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# WORLD OIL: HOW WE GOT HERE AND WHERE WE ARE GOING

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The world oil developments of the last 6-7 years sometimes seem like a series of random events without any underlying logical pattern. We saw crude prices quadrupled almost overnight, then decline again in real terms over a 4½ year period, then rise by over 70% in less than one year. We experienced real physical shortages that caused chaotic market conditions, followed by substantial world oil surpluses, to be followed again by physical shortages.

Yet, the erratic and therefore largely unpredictable nature of these developments has not been due to the absence of any identifiable logic underlying and connecting them, but rather to the fact that they were often triggered by extraneous events, such as a war or a revolution, which are inherently difficult to predict, particularly within a specific time frame. Yet, in retrospect we can clearly see a compelling logic relating all of these developments in the world oil market.

Take the quadrupling of world oil prices between mid-1973 and January 1974. Until that price increase non-Communist world oil demand had risen at an average annual growth rate of 7.5%. The rate was approximately the same whether measured over the 10-year period or the 5-year period ending in 1973. Thus, it must be assumed to reflect the long term growth rate at the average world oil price prevailing in the 1960-1972 period. Had this price not significantly increased in real terms and the growth rate continued even at a somewhat slower rate of, say, 6% throughout the remainder of the 1970's, non-Communist world oil requirements by 1980 would have been 20 million B/D higher than the 51-52 million B/D we now expect for next year. Under the most optimistic assumption of OPEC's collective willingness and capability to maximize its oil output, supplies could have come nowhere near meeting such a demand level. Furthermore, had the pre-1974 price level prevailed just a few more years, production outside OPEC would have been substantially lower by 1980 than it will actually be.

Thus, it is obvious that a sharp increase in the real price of oil was required by the mid-1970's at the latest to avoid a major <u>resource</u> shortage by the end of the decade. The international oil companies, acting individually, were not in a position to bring about such an increase because of their need to remain competitive with each other. Had they tried to do so collectively, or even given the appearance of such action, they would have run into major political and legal trouble in their home and other consuming countries. Thus, the pre-1974 production strategy of the private companies was essentially consumer oriented in that it was based on sales maximization rather than price maximization.

The increase therefore had to come from an oil producer body with considerable collective enforcement power beyond the reach of consumer country legal and political control, a strong selfinterest in substantial price increases, and the motivation to produce less oil in the short run in order to have more available for the long run. OPEC was such a body and that is why it succeeded so spectacularly in 1973/74 in bringing about the increase in the world oil price.

However, OPEC apparently overshot the mark at the time--that is the price increase was too fast and went too far. This helped to set the stage for the world oil surplus of the next five years. There were two reasons for this development: (1) non-Communist world oil demand from 1973 through 1978 rose at an annual rate of only 1.2% which must be considered a quantum reduction from the previous growth rate (and in the industrial nations the growth rate was half that much); and (2) the higher prices stimulated additional production in areas outside OPEC, such as Alaska, the North Sea, Mexico, etc. As a result, the small increase in world demand during this period was met entirely from non-OPEC sources while OPEC exports actually declined.

The surplus caused world oil prices to fall fairly significantly in real terms from 1974 through 1978, particularly in countries like Germany, Switzerland and Japan, whose currency rose vis-a-vis the dollar.

Yet, it appears now that the price decline went beyond a mere correction of the excessive part of the OPEC increases in 1973/74. It gave consumers once again the signal that the supply of oil was plentiful for the foreseeable future. However, throughout the

1970's the underlying oil resource structure was actually deteriorating; the world kept finding less oil each year after 1970 than it consumed. As a result the world reserve/production ratio declined throughout this period. This is in direct contrast to the 1950's and 1960's when we regularly discovered more oil than we consumed, despite the rapid increase in our consumption.

Thus, the decline in prices from 1974 through 1978 were a misleading signal to consumers, since oil was actually becoming scarcer relative to demand during this period and, hence, more valuable. Another development in the same direction was the imposition of production ceilings by several OPEC members below their existing technical potential. This, too, reduced the commercial availability of oil and, therefore, made it scarcer.

All these factors should have pushed world oil prices up rather than down. In fact, this was generally expected in 1974 and 1975 when most projections assumed monetary price increases for OPEC oil which would at least keep pace with world inflation. Some of the forecasts even assumed a 1% or 2% real annual price increase after 1975. Had the latter forecasts turned out to be correct, today's composite world (F.O.B.) oil price might have amounted to $18/Bbl, significantly but not drastically below the actual current price of about $22/Bbl.

