FRIEDBERG'S

COMMODITY & CURRENCY COMMENTS

Friedberg Commodity Management Inc. | Volume 6, No. 11 | November 17, 1985

Power play

As if by magic, the crude oil market has been defying the laws of supply and demand. Since the *announcement* of the Saudis' intention to increase output, spot quotes of North Sea Brent and West Texas Intermediate have climbed \$2¼ to \$3¼ per barrel, respectively. More recently, since the *onset of stepped-up Saudi output*, followed generally by other producers, these grades of crude have risen an incredible \$1½ to \$2/barrel, completing the longest running upside move in crude oil prices in the short history of recurring bear market rallies begun in the early '80s.

Even more puzzling, the rally had all the earmarks of *panic buying* — plus days represented an astounding two thirds of all trading days since the June lows. Is it possible that the world was running out of supplies when even as recently as this past August, Opec was unable to sell 14.3 million barrels per day (mb/d)? We hardly believe it. As we showed last month, worldwide *private* stocks equalled 73 days of forward consumption, which compares with estimated minimum operating stock requirements of 45 days. And while this level of stocks cannot be considered ample, it is also true that the widening backwardation was rationalizing inventories and making spot supplies as available as necessary (see last month's *Commodity & Currency Comments*).

What gives? Can 3 mb/d extra supplies, an almost 6% rise in world output, cause prices to *skyrocket*, let alone rise? Have we repealed the first law of economics? Why has the backwardation continued to widen (now at \$4.20/barrel for six months; see Chart 1) even while physical supplies have been forthcoming at a generous pace? The questions do not end here. Why does Saudi Oil Minister Sheikh Yamani sound so concerned about a collapse of oil prices, come this spring, as expressed in at least three public statements over the past few weeks? Haven't prices risen sufficiently for him to feel relatively safe?

The astute reader will by now begin to feel some of the same suspicions we have harbored for the past few weeks. He needs one more piece of information before the picture is complete. There is an active forward market in North Sea Brent crude, primarily for delivering in 30 and 60 days — that is, the nearest two months. This informal market has a daisy chain of as much as 40 or 50 rotations before settlement is affected.

Alongside the NYMEX, the North Sea Brent forward market has become the speculative arena for crude gladiators. It differs from NYMEX in that it has no clearing house — and consequently no cash settlements at the end of each day — no position limits, a very high degree of anonymity, and due to its geography, it can most probably be settled only by the Brent variety of crude oil produced in the North Sea. By necessity, the players are big boys, as each minimum trading unit equals one cargo, which in turn equals between 500,000 and 600,000 barrels of oil, the equivalent of *500-600 contracts* on the NYMEX.

In normal days the market would trade 3, 4, 5 and up to 10 cargoes, which, of course, represents anywhere between 1.8 million barrels and six million barrels of Brent — in contrast to a total North Sea average output of 2.4 million barrels and a recent record of 2.65 million barrels per day. So far, so good. In recent days, *reported* transactions reached a mind-boggling total of 40 cargoes, representing as much as *24 million barrels.* Close observers of the market have detected a great deal of short-covering, with prices between cargoes jumping as much as 50¢ per barrel.

The enormous quantity of Brent cargoes trading on a daily basis coupled with the frenzied pattern of trading and anecdotal evidence that the shorts are "throwing in the towel" point to the possibility of a gigantic short squeeze, or power play, engineered by some well-do-do speculators — more likely (and, of course, we have no evidence nor are we even accusing anyone of foul play) the Saudis, through Norbec, and some of the Seven Sisters who have recently gone to bed with the Saudis in netback arrangements.

In this issue

Opec is unravelling, so we continue our bearish position in crude oil. The stock market has to face reality soon, and we retain puts on S&P 500. Mexico becomes a basket case, so we pack our bags and leave, taking what we can. Contributions by Albert D. Friedberg, Steve H. Hanke, and Daniel A. Gordon.

