

THE CLUMSY CARTEL

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The price explosions in the world oil market result from the tardy recognition of the post-1973 consumption slowdown. Such odd results could not happen in a competitive market, but they are not at all strange in the world of the cartel.

An analogy may help explain. A diver in the sea cannot go lower than the sea floor, nor higher than the water's surface. In between, he is nearly weightless and can stay at rest at any depth. But a slight impact or effort sends him up or down. Similarly, in any market, the price cannot go below incremental cost, for that would choke off supply. It cannot go above the level that would maximize profit to a monopoly, for the monopoly would gain by putting the price back down. But in a once-competitive market, where the price has been rising toward some unknown monopoly optimum, the price can stay put or move strongly up or down in response to even small impulses, let alone strong ones. In this range, the price may respond not at all to changes in demand, or even perversely. It has been perverse since 1973, especially in 1974, as the world headed into recession--and again in 1979.

During 1973-78, in the OECD countries, real incomes rose 13 percent, but oil use was flat. Exports by the OPEC nations actually fell, about 7 percent. These nations have, with some strain, carried a large actual excess capacity, and a huge potential excess; Saudi Arabia operates only 15 fields out of 37 known.

Despite the declining demand on OPEC, they have raised the price toward the optimal. The best approximation to a world price is producing government take on

Saudi Arab Light. From \$7 a barrel on December 31, 1973, it went to nearly \$11 by end-1974, and will have gone to somewhere over \$18 by the end of 1979. In real terms, the increase is much less, of course, and it has not gone smoothly. The unforeseen dollar devaluation put the real price down, to an unintended degree, which is now being made up.

The stagnant demand could for a time be viewed as only an interlude. As recently as two years ago, the consensus view (taking the CIA report as the prime example) was that non-Communist consumption in 1985 would be over 70 million barrels daily, demand on OPEC would be 49 million. These are now seen as massive over-estimates. The Saudi Arab cutback in expansion plans is a direct result. But the cartel has grown more clumsy these last few years. Formerly, they set the price, and left allocation of output to the oil companies. The companies translated their expected sales of products into a mix of crude liftings from various countries. Surpluses and deficits were small and soon corrected. Today the main producing countries have begun to set production themselves. But their prior decisions cannot, except by chance, equal consumer demand even in total, still less by types and locations. Discrepancies are larger, and not soon correctable; they trigger speculation, which exaggerates the resulting price movements.

Late last year, the cartel was ponderously working out a higher price level, when the Iranian revolution gave them an opportunity and a problem. In nine months, they have still not been able to accomplish a stable higher price level, and a supply-demand balance. However the dust settles, in later years there will be more disturbances, local shortages (and surpluses), speculative run-ups, political and monetary fall-out. That is normal in the New International Economic Order prevailing in oil since 1970, and especially since 1973. Those who think it can be cured by consuming less, or producing more elsewhere, have not bothered to look at the market.

## I

Let us look first at oil consumption prospects. The growth in world income will not approach the five percent per year of pre-1973. The most important single reason is that much or most of the catching-up with the U.S., in Europe and elsewhere in the developed world, has been done. There are other non-recurring factors, like labor force transfer out of rural under-employment into productive work. Population growth has slowed down. Hence if all went smoothly, we should expect a convergence toward the U.S. long-run rate of increase of around 3 percent. But things will not go smoothly. The disruption of the world monetary financial system, and the instability of currencies, was at least aggravated by the enormous OPEC surpluses. These dwindled in 1975-1978, but big surpluses are coming back with the price increases. Consuming countries may over-react with deflation of income to offset balance-of-payment problems. It is all the more likely because they are plagued with inflation, and the choice has been to cool down the economy and risk a recession to restrain prices. Hence OECD, looking at the 3.5 percent GNP increase for the year 1978, expects a decline in the growth rate through 1979.

Had there been no energy price increases, energy use would track income faithfully. Some work done at the M.I.T. World Oil Project suggests that price elasticities are quite high in the very long run, but work very slowly. And this seems to be confirmed by the fact that energy use, per unit of income, has slowly but persistently decreased.<sup>1/</sup>

Among the seven largest OECD members, the median decline has been a bit over 1.5 percent per year. I think it would continue declining slowly for years, even

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<sup>1/</sup>I refer to the average energy-income relation, not the "incremental energy-income coefficient," a confused unhelpful notion. See my "Energy-Income Coefficients, Their Use and Abuse," Working Paper Number MIT-EL 79-024WP, May 1979.

with no further increases in price, as the stock of energy-using equipment gradually was replaced. But with fresh crude oil price increases, there are new waves of response. Furthermore, consumer-country governments will (mostly for balance-of-payments reasons) discourage consumption, through taxes or automobile performance requirements. In effect, we levy a heavy tax on driving, acceptable because it doesn't look like a tax. The incidence and results of all these restrictions are, I think, quite unpredictable, but not their direction,

All in all, if incomes grow by about 3 percent per year, energy growth will probably be less than 2 percent. If we are going into recession, the next five years may be as flat as the last five.

