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THE LIMITATION TO OPEC'S PRICING POLICY

by

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The world oil developments of the last eight years sometimes seem like a series of random events without any underlying logical pattern. We saw crude prices quadrupled almost overnight in 1973, then decline again in real terms over the next 4 1/2 years, 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. We had permanent price increases brought on by short term interruptions and we have had price declines during a lengthy large scale interruption.

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. 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 five-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 1960-1973 period.

Had growth continued at that rate since 1973, or even at a somewhat reduced rate (assuming a move toward market saturation during the 1970's), the amount of oil required by 1978 would demonstrably have been substantially more than the world's physical and technical petroleum resource base would have been able to provide. At a growth rate of just 5% annually, non-Communist world (NCW) oil demand by 1978 would have been 61 million B/D instead of the actual 51 million B/D. If all OPEC members had been willing and able to maintain output in 1978 at their hypothetical maximum sustainable capacity of 34.5-35.0 million B/D, instead of their actual production of 30.3 million B/D, they could only have supplied slightly less than half the 10 million B/D additional requirements. By 1980 the 5% growth rate would have resulted in a consumption of 67 million B/D, or 18 million B/D more than the actual consumption. Furthermore, at the oil price assumed for the 5% demand growth rate (which was six times the actual growth rate registered during this period), non-OPEC oil supplies would have increased by far less than the 2.0 million B/D realized between 1973 and 1978 or the 3.5 million B/D realized by 1980. This would have raised the hypothetical supply/demand gap still further.

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 resource shortage by the end of the decade. The international oil companies' individual ability to bring about such an increase was limited by their need to remain competitive with

each other. Had they tried to act collectively, or even given the impression of doing so, they would have run into major political and legal trouble in their home and other consuming countries. In retrospect it is clear that 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.

Thus, for the world price increase to take place when it did, it 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 self interest 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 and Mexico. As a result, the small increase in world demand during this period was met entirely

from non-OPEC sources while OPEC exports actually declined. (See Table 1).

TABLE 1

OPEC EXPORTS AND NON-COMMUNIST WORLD OIL DEMAND, 1973-1980

(Millions of Barrels Per Day)

	Demand	OPEC Exports	OPEC Export Share of Demand
1980	49.0	24.7	50.3%
1979	51.6	28.8	55.9
1978	50.9	27.9	54.8
1977	49.5	29.6	59.8
1976	48.0	29.3	61.0
1975	45.2	25.6	56.7
1974	46.3	29.1	62.8
1973	47.9	29.5	61.6

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. But even in the U.S. the decline, in real prices, of the OPEC marker crude amounted to about 12.5% in the 4 1/2 year period between the 2nd quarter of 1974 and the 4th quarter of 1978.

This is not to say that in the 1974-78 period world oil prices were shaped primarily by market forces. Far from it. Throughout these five years the OPEC "cartel" effectively determined the level of world oil floor prices which were invariably higher than they would have been under free market conditions. However, some OPEC members, led by Saudi Arabia,

the group's largest producer, were concerned about the apparent negative economic effects of the 1973 price increases on the industrial and, even more, the developing countries of the world, and the potential political ramifications of these effects. Thus, in 1977 Saudi Arabia, supported by Abu Dhabi, forced the other OPEC members to accept a price increase substantially below what they had voted for and also below the world inflation rate. In December 1977 Saudi Arabia and Iran joined forces to freeze OPEC prices for all of 1978 at the mid-1977 level.

Market forces did play a significant, if indirect, role in these decisions, for without the market-induced surplus producing capacity of most OPEC members throughout this period, Saudi Arabia would probably not have succeeded in imposing its relatively moderate pricing policy on the rest of OPEC. Nor would there have been any sense in trying to, if oil supplies had been tight despite the quantum price increases.

Before discussing the second OPEC price explosion and its consequences and speculating on the price trends to 1990, it might be useful to consider briefly the question of whether, and for how long, the OPEC price in existence on the eve of the Iranian revolution could have been maintained in the absence of that revolution and the ensuing Iranian-Iraqi war. The answer might tell us whether the OPEC-imposed price rises of 1979/80 accelerated or reversed an underlying longer-term trend in the world oil market.