A suspicion, bordering on the paranoic, would point to the early September Saudi announcement as the time that logical minds would have bet crude prices were finally about to collapse. Aware of this danger, the manipulators(???) allowed the bears to sell forward dates, primarily October and November deliveries, while they took the opposite side of the trade. The bears had been trapped.

Not long ago, the Tin Buffer Manager on behalf the ITC initiated and completed two very similar bear traps that, were it not for the LME intervention, would have bankrupted a number of logical and sophisticated bears. Chart 2 defies the first law of economics: Tin prices rise sharply as consumption stagnates and worldwide supplies increase. At points A and C, confident bears press their shorts against a manager still armed with cash and nerve. At points B and D the bears are mercilessly squeezed to the point that the LME caps one-day tin borrowing costs at 90£/ton, a 300% per annum cost. The Buffer Manager has some fun, but the basic laws of supply and demand survive: In the end, he is forced to accept more tin than he can handle, and on October 24 — a mere two-and-a-half months later, he announces that he has run out of money.

A very powerful trader can inflict heavy punishment on his counterpart, but he must be prepared to have a bottomless pocket. This is so because a) the absolute rise in prices cuts down consumption even further while it encourages increased output and b) the squeeze widens the backwardation, which, as we saw last week, increases the availability of spot supplies. This means that the manipulators (??) *were not able to increase their net sales*, as they have been forced to accept tenders. It is now also clear why Sheikh Yamani continues to jawbone Opec and non-Opec producers on the need for self-restraint. He has still not been able to increase net sales and requires further accommodation.

If, as is likely, Norbec had a hand in the power play, Saudi Arabia's overall financial position must have weakened further. They may have increased sales of Arab light by 2 mb/d, but they probably have been forced to buy back more than 2 mb/d of Brent and/or WTI. The speculative profit of $2-$4/barrel on even 100 million barrels cannot compensate them for their revenue loss of 2 mb/d for 60 days at $28/barrel.

As Professor Hanke's article, which follows, demonstrates, the Saudis' profit-maximizing strategy lies in lower prices and full production. While this most recent bull run has bloodied many a bear, it is probably Yamani's last attempt at holding prices.

The unravelling of Opec: crude calculations

Steve H. Hanke

Lead articles in the May, June, September, and October 1985 issues of *Commodity & Currency Comments* have addressed the fundamentals of the crude oil market. This piece is a continuation of our analyses and insights into the mysteries of the market for crude.

Excess capacity eventually becomes the Achilles' heel of any cartel. To establish a cartel price, a cartel must constrain its members' output. Once established, a cartel price induces capacity and output expansion by outsiders. In an attempt to counteract the increased production by interlopers and maintain its high price, a cartel must further cut its overall output. In consequence, excess capacity is generated within a cartel. This excess capacity, coupled with a cartel price, induces individual cartel members to violate their agreements and increase production to levels that exceed assigned quotas. To the extent that members violate their cartel agreements, they are handsomely rewarded because increased output is produced at a relatively low marginal cost and sold at a price close to, but slightly under, the official price. Eventually, cartels come unravelled because members can't resist producing with their excess capacity.

Opec, not unlike other cartels, is following the textbook script. In 1973, when the Opec cartel price began to diverge sharply from a free market price, production by non-Opec producers averaged 24.8 million barrels per day (mb/d). Induced by high Opec prices, non-Opec producers — led by increased production in China, Mexico, Norway, United Kingdom, and the USSR — increased output to an average of 36.6 mb/d in 1984. In an attempt to keep prices artificially high, Opec has slashed its average annual output from a peak of 31.3 mb/d in 1977 to 17.2 mb/d in 1984. In consequence, Opec's oil revenues have fallen sharply, and its excess capacity has risen to about 12 mb/d. Moreover, in an attempt to raise much needed oil revenues, Opec members have begun to increase their output and to market it at discounts from official prices. Although Opec has not yet unravelled, the day is nearing when it will. And when this inevitably occurs, the question is: How will crude oil prices respond to increased Opec production?