So, the OPEC price increases of the first 10 months of 1979 may again be viewed largely as an adjustment process to correct for the decline of the previous 4½ years. And, again, the correction may have been made somewhat too fast and may have gone somewhat too far for the health of the world economy.

Where do we go from here? Let me suggest some possibilities in the full knowledge that forecasting at a time like this is a very high risk sport.

The 70%, or $9-10/Bbl, price increase since last December has been absorbed without a major economic shock by the industrial oil consuming countries, so far. We do have a business recession in the making in the U.S. to which the recent oil price increases are undoubtedly contributing. But the recession is expected to be relatively mild and was widely predicted well before the oil price increases occurred. In Europe and Japan no actual recession is expected this year or next. However, there will be a significant slow-down in the economic growth rate, due in large part to the oil price increases. The inflation rate has certainly been significantly increased in most industrial countries by the direct and indirect impact of the OPEC price movements. But in a number of these countries, particularly the U.S., it was already excessive beforehand. Thus, while OPEC price increases have clearly contributed to the world inflation problem, they can not be considered its prime cause. The expected OPEC foreign exchange surplus (the excess of export earnings over import requirements and foreign aid disbursements) will be at least \$50 billion for all of 1979 and probably the same amount for 1980. This is more than 7 times last year's surplus and will cause a perceptible reduction in the domestic purchasing power of the major oil importing countries. But it is considerably less than the surplus piled up in 1974 which turned out to be manageable after initial fears that it would not be.

One consequence of these experiences with the economic impact of this year's OPEC price increases is that the industrial countries are becoming more concerned with the production policy and capability (technical and political) of the organization and its members than with their pricing policy. This is a change in emphasis from the 1974-78 period and reflects the recent experience that insufficient supplies at any given OPEC-administered price level represent a far greater threat to the economic and political stability of importing countries than the price level itself.

This new concern with OPEC production ceilings rather than its price floors seems appropriate for the near future. The next five years will differ drastically from the 1974-78 period in that they will probably be dominated by supply restrictions or at least limitations. This will not be due to resource insufficiency. If OPEC members and other exporters wanted to, they could raise their production--without violating accepted industry conservation and engineering practices--sufficiently to permit an annual growth rate in non-Communist world oil demand of about 2.5% until at least 1990. At that rate world oil supplies would not act as a constraint on world economic growth during this period, given the already established incentives and directives to conserve scarce forms of energy and substitute other energy sources for oil.

Unfortunately, supplies are unlikely to be available for such a growth rate in oil demand. Production ceilings by oil exporters, OPEC and others, can be expected to be more effective in the future than in the past and will probably constrain the growth in oil consumption. The new policy reflects a determination by OPEC members not to permit a repetition of the 1974-78 period when the OPEC oil surpluses overhanging the market prevented its members from adjusting their prices for world inflation and the declining international value of the dollar, so that the real price of OPEC oil dropped substantially during this period.

The policy also reflects a growing awareness that large-scale economic diversification, while not unachievable, remains a very elusive and distant goal for most OPEC members. For the foreseeable future--at least the next quarter of a century--oil exports will continue to be their principal source of income and means of financing economic growth. Thus, a resource conservation policy which maintains their long-term export capability by postponing the depletion of their oil reserves through a curtailment of current production is clearly in these countries' best interest, particularly since the act of production curtailment *per se* tends to increase the value of their remaining reserves.

One of course cannot predict the exact level of OPEC's future production ceilings. It is entirely possible however, that next year Saudi Arabia will drop its output by a million B/D to return to its previous ceiling of 8.5 million B/D. Kuwait seems to be considering a 500 thousand B/D reduction from its previous ceiling of 2 million B/D for next year. Some other OPEC members may have similar plans.

Iran requires a special comment. Prior to 1979 a production potential of 6 million B/D was readily available and, under the previous regime, would have continued to be available until the mid-1980's at least. Now there is no chance that the present or any other regime will produce more than the official target of 4 million B/D in the foreseeable future. In fact, a combination of political instability, lack of labor discipline and inability to perform the necessary maintenance operations may well cause production to fall below the 4 million B/D ceiling for an extended period. Indications of such a decline are already visible. In the extreme, but not extremely unlikely case, production could cease altogether due to political events, creating an almost instant world oil crisis.

The new non-OPEC exporters, such as the U.K., Norway and Mexico, can all be expected to increase their output, partly offsetting OPEC's ceiling policy, but their production policies, much like those of OPEC members, all emphasize deliberately slow, gradual development of their resource rather than the attainment of maximum output within the shortest possible period of time. While this will mean that production in these countries will peak later and the production plateau can be maintained longer than would be the case under a production maximization policy, it will also mean a lesser contribution from these sources to world oil supplies over the next 6-7 years than would be technically possible.