Oil demand, after falling sharply in 1974 and 1975, recovered sharply in 1976 and then rose at an annual rate of about 3% in both 1977 and 1978. A similar growth rate had generally been forecast for 1979 in the absence of significant real price changes. This could be taken as a very tentative indication that at the price level and the state of technology of energy conservation and oil substitution prevailing in 1978, the long term annual growth rate in NCW oil demand would have been around 3%. However, we know that even before the Iranian revolution OPEC members had agreed to reverse the real decline in their oil prices by raising the OPEC marker crude faster than world inflation. The price increase for 1979 agreed at the OPEC ministerial meeting in Abu Dhabi in December 1978 would have raised the organization's official marker crude by year-end 1979 to $14.80/Bbl, or by 14.5% over the year-end 1978 price. When that decision was made, consumer price inflation in the OECD area was running at an annual rate of just under 8%. There is little doubt that OPEC could and would have maintained its price level in 1979 under normal supply conditions.

A 14.5% price increase would of course have lowered the demand growth rate from what it would have been under the 1978 price. Let us assume, somewhat arbitrarily, that the longer-run effect of this price increase would have been to reduce demand growth from our previously expected 3% annual rate to 2.5%. Growing at that rate from 1979 on, NCW demand in 1985 would have been 60.6 million B/D, or 9.6 million B/D above the 1978 level.

Could this additional volume have been supplied at the assumed end-1979 price of $14.80/Bbl, adjusted for inflation, if there had been no Iranian revolution? The estimates in the following table attempt to answer this question.

HYPOTHETICAL NON-COMMUNIST WORLD CRUDE OIL AND NGL SUPPLY, 1985

Assuming a $14.80/Bbl OPEC Marker Crude Price (in real terms) from 1979 to 1985 and no Iranian Interruption

(Million B/D)

	1978 (Actual)	1985
Saudi Arabia	8.3	12.0
Iran, Iraq, Kuwait	9.9	11.6
Other OPEC	11.6	11.8
OPEC NGL	0.7	1.7
Total OPEC	30.5	37.1
Non-OPEC Crude	16.6	19.3
Non-OPEC NGL	2.2	2.4
Net Sino-Soviet Exports	1.5	0.4
Total Non-Communist	50.8	59.2

The 37.1 million B/D volume for total OPEC production in 1985 would not have represented the organization's physical resource limitation at our assumed price. Rather, it would have been a combination of resource limitations, technical limitations at a point in time and political constraints on allowable output. Thus, on the basis of resource limitations alone, OPEC's collective output in 1985 could have been significantly higher under our price and political scenario than the number shown in the table. But it

would be highly unrealistic to consider only the physical resource base in forecasting actual output.

The single most important figure in our table is the 12 million B/D volume forecast for Saudi Arabia, since it accounts for 60% of the total OPEC crude oil output increase between 1978 and 1985. It was known in 1978 that Saudi Arabia was actively planning to raise its sustainable crude oil producing capacity to at least that level by 1985. Whether the Saudi government would have permitted actual production to rise to it is not at all certain. However, given an oil price which, under our assumption, would have been less than half the current (August 1981) price for Saudi crude, budget considerations might have motivated the Saudis to maximize the utilization of their sustainable capacity, particularly if market conditions had warranted it. The probability of a sustained Saudi production level significantly above 12 million B/D by 1985 would have been very low, in our view.

As we have seen, under our 2.5% annual growth rate assumption NCW demand would have reached 60.6 million B/D by 1985. Our supply forecast shows that this growth rate could only have continued to 1984 before running into constraints. Thus, the oil price in existence just prior to the Iranian revolution plus the increase initially intended by OPEC for 1979 would have been adequate (in real terms) at the most for 5 years, more likely less, even under our very low growth rate projection--one third of that of the pre-1974 period.

Higher real oil prices in the early 1980's would therefore have been inevitable even if Iranian oil supplies had continued to be available at their pre-revolutionary producing capacity. In fact, many forecasts made in the 1975-78 period assumed a 3-5% annual increase in real oil prices from the late 1970's on in order to close the hypothetical "gap" between world oil supply and demand.

