

**AUTHOR'S NOTE**

Soon after it was established, the Commodity Futures Trading Commission appointed several study committees to hold hearings and recommend policies and regulations. I was asked to address the question of a definition of hedging. It was not simple. Out of the years of working with various commodity-related industries, I had become aware of the complexity of futures activities that different kinds engaged in. I tried to describe the complexity and the difficulty of drawing a line between hedging and speculation when, indeed, all commodity activities are more or less speculative. The conclusion was that hedging can best be described in very broad terms of risk reduction and that identification can best be made by exchanges.

## A DEFINITION OF HEDGING FOR ADMINISTRATIVE PURPOSES

### INTRODUCTION

### CHAPTER 36

In the preface to a book I wrote in 1971, I said, "If this book makes only one contribution, it is the thorough lousing up of a standard doctrine of hedging." I think that the CFTC is now in the process of substantially adding to the destruction of standard doctrine. Hopefully, there will flow from this an improved understanding of the use of futures markets in the management of commercial risks.

The definition of hedging in the context of the CFTC Act is extraordinarily difficult, if not impossible. The definition is for the purpose of granting exemption from limits on the size of speculative positions permitted in futures contracts. This assumes that "hedging" and "speculation" are at least different, if not opposite. They are not. All hedges are more or less speculative, and all speculative positions are more or less hedged. There is not a simple solution to the problem of establishing a process for granting exceptions from speculative position and trading limits.

I am tempted to cop out on the assignment by saying that the solution is to not impose any limits on speculation. It would not be much of a cop-out because it is what I truly think is the best solution. But such would not be of use to the Commission at this time.

### HEDGING

Hedging can and is defined in various ways, depending on the purpose. Three definitions seem appropriate: (1) to hedge is to assume a position in futures equal and opposite to an already existing or immediately anticipated cash position, (2) to hedge is to shift the risks of price level change while retaining the opportunity to speculate in changes in price relationships, and (3) to hedge is to use futures contracts in managing risk exposure associated with commodity ownership and commitment and with variable price relationships among commodities and related commodity products to levels consistent with profit maximization and/or profit regularization and with capital preservation and expansion. The first definition is

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descriptive of a process of risk aversion. The second is descriptive of a process of highly selective risk assumption. The third is descriptive of commercial uses of futures in a broad spectrum of activities in which capital and earnings are subject to risk exposure resulting from variation in commodity prices and price relationships. It opens the door to a long list of legitimate exemptions to speculative limits.

One thing is common to the three definitions: They all imply a reduction in risk exposure from levels that would otherwise exist or the maximization of profits from variations in cash commodity or commodity product prices or price relationships. The test, then, of whether a specific futures activity is a hedge is: Does it reduce risk exposure? Or does it contribute to an attempt to maximize profits from business activities associated with cash commodities? On the other hand, if an activity in futures contracts is designed to obtain earnings from price or price relationship changes in futures, it is speculation. Or, if it increases risk exposure, it is speculation.

#### **DEVELOPMENT OF EXEMPTIONS**

When the law providing for speculative limits was originally passed in 1936, the list of exemptions was quite short and was strictly equal and opposite in the same commodity, plus one year's production of a farmer. By 1968, it was expanded to include product hedging and the accumulation of up to one year's production requirement. The list has recently been further expanded to include wheat against prospective flour requirements, corn against prospective production of dry-milling products, corn against sales of seed and sweet corn, and product futures against raw material positions. We are now on a middle ground with the door open for a long list of equally valid cases for other exemptions. It would seem that there would be no stopping point so long as a trader had some cash commodity base for his operations.

In looking at the broad definition of hedging, it is clear that more kinds of futures activities should be added to the exemptions list. It also seems that some things are now included in the list that need not meet the criterion of risk reduction. As it now stands, there are opportunities for taking large positions that are not offset by cash commitments.

#### **SPECIFIC COMMENTS**

Several kinds of futures activities are under discussion regarding their classification as hedges. I will comment on some.

## GROSS HEDGING

I construe this term to mean the hedging of one cash commitment while not hedging an opposite cash commitment. An example is that of an exporter who is long 20 million bushels of cash corn and short 10 million cash corn, and who sells 20 million futures. He has added to his risk exposure in the amount of 10 million bushels. Half is a hedged position, and half a speculation. But this is true only so long as the cash corn positions are truly opposite. If one is of one crop year and the other a different one, they may or may not be opposite, depending on the relationship of old and new crop prices.