To shed light on this question, we offer some back-of-the-envelope calculations (see Chart 3). Our purpose is to determine the oil prices required to clear the market at alternative world oil output levels. Output levels are displayed in the first column of Chart 3. These begin at the current world output level, 55 mb/d, and increase by 1 mb/d increments until 65 mb/d is reached. The 65 mb/d level is the terminal output level for which we make calculations because we assume that when Opec unravels, its excess capacity, 12 mb/d, would be thrown onto the market and that non-Opec production would be reduced by 2 mb/d. The reduction in non-Opec production would occur because some marginal non-Opec production would be discontinued at the lower prices that would accompany Opec's full production. Hence, it is assumed that a collapse of Opec would result in a net addition to output, over current world production, of 10 mb/d.

The market-clearing prices that would accompany alternative output levels are found in the second, third, and fourth columns of Chart 3. These prices are calculated for realistic demand elasticity alternatives. With the most inelastic alternative (e = 0.1), demand is very unresponsive to price changes. In consequence, to clear the market, prices must decline rapidly, as output is increased. If demand is assumed to be more responsive to price changes (e = 0.2 or e = 0.3), then, to clear the market, prices do not have to decline as rapidly.

If all factors that determine market-clearing prices remain unchanged and world oil output is increased from 55 mb/d to 65 mb/d, the market-clearing prices are calculated to decline from $28.60/b to $5.38/b (81% decline), $12.41/b (57% decline), or $16.39/b (43% decline). Which of these prices is most realistic depends on which demand elasticity is assumed to best represent the real situation.

The obvious conclusion from our analysis, regardless of the demand elasticity chosen, is that the unravelling of Opec will bring with it sharply lower oil prices.

The consequences of Opec's collapse on producing countries' oil revenues are not so obvious. Non-Opec producers are already producing at capacity, and would not be able to increase production to compensate for lower prices. In fact, as was mentioned earlier, their production would actually be somewhat lower at lower prices. In consequence, non-Opec producers' oil revenues would be lower at world output of 65 mb/d than at 55 mb/d.

Turning to the members of Opec: Some would generate more and some less oil revenues if Opec collapsed and world production rose to 65 mb/d. The winners, in a narrow oil revenue sense, would be those members with the largest proportion of excess capacity: Kuwait, Libya, Qatar, Saudi Arabia, and the United Arab Emirates. Each of these producers would increase their production by more than enough to compensate for lower prices. For example, even if the most inelastic demand prevailed and prices fell to $5.38/b (81% decline), each of these producers would increase their production by more than 81%. Hence, each would realize gains in their oil revenues. For all other members of Opec, oil revenues would decline because they would not be able to increase production by enough to compensate for the price declines, regardless of the demand elasticity assumed.

STRATEGY: *Our analysis strongly supports a continued bearish position on crude oil. It should be pointed out that the very deferred contracts have risen a great deal less than the spot months (see Chart 4), a result of the widening backwardation. This strategy, as well as the continued purchase of puts, should be continued.*

We also remain bearish on the Saudi Arabian riyal. If Opec continues to unravel slowly, Saudi Arabia would at best be able to increase its oil revenues only modestly. These revenues would not be enough to rescue Saudi Arabia from a deteriorating fiscal situation. Alternatively, if Opec unravels rapidly, the Saudi Arabian oil revenues would actually increase. However, the political stability of the Persian Gulf would become more unsettled, and this would put significant downward pressure on the Saudi Arabian riyal.

