The Debacle at Metallgesellschaft

In January 1994 the German industrial giant Metallgesellschaft shocked investors with news of huge losses in its U.S. oil subsidiary, MGRM. These losses, later estimated at over $1 billion, brought the firm to the brink of bankruptcy and it was saved only by a $1.9 billion rescue package from 120 banks.

The previous year MGRM had embarked on what looked like a sure-fire way to make money. It offered its customers forward contracts on deliveries of gasoline, heating oil, and diesel fuel for up to 10 years. These price guarantees proved extremely popular. By September 1993, MGRM had sold forward over 150 million barrels of oil at prices that were $3 to $5 a barrel over the prevailing spot prices.

As long as oil prices did not rise appreciably, MGRM stood to make a handsome profit from its forward sales, but if oil prices did return to their level of earlier years the result would be a calamitous loss. MGRM therefore sought to avoid such an outcome by buying energy futures. Unfortunately, the long-term futures contracts that were needed to offset MGRM's price guarantees did not exist. MGRM's solution was to enter into what is known as a "stack-and-roll" hedge. In other words, it bought a stack of short-dated futures contracts and, as these were about to expire, it rolled them over into a fresh stack of short-dated contracts. MGRM was relaxed about the mismatch between the long-term maturity of its price guarantees and the much shorter maturity of its futures contracts. It could point to past history to justify its confidence, for in most years energy traders have placed a high value on owning the oil rather than having a promise of future delivery. In other words, the net convenience yield on oil has generally been positive. As long as that continued to be the case, then each time that MGRM rolled over its futures contracts, it would be selling its maturing contracts at a higher price than it would need to pay for the stack of new contracts. However, if the net convenience yield were to become negative, the maturing futures contracts would sell for *less* than more distant ones. Unfortunately, this is what occurred in 1993. In that year there was a glut of oil, the storage tanks were full, and nobody was prepared to pay extra to get his hands on oil. The result was that MGRM was forced to pay a premium to roll over each stack of maturing contracts.

The fall in oil prices had another unfortunate consequence for MGRM. Futures contracts are marked to market. This means that the investor settles up the profits and losses on each contract as they arise. Therefore, as oil prices continued to fall in 1993, MGRM incurred losses on its purchases

of oil futures. This resulted in huge margin calls.[1] The offsetting good news was that the fall in oil prices meant that its long-term forward contracts were looking increasingly profitable, but this profit was not money in the bank.

When Metallgesellschaft's board learned of these problems, it fired the chief executive and instructed the company to cease all hedging activities and to start negotiations with customers to cancel the long-term contracts. Almost immediately the fall in oil prices reversed. Within eight months the price had risen about 40%. If only MGRM had been able to hold on, it would have enjoyed a huge cash inflow.

Observers have continued to argue about the Metallgesellschaft debacle. Was the company's belief that the net convenience yield would remain positive a reasonable assumption or a gigantic speculation? How much did the company anticipate its cash needs and could it have financed them by borrowing on the strength of its long-term forward contracts? Did senior management mistake the margin calls for losses and just lose its nerve when it decided to liquidate the company's positions?

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[1] In addition to buying futures contracts, MGRM also bought short-term over-the-counter forward contracts and commodity swaps. As these matured, MGRM had to make good the loss on them, even though it did not receive the gains on the price guarantees.