Thus, the OPEC price increase since the end of 1978 was indeed a galloping acceleration of an underlying trend. Had the price increase intended by OPEC for 1978 continued at that rate in subsequent years (which might be about 5% above the world inflation rate), it would have taken until 1985 to reach the average price level of nearly $35 actually attained by January 1981. The difference in international income transfer is of course enormous if we consider that each one dollar increase in the world oil price raises the collective annual receipts of oil exporters by some $12.5 billion.

However, in appraising the 1979/80 OPEC price increases we must also consider the fact that the post-revolutionary Iranian oil "policy" has resulted in the indefinite, perhaps permanent, elimination of about 3 million B/D of previously available Iranian oil producing capacity. This is equivalent to 9% of OPEC's total pre-revolutionary producing capacity and would eventually have had to be reflected in a higher price level. In addition, the Iranian-Iraqi war has reduced available supplies by at least another

2.5 million B/D since October 1980. Had it not been for that war the underlying world oil surplus which became obvious to everyone by February/March 1981 would have been obvious by October 1980. Hence, the $5/Bbl price increase announced by the African producers at the OPEC meeting in Bali in December 1980 would very probably not have taken place.

Hence, once again, market forces would have raised real oil prices significantly from 1980 on to reflect the new reality of supply and demand. And, once again, OPEC raised prices probably earlier and certainly higher than the market would have done. But directionally its actions were clearly supported by the underlying market conditions.

This brings us to the present. It differs from the past, as I have just described it, in one essential aspect: market forces do not support any significant* further real price increases. In fact, there is now strong evidence that recent prices have been too high in relation to the underlying market structure. The indications of this are seen most clearly in the industrial countries, i.e. the OECD area. Demand peaked at 41.1 million B/D in 1979. This year it will probably be below 37 million B/D. Some of that decline is undoubtedly due to general economic recessions in several OECD countries and to the after-effect of the 1979 price shock. But the bulk of the decline appears to be structural and irreversible: Japan, which had a healthy economic growth rate last year, registered nevertheless a 9% decline in oil demand;

*We postulate as "significant" a real average annual price increase in excess of 1.5% from 1981 to 1990.

Germany, which had a modest economic growth rate, registered a 11% decline in oil demand; the U.S., whose economy was stagnant last year, had an 9% decline in oil demand. The same has been true so far in 1981. Decline in oil demand was on the order of 6% in the U.S. in the first six months in the face of a significant increase in the GNP. A similar development has occurred in Japan during the same period.

Another significant indication is that the decline in OECD oil demand since 1979 has not been part of a decline in total energy requirements but has almost everywhere been limited to oil. Thus, in 1979 when oil demand declined by about 0.5%, non-oil energy demand rose by 4.0%. The same divergent movements occurred in 1980 when NCW oil consumption dropped by 5.2% while total energy consumption rose by 1.5%. They reflect the fact that conservation and substitution have increasingly forced oil into the role of the marginal energy supply source.

There is good reason to assume this trend will continue for quite some time. Certainly, the potential for oil conservation and substitution is far from exhausted. It apparently took the economic stimulation of the second oil price shock to really trigger it, although the groundwork for it was laid by the first shock.

To be sure, this trend may not be strong enough to offset an increase in oil demand brought about by the expected economic recovery in Europe and accelerated economic growth in the U.S. in 1982-83. We may therefore see the decline in oil demand

temporarily halted or even reversed after this year. But when the economic improvement starts to level off, as it invariably does, the ongoing long term process of oil conservation and substitution is likely to reassert its domination over demand. Thus, the 41 million B/D historic peak for OECD oil demand reached in 1979 may very well remain unsurpassed throughout the 1980's.

In the less developed countries (LDC's) oil demand can be expected to grow at a rate which will approximately offset the decline in the industrial world. Thus, total NCW oil demand may be stagnant or, at most, increase minutely in the 1980's. The latest global energy forecasts by Exxon Corporation and by the Standard Oil Company of California both project an annual oil demand growth rate of 0.3% for the NCW from 1979 to 1980. Our organizaton (the Petroleum Industry Research Foundation, Inc.) projects an NCW decline rate of 0.3% for the period 1979-1990. (See Table 2). By comparison, in the 11-year period ending in 1979 the NCW growth rate was nearly 4.0% per annum.

