise or irrelevance and then about its likely early return to a strong position of pricing power. Let us briefly examine both these propositions because inevitably OPEC's demise, survival or resurgence will be the most influential single factor in determining oil prices and, hence, supply and demand, during the next 7-8 years, say, to 1995.

As to the first proposition, the current world oil price in the \$17-19 range is about twice what it would be if the cartel were to collapse and unfettered market forces were to determine prices. Any cartel that can maintain a differential of that magnitude in the face of the kind of adversity OPEC has been facing for the past 6 years can hardly be called irrelevant. There are four basic external threats to the life of a producers' cartel: technological changes which reduce the demand for its

product; changes in consumer behavior which have the same effect; development of competitive substitute products; and growth in the output and market share of producers outside the cartel's control. OPEC has had to contend with all these on a large and growing scale since 1980, plus a continuing lack of discipline within the cartel itself. OPEC's survival in the face of these adversities is based on its correct recognition that what it has is still a lot better than what it would get in a free market. Last year's live demonstration of what life would be like without OPEC has greatly strengthened this recognition. Furthermore, there is by now so much vested interest outside OPEC in the existing cartel price structure that if it were to collapse most high-cost non-OPEC producers, such as the U.S., Canada and the North Sea, would somehow protect their domestic energy production against uncompetitively low-priced foreign oil, while many importers would raise their consumer taxes on oil products to dampen the increase in demand. Under these conditions the export revenue of all OPEC members would probably fall substantially even below last year's very inadequate level and remain there for a number of years. This scary but real prospect for all members should provide sufficient incentive to keep the cartel operative or, if it should fall apart, quickly reconstitute it.

Thus, while economic factors could justify a drastic price reduction, institutional factors are likely to prevent it during the period under discussion.

Now let us examine the opposite proposition, namely that within a few years OPEC will again be in a position to raise real prices substantially and will not hesitate to do so. The

proposition has been succinctly summarized by an independent domestic producer who, in arguing for a U.S. oil import fee, stated, "you pay us \$25 now or you'll pay OPEC \$50 a few years later." There have also been projections published which show OPEC production moving from the current level of about 60% of productive capacity to 80% by the early-to-mid 1990's. This was coupled with the assertion that at 80% of capacity OPEC was in a position to raise prices to "high levels" and maintain them there.

It is of course fundamentally correct to relate OPEC's future price setting power to its available excess producing margin. OPEC's ability to maintain its 300% price increase of 1973/74 throughout the remainder of the decade was based largely on the fact that the organization produced at an average annual rate of nearly 30 million B/D from 1972 through 1980, with no annual level below 27 million B/D. The resulting very low spare producing capacity of the world's marginal producer group was a major factor in making the price increases stick. However, whether OPEC would actually wish to repeat this action in the 1990's, even if could do so, is by no means certain. Too many hard lessons have been learned about the not-so-long-term negative consequences (for OPEC) of excessive price increases on supply and demand. OPEC may not want to risk once again long-term damages to obtain short-term gains.

Whether OPEC will actually be even in a position to raise real prices significantly during the next 7-8 years depends to a large degree on the future import requirements of one single

country -- the U.S. I will try to demonstrate this in the following very brief analysis of the world supply and demand balance to 1995.

As we know, during the first half of the 1980's OPEC exports kept declining in the face of steady price reductions, much to OPEC's public and private surprise and disappointment. The 50% price drop of 1986 did bring about an increase of more than 2 million B/D, or about 18%, in OPEC exports. But the growth was bought at an enormous cost, since OPEC's revenue fell by 45%, or nearly \$60 billion, despite the volume increase. Worse, the volume increase did not last. This year OPEC's oil exports are likely to be only 1 million B/D above the 1985 level despite the fact that 1987 prices are still 25-30% below the 1985 average. The reasons are a much slower growth in world oil consumption (1% vs. 3% in 1986), a resumption of the growth in non-OPEC production outside the U.S., and no repeat of last year's substantial stockbuild. In 1986 half of OPEC's more than 2 million B/D exports increase went to the U.S. In 1987 the U.S. is likely to increase its total gross oil imports from all sources by less than 500,000 B/D, about half of which is likely to be supplied by OPEC. Small as this increase is, it is better than what OPEC can expect from Europe where imports are declining again after rising 0.5 million B/D in 1986 (the first increase in 10 years). In Japan, too, last year's import increase from OPEC has been reversed in the first half of 1987.

1988 is unlikely to be much better. Regardless of whether prices remain at current levels or are moved up by \$1-2 at the next OPEC meeting, the export demand for OPEC oil will be about

the same as this year, perhaps even slightly smaller if Yemen's new production is brought on at 200,000 B/D early the year and the Soviet Union continues to defy predictions of declining oil exports by raising them again, as it did last year.