The oil share of energy will probably not decrease much in the next decade. The future of nuclear power is clouded. Coal will displace some oil, gas even more, but the extent is limited.

## II

Worldwide, supply elasticity does not greatly differ from zero. In some countries, higher prices do elicit greater supply: an orthodox forward-sloping supply curve. Other countries, the richer they get, the more easy for them to be good cartelists and restrain output. The more they change, the less they produce: a backward-bending curve. In still other countries, both forward- and backward-bending curves are at work.

First, the small but rational part, Communist net exports. They grew from 1 to 1.5 MBD and will probably be higher by the mid-1980's, as the Chinese industry keeps growing and the Soviet Union scrambles to produce or conserve oil to export for scarce foreign resources. Comparative advantage will matter more than "need." Soviet gas growth will at least offset any oil decrease. But in the world picture, Communist exports will remain very small.

In the non-OPEC non-Communist world the big new factor is Mexico. The recoverable contents of known fields are now so large that the constraint is in how fast one can and will develop. By 1985, Mexico probably could produce 4.5 million barrels daily and half as much gas equivalent. I do not know what they will do. Four years ago their goal was self-sufficiency. Two years ago it was full speed ahead. The current plan is to go from 1.5 up to 2.5 million and pause. The current President leaves office in 1982, and cannot bind his successor. If the Government of Mexico has enough confidence in its ability to cope with large revenue flows, production will go higher. Comparisons with Iran are not appropriate, because Mexican oil and gas revenues are so much smaller a part of the national product.

The United States Government has prevented natural gas sales and avowedly fears that too-rapid growth of Mexican imports would "disrupt our carefully

nurtured relationships with the Middle East" (The New York Times, November 30, 1978). These relationships are carefully left unexplained.

Elsewhere, I can discern no big pleasant or unpleasant surprises. World-wide, the soaring price has not brought about any surge in drilling. Since contracts were used for bonfires in 1973, risk in many countries is great. If an oil operator loses money, the loss is his; if he makes a good discovery, a dissatisfied landlord rewrites the deal. The World Bank financing of oil and gas development in LDCs may be quite a help to some poor nations--one hopes so--but no more.

In the U.S., high prices mean windfall profits. Half the profits would normally go to the government as income tax. But the American public and government prefer to give up their half if only they can deprive the detested oilman of his half. Other nations have their own version of this rule. Thus the higher price has a political effect which depresses oil exploration and development.

In all countries, oil is thought to have an intrinsic value. The higher the price, the more are people convinced that its real value is even higher than the price. It logically follows that the seller is always conferring a benefit on the buyer. Why do the undeserving foreigner a favor? So the U.S. thinks Alaskan oil is too good for the Japanese; many in Canada and Mexico think their oil and gas are too good for the Americans; many in Britain think it too good for the Continentals and so on and on. The net result: high prices discourage some oil development in the U.S., Canada, and elsewhere. Again, the backward-bending curve. These are price-taker nations, and their actions are an important help to the OPEC nations.



## III

We turn now to the OPEC nations, joined in a loose but effective federation. I hear there is no cartel, because supply-demand, "market forces," explain the current price increase. How true: "As agreed at the last OPEC meeting in Geneva, they have trimmed supply in line with the partial restoration of Iranian production. Object of the cutbacks is to keep the market tight and let the pricing initiative remain with OPEC members." (Oil & Gas Journal, May 21, 1979). That sounds like a potent market force. But hear someone in high office at the Department of Energy: "The planet Earth is producing less oil than the people on it want." Thus the scarcity is due to nature; which is to say, the market is competitive. You can believe that if you like. Sometimes the point is made more explicitly: The OPEC nations are really not accomplishing anything. They "administer" the price and in a tight market an "administered price" rises more slowly.

I complained many years ago that "administered prices" was a catchy phrase signifying nothing. But the devil sees deeper. As Mephistopheles advised the hopeful student, when you have no idea you most need a word. The cartel's price administration allegedly slows an upward price movement "when the market is tight." But who is making the market tight?