To complete our picture of an extended period with no sustained upward market pressure on OPEC prices, it should be pointed out that non-OPEC crude oil supplies, which increased on average by nearly 1 million B/D in each of the last three years, are expected to continue to rise by around half this volume over the next 10 years. (See Table 3). Thus, it appears that for the foreseeable future no substantial long term increase in the real price of oil will be required by <u>market</u> forces to keep demand from growing faster than technically and economically available supply.

TABLE 2

FREE WORLD OIL DEMAND AND REQUIRED OPEC OIL PRODUCTION, 1978, 1979, 1980 AND PROJECTIONS TO 1990

(Millions Barrels Per Day)

	1978	1979	1980	1985	1990
World Oil Consumption					
United States	18.85	18.43	17.01	16.47	15.62
Western Europe	14.63	14.87	13.75	13.78	13.73
Japan	5.42	5.50	5.00	5.40	5.57
Other	12.60	12.98	13.46	15.09	16.25
Total	51.50	51.78	49.22	50.74	51.17
Other Adjustments(1)	-0.60	+1.05	+0.39	+0.20	+0.20
Total Free World Oil Requirements	50.90	52.83	49.61	50.94	51.37
Free World Oil Production Outside OPEC Countries(2)	19.24	20.52	21.11	23.83	26.28
Net Oil Exports From Communist Countries	1.50	1.02	0.90	0.20	-
Required OPEC Oil Production(3)	30.16	31.29	27.60	26.91	25.09

(1) Includes crude oil stockpiling requirements, inventory changes and unaccounted crude losses.
(2) Includes U.S. processing gain.
(3) Crude and NGL's.

Source: BP Statistical Review for 1978 and 1979;
1980 data and projections are those of PIRA.

TABLE 3

WORLD OIL SUPPLIES FROM NON-OPEC AREAS
1978, 1979, 1980 AND PROJECTIONS TO 1990
(Millions Barrels Per Day)

	1978	1979	1980	1985	1990
U.S.	10.77	10.66	10.76	9.90	10.00
Canada	1.58	1.83	1.74	1.60	1.75
Other Western Hemisphere	2.52	2.89	3.41	4.73	5.93
Western Europe	1.82	2.36	2.57	3.60	3.80
Other Eastern Hemisphere	2.56	2.73	2.63	4.00	4.80
Total	19.24	20.52	21.11	23.83	26.28

Note: Includes NGL's, and processing gains in the United States.

Source: BP Statistical Review for 1978 and 1979; projections are those of PIRA.

This does not mean, however, that the possibility of such an increase in OPEC prices, and, hence, world oil prices can be dismissed. By maintaining tight collective pricing discipline together with production controls in the principal member countries, OPEC could in fact enforce such an increase at any time, given its share of world oil production. Or it may decide that a substantial increase brought about by a temporary reversal of the underlying market trend, such as a supply interruption caused by

extraneous events, should be maintained when the long term trend reasserts itself. One has become familiar with this type of OPEC price setting.

In the short run--say, about 5-6 years--OPEC would probably derive a net benefit from its action, since short term price elasticity of oil is certainly below unity: the demand would fall by a smaller percentage than the increase in the price so that OPEC's export earnings would improve. But we have been told repeatedly that one basic difference between OPEC and the private multinational oil companies is that while the latter are guided largely by the goal of short term profit maximization, the former's chief aim is to maximize oil's long term contribution to its members' national economies. If that is OPEC's true aim, further significant real oil price increases are likely to prove counter-productive and not just in the very long run, particularly for those countries with high reserve/production ratios such as Saudi Arabia, Kuwait, Abu Dhabi, Iraq and Venezuela if that country's heavy oil reserves in the Orinoco region are included.