The reason for this weak post-1986 reaction to the price collapse is that on the demand side both built-in structural changes and the continued surplus of competitive energy sources are again inhibiting the growth of imports from OPEC, the world's marginal supplier. At the same time, on the supply side the current price appears adequate to continue stimulating oil exploration and development in geologically and economically high potential and low-cost areas, helped significantly by cost reductions, technological innovations and changes in fiscal regimes.

Assuming maintenance of current real prices, the structural reductions in oil requirements, measured by changes in consumption per unit of equipment, will continue in the transportation, residential and industrial market, particularly in the U.S. The substitution of oil by other energy sources will also continue but will be far more pronounced in the 1990's in Europe and Japan than in the U.S. where rising gas prices will put gas above fuel oil parity in some regions of the country. Similarly, nuclear power substitution or preemption of fossil fuel generated electricity will start levelling off in the U.S. in the early 1990's but will continue at least to the end of the century in Europe and Japan.

Thus U.S. oil demand by 1995, may well be up to one million B/D higher than in 1986. Neither Western Europe nor Japan will show an even approaching growth, not even combined. Furthermore, total North Sea production is likely to decline at a slower rate to 1995 than had been assumed earlier, while Soviet oil exports may well rise or, at least, not decline.

The LDC's will of course show a significant rise in oil demand during this period, perhaps twice as much as the industrial nations. But the LDC's include many oil producers. A substantial and growing part of their oil requirements will therefore be met from internal sources. Last year total LDC oil requirements (excluding the OPEC countries whose excess producing capacity is sufficient to meet their internal growth without limiting their exports) amounted to about 9 million B/D while their production exceeded 11 million B/D. Both their demand and their production are growing. Demand is likely to grow faster, providing a modestly rising market for OPEC exports but hardly enough to absorb a significant part of its excess producing capacity.

So, now let us look again at the U.S. We have already seen that demand will probably be up by about 1 million B/D from last year by 1995. A more important contribution towards a higher import level can be expected from the supply side. In the last 8 months of 1986 when the price break really hit field operations, production in the lower-48 states was nearly 500,000 B/D, or about 7%, lower than in the same period of 1985. This year lower-48 production has declined further, albeit at a much slower rate, due to a combination of cost reduction and price increases

relative to last year. Next year, lower-48 production could well average nearly 1 million B/D below the 1985 level. Even if the decline should slow down after 1988 because of the assumed nominal price increases together with further cost reductions and technological improvements, we will still have to cope with the terminal decline of the Northern Alaskan production after 1989. By 1995 this together with the declining lower-48 production plus the increase in demand could well require an increase in net U.S. imports of 3-3.5 million B/D above the 1986 level of 5.4 million B/D, raising net U.S. import dependency to more than 50%, compared to less than 27% in 1985. A higher share of these imports than now will come from overseas since Canadian light crude production and exports are expected to decline rapidly from the late 1980's on and will not be fully replaced in the U.S. import market by Canada's growing heavy crude production.

Thus by 1995 U.S. imports from overseas may well be up by more than 3.5 million B/D over last year. Directly or indirectly all of the additional requirements must be supplied by the world's marginal supplier, which means OPEC. Thus, the only way OPEC crude production can get back to a level substantially above 20 million B/D by the mid-1990's is if U.S. import requirements move up the way I have just described.

Under this projection OPEC will still have an excess producing capacity of over 20% by 1995 but it will be much more concentrated in the Persian Gulf than now. This could well have political and logistic consequences for oil importers. But volumetrically world oil demand could still be comfortably met by

1995 at real prices not much different from today's.

But suppose OPEC views the market differently and, induced, or seduced, by the growth in exports, decides to start raising real prices significantly within a few years. For a limited period the increase could probably be maintained but in the U.S. it would soon bring forth more domestic gas to compete with oil, would slow the decline in lower-48 production, might permit the recovery of additional North Slope oil through EOR production of the large West Sak heavy crude structure, make importation and conversion of heavy crude oil from Alberta more attractive etc., etc. All of these developments would reduce the rise in our overseas imports level and, hence, would ultimately have to be absorbed by OPEC.

To summarize, a sustained substantial decline from the current price during the next 7-8 years is economically feasible but structurally unlikely. A substantial increase from the present price level is sustainable for a limited period after which it would backfire on its initiators.

Let me close on a note of uncertainty. If U.S. policy makers decide the growing level of oil imports is damaging to the economy and potentially to the national security, they may intervene in the market to stimulate domestic production and/or dampen the growth in demand. If their intervention is effective in slowing down the growth in U.S. imports (no intervention is likely to arrest it) OPEC would have to bear the consequences.