There is also a revival or repetition of OGMB (oil in the ground is worth more than money in the bank). In Saudi Arabia today, the production ceiling of 8.5 MBD means that a barrel not lifted today is postponed for 50 to 100 years. During the middle 1960's, the last period of price stability, a riskless interest rate was about 3 percent. At the same time, in some of my own work, I observed a necessary return on oil development in the United States, with no political risk, at about 9 percent; private oil development in the Middle East and elsewhere at 20 percent. Considering the technological, economic, political, and

military risks confronting the Saud Family, as they did the Pahlavi Family, 10 percent seems conservative. A barrel of oil fetching \$12.50 in 1978 would need to fetch \$1350 to be worth holding in the ground for 50 years. OGMB is no constraint on any independent action. Saudi Arabia must restrain output to maintain the price.

Also, the heads of state have been fuming over the high spot prices which allegedly give ideas to the producing nations--the very ones who made the market tight, and forced spot prices skyward. This preoccupation with trivia speaks for itself.

Anyway, there is an orthodox view which underlies policy to this and all other consuming countries. The OPEC nations are supposedly willing to produce up to some maximum amount of oil. If we the consumers stay inside that limit--happiness, "enough oil for our needs," stable or maybe even declining real prices. If we cannot restrain ourselves, disaster. At best, prices will rocket. Worse yet, a dangerous struggle for scarce resources, as nation elbowed nation for the dwindling supply. Now, if oil is allocated by price, however "unfairly," there is no energy gap, no struggle, no problem of "access." But for reasons never revealed, the price is not expected to allocate, even though all logic and experience tell us it has and does and will. Europeans and Japanese are frightened and envious of supposed U.S. "access" and our "special relationships" with producing nations. One would suppose that the experience of the 1973-1974 so-called "embargo," when we were the special enemy and yet did better than Britain and France, the special friends, though not as well as "odiously neutral" Japan, would have taught people a lesson.

Anyway, the idea that there is some fixed limit of output, to which consumers must adapt, turns reality on its head. The cartel core nations do not control the net demand upon them. They do control supply. They react to changes in demand by changing production. But the adaptation is not automatic or smooth. Recently the

mechanism has been wound too tight, for anybody's good. There are two reasons: the diminishing role of the multinational oil companies, and the unexpected shocks to supply.



## IV

Previously the cartel could avoid most of the hard decisions on output, in total and by type and location, by leaving it to the oil companies. But as indicated at the start, this buffer is disappearing. The oil companies are gradually becoming buyers for their own refining operations. The producing countries are becoming sellers, with the usual problems. For years they have struggled and in vain lavished money and computer time over price differentials which are a very small, almost negligible, fraction of the price. Trouble is, even a small difference in net value of one crude relative to another will tempt buyers to the better offer, and deprive other countries of sales. With supply and demand constantly changing, buyers constantly have an incentive to change suppliers. The amounts involved are typically small, but sellers are alarmed by the prospect of price erosion starting at the fringes. This is normal cartel behavior.

Nigeria, early in 1977, thought it had a deal with Libya and Algeria to hold the line on the quality and location premium for their light low-sulfur crudes. By mid-1978, the Nigerians had learned, the hard way, that ancient formula of cartel behavior: When you have a friend, tried and true, do him quick before he does you. Nigeria lost nearly a third of its revenues, and was forced to borrow heavily.

The allocation problem was then raised by the loss of production from Iran, briefly 10 percent, but usually 3 to 4. Many or most industries work with more slack than that. The airlines have had five times as big a problem with the loss of the DC-10, and have handled it without fuss. The loss of oil could quite easily have been made up by expansion in other countries. But Abu Dhabi and Kuwait told us in November there would be no output expansion--we should go use up our stockpiles. (Others have said the same--here is a sensitive point.)

Saudi Arabia increased, not as much as they could. The price was raised in December. But then history began to repeat itself.

The Saudis, after the 1973 price hike, had been the price leaders upward in 1974 through the pretext of "participation." In 1979, after the 1978 price hike, they were the price leaders upward by the pretext of borrowing fourth quarter output. But they wanted more. Therefore, late in January, with Iran down, Saudi Arabia cut output from 10.5 to 8 MBD overnight, touching off an immediate explosion in spot prices, and soon in contract prices. In February, Saudi output was partly restored, to 9.5, and in March back down to 8.5. At the end of March came the wrangle in Geneva over who should move over how much. While we shiver over wells drying up, these people repress the surplus.