What these increases would do, and have already done on a remarkable scale, is to mobilize the entire technological and economic genius of the industrialized world for the task of reducing oil imports by another few million B/D over the next decade or so. The task is feasible but difficult at present oil prices. Add another $16-18/Bbl in real prices over the next 8-9 years* and its success is assured. Take synthetic fuels

*This would represent about a 50% increase from the current (mid-1981) composite OPEC crude price. By comparison, from 1973 to 1980 the real OPEC crude price rose by 700%.

as an example. Technologically and economically, this industry (particularly shale oil) is at the take-off stage in the U.S. But of late, several potential producers have had serious second thoughts about plunging ahead. One reason is that the new U.S. Administration appears for the time being less interested than the previous one in assisting with the birth of this industry. A second reason is that the current high interest rates on capital, combined with the long construction time for these projects, have lowered the potential attractiveness of the investment. Finally, looking at the declining market demand for oil, some companies are beginning to wonder whether conventional oil would not be available in sufficient quantities at lower cost than the synfuels. This does not mean that there won't be a synfuels industry in the U.S. But its birth will take longer and its growth will be slower than had been expected. All this could change within a few years, if the real oil price continues to rise significantly.

OPEC's current technically sustainable crude oil producing capacity is rated at 33.3 million B/D.* Actual production in the first half of 1981 was nearly 10 million B/D less. If real OPEC prices remain approximately where they are now, requirements for OPEC oil may increase slightly but will remain between 24 and 27 million B/D on an annual average, as is shown in our projection in Table 2. Thus, absent another major political supply interruption with long term consequences, the organization will have

*This assumes a sustainable capacity of 3.0 million B/D in Iran, 2.8 million in Kuwait and 10.5 million B/D in Saudi Arabia. All other capacity data are taken from the Central Intelligence Agency's publication, International Energy Statistical Review of July 28, 1981.

significant spare capacity throughout the 1980's under any realistic market assumption.

If the real price should rise by, say, 50% between 1981 and 1990, it is not unreasonable to assume that the export demand for OPEC oil will drop by some 3.5-4.0 million B/D, given the fact that the worldwide reduction in oil demand resulting from the price increase would be concentrated on imported oil and within the import sector on OPEC oil. This means that total OPEC oil demand could fall towards 20 million B/D. OPEC would then operate at 60% or less of its technical capacity. This would make it very difficult for the organization to continue to maintain its price cohesiveness. With 13 million B/D of readily producible OPEC oil overhanging the market, some members may not be able to resist the temptation to sell more oil by offering hidden or open discounts to their customers. Once this process spreads it would rapidly undermine OPEC's floor price defense and cause prices to tumble, at least temporarily, since the actual production cost of most OPEC oil is only a fraction of its sales price. The potential for a price decline in the absence of any enforceable restrictions is therefore enormous.

Consequently, if OPEC is to continue to maintain a price level substantially in excess of its members' actual production cost, it will have to remain at or very near the present price (in real terms) of its marker crude throughout this period and the prices of all other OPEC crudes will have to fall in line with the marker crude.

Probably OPEC's long term survival as an effective price setting organization will depend on its ability to maintain its crude output between 22 million and 28 million B/D. If production drops below the lower level of this band for more than a year, the organization's price cohesion, which is its raison d' etre, is likely to be doomed for the reasons discussed above. This would be particularly true after the cessation of Iran-Iraqi hostilities and the consequent significant increase in OPEC's exportable supply. In fact, had there been no such hostilities in 1981, OPEC's price cohesion would already have been far more severely tested than it was. The organization's survival under these conditions may well have depended on Saudi Arabia's willingness to take a production cut of 2.5-3.0 million B/D. This points up Saudi Arabia's dominant position as a price setter in OPEC whenever the group's collective production approaches the 22 million B/D level.

At the upper end of the band--28 million B/D of crude--OPEC's remaining effective spare capacity would be quite small. Hence, market forces would be likely to provide encouragement for OPEC to raise its real prices once again at a rapid rate. Perhaps up to a demand level of 29 million B/D of crude, the upward pressure on prices could be mitigated by an increase in Saudi Arabian production, provided the country is inclined to mitigate such a development. If requirements for OPEC oil should exceed 29 million B/D for an extended period, a substantial increase in the real price of OPEC oil is probably inevitable, even in the face of

active Saudi Arabian opposition. As was pointed out before, in the short run, such a price increase would of course benefit OPEC. In the longer run it would accelerate the trend away from imported oil and thereby hurt OPEC's interests.

I have limited my discussion so far largely to the impact on OPEC from changes in OECD oil import requirements. In 1979 80% of OPEC's exports went to OECD countries. Most of the balance went to less developed countries (LDS's). In addition, OPEC members last year domestically consumed about 2.8 million B/D, or 10% their total output. Both of these--the LDC's and the domestic OPEC economies--are growth markets.