Chart 1

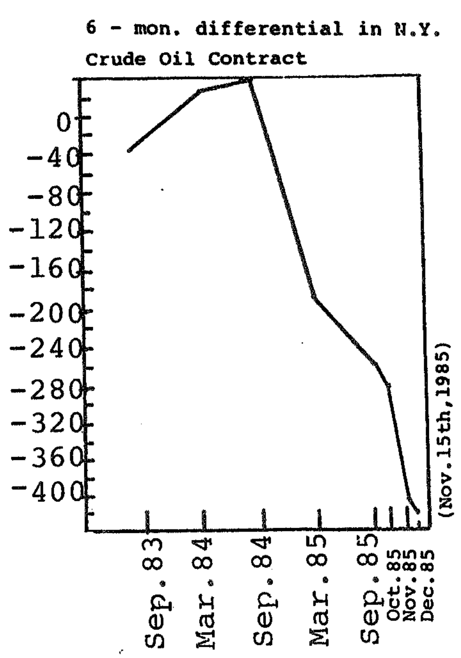


Chart 2

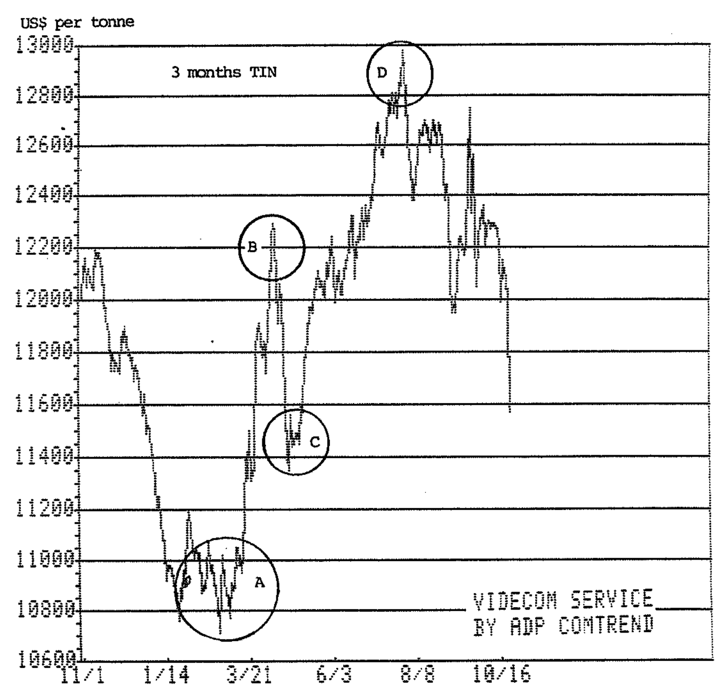


Chart 3

World Crude Production (million barrels/day)	Prices ($/barrel) Demand Elasticity (e = 0.1)	Demand Elasticity (e = 0.2)	Demand Elasticity (e = 0.3)
55*	$28.60*	$28.60*	$28.60*
56	23.88	26.14	26.93
57	20.01	23.92	25.39
58	16.82	21.93	23.96
59	14.17	20.13	22.63
60	11.98	18.51	21.40
61	10.16	17.04	20.25
62	8.63	15.71	19.18
63	7.36	14.50	18.19
64	6.28	13.41	17.26
65	5.38	12.41	16.39

Notes: (1) The * denotes either the current assumed level of world crude oil production or the current assumed crude oil price.

(2) The demand model employed is:

$Q = aP^{-e}$

where Q = production of crude oil in millions of barrels per day,
P = price of crude oil in U.S. dollars per barrel,

e = demand elasticity = $\frac{dQ}{dP} \times \frac{P}{Q}$, and

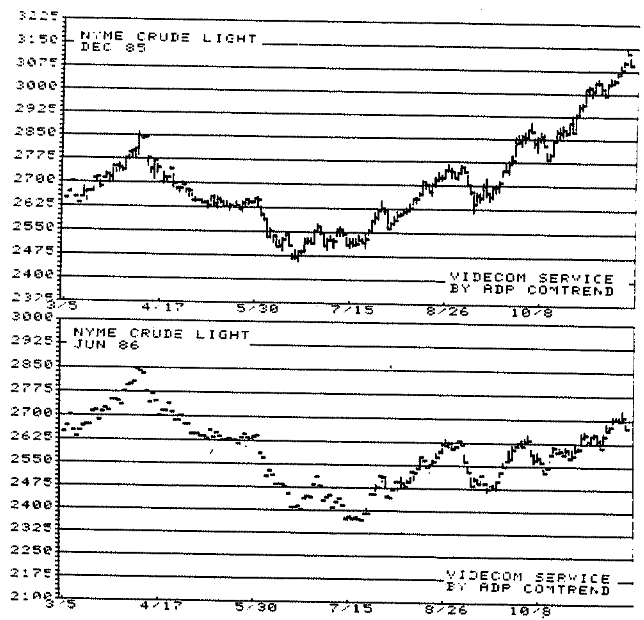
a = a constant = $\frac{55}{28.60^{-e}}$.