In mid-April, Iran's output was up to an unexpectedly high 4.7 MBD, prompting Saudi Arabia to promulgate a lower ceiling of 8.5 MBD for the second quarter. But then Iran apparently receded to about 4 MBD. So spot prices again jumped in early May. By end-June, they had stabilized at record high levels. At the OPEC meeting, Saudi Arabia announced the market crude at \$18, up percent in six months. Two weeks later, they agreed to allow another million b/d, which means that they are content with \$18--for the time being.

Nobody can tell what to expect in Iran. With 7 MBD of capacity, Iran had been a good enough cartel partner to hold output to 5.5 million or even less. We are now told they will produce only 3.5 million. I expect that a government with effective control of southern Iran will aim at higher production. Oil revenues have been nearly half of the gross domestic product. The country badly needs imported food, raw materials, industrial goods, and parts. Urban unemployment is widespread, and dangerous. There are many claimants for assistance and subsistence. Hence the target will, I think, go well above 3.5 million. But the expulsion of skilled foreign personnel means that Iran cannot go back to its old production levels.

Hence our best single-valued estimate might be for only 3.5 MBD, in some such fashion as:

(1) <u>Output (MBD)</u>	(2) <u>Probability</u>	(3) <u>(1) x (2)</u>
0	.20	0.0
3.5	.33	1.2
<u>5.0</u>	<u>.47</u>	<u>2.3</u>
--	1.00	3.5

Thus Iranian output will probably be down, perhaps by 1-2 MBD, as compared with early 1978. But this is partly balanced by developments in neighboring Iraq. Capacity is now perceived there as 4 MBD, a million MB higher than a year ago. It is not all deliverable capacity, but soon will be. On balance the long-run impact of the Iranian revolution will be favorable to the cartel, but hardly decisive.

We must put aside the ceilings and projections so popular in this town, which forecast OPEC capacity and output as if it were an independent variable. The OPEC nations will install such capacity, and operate such fractions of it, as suits their interests. With more or less demanded, they will produce more or less--at their price. They can't predict it any better than we.

The economic motive for Saudi output restriction reinforces the political: The more their revenues and wealth, the greater their political clout. Hear the U.S. Embassy in Jiddah: If we would accede to Saudi Arab wishes "they would give us all the oil we need and at good prices." (Business Week, April 9, 1979). Maybe they would, for as long as six months--it's possible. Saudi Arabia has repeatedly broken agreements--not because they are bad people but because you cannot compel a sovereign monopolist to keep his word. But the Saudis know the Americans are amenable to this kind of pressure, and will therefore keep pressing.





## V

The basic problem is simple; and simple problems are the hardest to solve. The Saudis and neighbors and others are fine-tuning a cartel with coarse instruments. Current consumption is poorly measured by the available statistics. Even the production numbers are getting shaky. Supply has to be kept tight despite panic, hoarding, and spot price gyrations, because the controllers fear to lose control. They can handle the large excess of capacity. They want to avoid the much smaller but dangerous surplus of actual supply, perhaps 2 MBD a year ago, which keeps prices under pressure. That is why we must expect a continuing bumpy ride in the years ahead. When prices are raised, the OPEC nations are willing to make room for Saudi production. As their expenditures approach income and they run toward or into deficit, they become unwilling to do this and threaten to shove the whole burden on to the Saudis, who resolve the contradiction by raising the price again, to the benefit of themselves and others. Unexpected events like the Iranian revolution are opportunities to be seized, despite these dangers.

In the short run, the cartel is restrained by a desire not to damage world monetary and trading relations. If the price goes to \$18, for example, the surplus on current account will by late 1979 be running at \$60 billion annually.<sup>1/</sup> That is nominally nearly equal to 1974, a year of recession, but in real terms about a third less.

So long as the price remains below the long-run monopoly optimum, this process will go on, each incident unpredictable. The richer the producing nations, the more easily can they reduce output, and the less the incentive or compulsion

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<sup>1/</sup>Adapted from Rimmer de Vries, "Implications of the New Oil Situation," World Financial Markets (Morgan Guaranty Trust Co.), May 1979, table 4, assuming 27 MBD exports.

to expand output. So the situation will get better for them, worse for us.

Where the long run optimum monopoly price lies, I do not know. If the cartel is ever perceived as anywhere near it, there is real danger to them. Without much more room to raise prices to consumers, a valorem tariff on oil must become a deduction from the cartel revenues. The petro-dollar flow could, at the limit, be wholly diverted to consumer-country governments.<sup>1/</sup> These governments have no such intention--far from it! But even a small probability makes the crystal ball cloudy for the late 1980's.

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<sup>1/</sup>For a formal proof see: "Constraints on the World Monopoly Price," Resources & Energy, Vol. I (1978) 5-7, 17-18.