So, unlike in the 1974-78 period when excess supplies were waiting for demand growth to catch up, future demand will, in general, be putting pressure on OPEC production ceilings to be raised. I think the ceilings will be raised when the pressure is strong enough. But it will be done reluctantly, belatedly and, of course, at higher real prices. There is a sort of ultimate nightmare of a reverse economic syndrome, namely as the price of oil rises the production ceiling will be lowered, since the oil exporting countries will be able to meet their foreign exchange requirements with a reduced level of exports; the export reduction will then cause a further increase in the price which will lead to a further reduction in exports, etc. until the breaking point--wherever that may be and whatever it may imply.

I don't believe such a scenario will develop in the real world. For one thing, there is substantial evidence that, by and large, OPEC members do not wish to cause a major world oil shortage. Otherwise they would not have increased their production the way they did in the first 10 months of 1979 to offset the effect and aftermath of the Iranian production decline. In several cases this required the lifting of officially established production ceilings for the year. I also don't believe that OPEC members are totally unconcerned with the impact of oil price increases on the economies of their customers. Maintenance by Saudi Arabia of the OPEC marker crude at $18/Bbl is evidence of this. So is the fact that at Geneva last June OPEC tried to set a ceiling price rather than a floor price for its commodity--an unusual step for a producer organization.

However, just as not all OPEC members have accepted the principle of the ceiling price, not all may be concerned about the impact of their oil policies on their customers' economies. A recent statement by an Iranian oil official that if oil prices kept rising, consideration would have to be given to reducing production so as not to accumulate excessive amounts of foreign exchange is an ominous indication that the reverse economic syndrome is not just a phantom fear of scared consumers. It may be worth recalling in this connection that a recently published document by the U.S. Central Intelligence Agency forecasts an almost inevitable world oil shortage by 1982 with further deterioration to 1985. Not everybody agrees with this outlook and it may well be a "worst case" scenario presented as a "most likely" scenario. But the study is too well documented and researched to be dismissed out of hand.

For the very near term we see the possibility of a slight excess margin in available productive capacity developing towards the end of 1979 or early in 1980 if OPEC production is maintained at approximately the current rate. Year-end inventories should be slightly above the year-ago level under these conditions. In 1980 world oil requirements will be virtually unchanged from this year. This will be due largely to a decline in U.S. consumption which will be negatively affected by the continuation of the recession into next year, the additional availability of natural gas and the growth in utility use of nuclear power and coal. U.S. oil imports in 1980 will probably be below the President's recently established ceiling of 8.5 million B/D.

World oil supplies should be adequate to meet demand in 1980, if OPEC production is not reduced by much more than one million B/D from the current level, since an increase in non-OPEC production of about that magnitude is expected next year.

In 1981 world oil demand will likely accelerate with renewed U.S. economic growth and continued increases in economic activity in Western Europe and Japan. Increases in non-OPEC oil supplies will slow considerably, with probably only about 650 M B/D of net supplies being added, compared to 900 M B/D in 1980, after taking into account a likely further reduction in net oil exports from Communist countries, and the resumption of the production decline rate in the U.S. after stabilization in 1980 due to an increase in Alaskan output. Thus, increased oil supplies outside of OPEC would permit only about a 1.25% increase in world oil consumption. Since it is likely that to support economic growth world oil demand will have to increase significantly above this rate in 1981--perhaps at 2-2.5%--adequate world oil supplies in that year will again depend on OPEC's willingness and/or ability to furnish the balance.

From 1981 to 1985 the likely incremental oil requirements for the non-Communist world to support a minimum acceptable economic growth rate will be about one million B/D per year. If less than that amount is available world economic growth could be severely constrained. Up to half the additional million B/D could come from growing non-OPEC production. The balance would have to be supplied by OPEC. By 1985 this would require a total OPEC production level of perhaps 33.5 million B/D, compared with a current production of about 31 million B/D. As pointed out, the group's resource and technical capability to produce at the required level are not in question. But its political ability or willingness to do so is in question. Thus, the key factor in any forecast of the world oil market inevitably is a guess of what production ceilings OPEC members will impose or what ceilings will be imposed on them by extraneous political events.

This does of course not mean that the future market balance will be determined entirely on the supply side. But even if we make the probably unrealistic assumption that oil demand in the industrial countries of the West will not increase at all over the next 5-6 years, it is quite possible that available world oil supplies will remain relatively tight, and quite likely that real world oil prices will rise during this period.