In fact, officials of some OPEC countries have in the past repeatedly warned their industrial customers that within a decade or so a large portion of the oil produced in these countries may no longer be available for export since it will be required domestically. While this would not be good news for OECD importers, it would be far worse news for the oil exporters which would have given up a hard currency foreign market at world prices for a soft currency domestic market at far lower local prices. A few OPEC members may have enough oil reserves to meet the requirements of both markets. Most oil exporters, however, will sooner or later be forced to curtail the growth rate in domestic oil consumption in order to protect their foreign exchange earnings. Thus, growth in domestic oil demand can hardly be considered an offset to a decline in exports to the OECD countries.

The growth in the import requirements of the LDC's presents a somewhat similar problem. These countries are already spending 40% of their total export earnings for oil imports. If the real price of oil continues to increase, their ability to import this commodity will decline, regardless of their underlying need for it. To maintain their LDC market outlets in the face of rising real prices, oil exporters would have to subsidize these sales through lower prices or preferential financing. To some extent this is already done. It is desirable from the point of view of recycling OPEC's current account surplus--as long as there is one. But, again, it is not a substitute for the decline in exports into OPEC's prime hard currency market, the OECD area.

The argument made in this paper that the longer run negative effect on OPEC members of any further significant real price increase would more than offset the short term benefits to them is sometimes countered with the thesis that OPEC is collectively in a position to control world oil prices in both directions. Since the present price of OPEC oil is a high multiple of its actual production cost and will continue to remain so, it is argued that OPEC and certain other oil exporters can always protect their foreign markets simply by reducing their profit margins, if this should become necessary. This must be recognized as a valid argument. Certainly, the production cost of most OPEC exports is way below that of the new conventional and unconventional energy supplies developed to displace these exports.

However, the argument ignores the irreversible institutional changes brought about by OPEC's pricing policy. Substitution and conservation of oil is one such change. Since this is largely a function of changes in equipment design, substitution and conservation will continue relatively unaffected in the short to medium term by future price moderation. Another institutional factor is likely to be government protection of high-cost domestic energy production from low-cost foreign competition. There are plenty of precedents for this,such as the U.S. oil import policy from 1957 to 1973, whose philosophic basis was the assumption that dependence on foreign oil presented a potential national security threat, independent of price, in view of the demonstrated insecurity of access to foreign oil.

Still another institutional factor is the changes in life style and value judgments brought about by the rise in energy costs. These changes may consist of a higher consideration than before of the transportation cost aspect of residential or industrial location and relocation or they may take the form of a gradual move from energy intensive to non-energy intensive leisure and other personal activities. Once such changes are made they tend to become divorced from their original cause (the rise in oil prices) and, hence, are not readily reversible if and when the original cause ceases to exist.

Since the above factors are most applicable to the industrial countries, institutional forces can be expected to play an important part in the long-run irreversible reduction in oil import

requirements in these countries if real oil prices should continue to rise significantly.

We don't know of course what pricing policy OPEC members will adopt, collectively or individually, for the remainder of the 1980's in the face of these developments. Their governments cannot be faulted for doubting the predictions of foreign oil companies. In the 1960's when the price of oil was consistently below $2/Bbl they had predicted that the resource base would be adequate to meet a sustained, substantial demand growth well into the next century at approximately the then existing price level. In the 1970's when the price had soared to a multiple of its previous level the predictions were that oil was getting increasingly scarce and that the world would have to reduce its consumption over the remainder of this century in order to avoid astronomic further price increases brought on by economic and physical resource limitations.

OPEC, collectively and individually, is now increasingly making its own assessments of the future world oil market. These findings are not very different from those currently put out in the oil consuming countries. But they represent radical changes from OPEC's privately and publicly stated views prior to 1981. Thus, OPEC's most prominent spokesman, Saudi Arabian oil minister, Sheikh Ahmed Zaki Yamani, said in January 1981 in a widely publicized lecture in Dhahran:

> "if we force Western countries to invest heavily in finding alternative sources of energy, they will. This would take no more than seven to ten years and would result in reducing dependence on oil as a source of energy to a point which will jeopardize Saudi Arabia's interests"