(3) In the table, we increase production and solve for price with alternative demand elasticity assumptions. This is accomplished by rearranging the demand model, so that:

$$P = \left(\frac{Q}{a}\right)^{-\frac{1}{e}}$$

(4) For information on demand elasticities, see: Paul W. MacAvoy, Crude Oil Prices: As Determined by OPEC and Market Fundamentals, Cambridge, MA: Ballinger Publishing Company, 1982.

Chart 4



Stock Indices

Market must face reality soon — stay put!

Deflationary pressures, increased debt service, and a flat economy have as yet not had a major impact on the stock market, or at least, the large capitalization segment of the stock market.

An early November *Wall Street Journal* survey shows that after-tax earnings on continuing operations of 501 major corporations dropped 7% from a year earlier. Industrial companies were particularly affected by price-cutting, a condition that seems likely to persist for quite some time if our Commodity Research Bureau Index is any guide.

It appears that easy credit and its direct effect of shrinking equity via leveraged buyouts and takeovers are a more powerful influence than the grim realities of corporate life. It can only change in one of three ways: 1) the Fed tightens, an unlikely possibility at least for now; 2) interest rates rise as a result of a weak dollar, a somewhat more plausible scenario; or 3) one or two major junk-bond issuers default, putting an end to junk-bond financed acquisitions, a very good possibility. Until then, the mania will feed on itself.

STRATEGY: *Stopped out on outright December '85 S&P 500 short positions at 192.00, as suggested last month. Retain puts.*

Chart 5

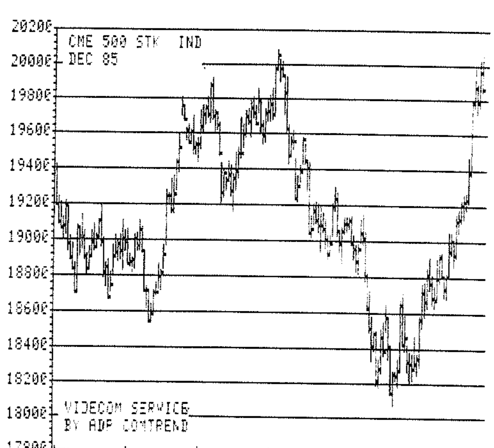


Chart 6

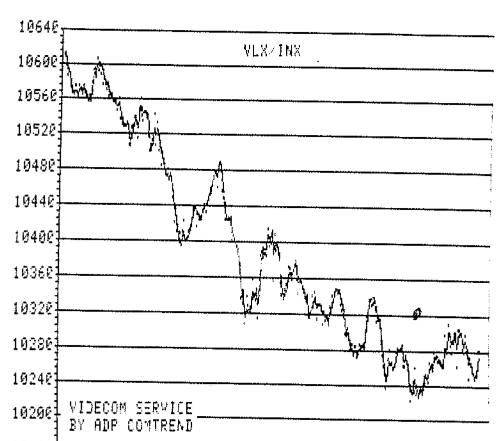
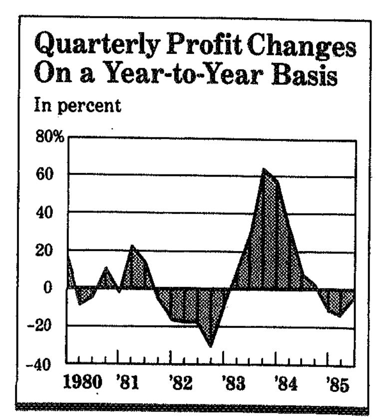


Chart 7



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