A more delicate question relates to the organization of the company. If it establishes separate profit centers by divisions, each with its own accountability, so that one entity is long 20 million cash and the other short 10 million, then the 20 million hedge may be truly risk reduction for the one division. How much the other speculates is its own affair (so long as the speculation is in cash rather than futures). It can well be said that such divisionalization is a subterfuge, but this is not necessarily true. A company may have soybean processing, flour milling, feed manufacturing, and merchandising divisions. It need not be expected that the soybean-processing division know and relate to the soybean meal positions and requirements of the feed-manufacturing division or the merchandising divisions, etc.

A company should have to prove up its special case for not netting cash against cash to determine the risk exposure to be hedged.

## PREHEDGING

The restricted definition of prehedging is the sale or purchase of futures in the anticipation of purchases or sales during the hours that the exchange is closed. This is a risk minimization process, hence hedging. A question arises about the size of expected overnight business. Expectations do not always materialize. Suppose an exporter intends to respond to an expected overnight tender that he expects to be 100,000 tons and for which he expects there will be five firms tendering. What is a reasonable prehedge?

How long a time span can a prehedge legitimately cover? The last ten minutes of the session? The last hour? Or a week? It depends on the size of the prehedge and the liquidity of the market.

## ANTICIPATORY HEDGING

By this is meant the purchase of futures against expected sales of products or the sale of futures against the expected requirement of raw material. Whether the purchase of futures against anticipated sales of the cash commodity or products from the cash commodity is risk reducing depends upon the relationship of buying

and selling prices. When raw material and product prices move up and down together, purchases without offsetting priced sales add to risk exposure and so are not hedges. But if product and raw material prices do not move together, anticipatory purchases may be risk-minimizing. Flour and wheat prices move together. Thus, wheat purchases in anticipation of eventual flour sales are not risk-reducing. But behavior within an industry is not uniform. Proprietary brands of margarine have quite sticky prices, so that advanced purchases of soybean oil to the amount of stickiness of prices are risk-minimizing. When to cover is a speculative decision that cannot be avoided. In this instance, the decision that now is the time to fix raw material cost is speculative, but it is also a hedge. On the other hand, prices of private label brands of margarine relate closely to soybean oil prices. To take forward cover is to speculate rather than hedge.

In the corn wet-milling industry, there is a saying, "If you are not long, you are short." Cornstarch prices are sticky and do not relate closely to corn prices in the short run. I once saw a calculation by a wet miller of his automatic short position; the size of the long corn position that he needed to minimize his risk exposure. It was three months corn requirement in a rising corn market and one month in a declining market. How large a position was a hedging one depended on whether the price of corn was going up or down.

The current exemption from speculative limits appears to permit the purchase of a full year's raw material requirement. I doubt that very many firms avail themselves of the opportunity. For virtually all commodity users, it would be the grossest kind of increased risk exposure. No meat packer in his right mind would buy enough cattle futures to cover a year's kill. The anticipatory hedging exemption needs to be tightened up.

#### PARTIAL HEDGING

Partial hedging is the use of futures to cover part of an existing cash position. I prefer the term *selective hedging*. One hedges when and to the extent that he elects not to speculate. Selective hedging is also selective speculation.

Partial hedging is a legitimate risk management practice. In some circumstances, to be partially hedged results in less risk exposure than being fully hedged. It also enables the hedger to reach a balancing point between risk avoidance and profit maximization.

A farmer is a good example in making the case for partial hedging. One construction of his least-risk program is to space sales at frequent intervals across the whole time spectrum of a crop season. If he does this, he takes the average price for the season. At the other extreme, he may attempt to maximize his return by attempting to select the single best time (highest price) to sell. By the same

construction, this is his highest risk policy. He usually makes a compromise. If he is short futures, it is usually in an amount less than his total production.

Partial hedgers can reasonably change the size of their futures positions. If the price offered by futures is a highly profitable one and there appears to be substantial risk of adverse price change, he may elect to be fully hedged. But if the price changes substantially so that it is unprofitable and there is little risk of further adversity, he may elect to remove all or part of his hedges. Trading in and out is a legitimate activity and should be permitted.

I know of no rule that requires hedging. A firm can speculate with cash commodity inventories or obligations to whatever extent that it elects. A soybean processor may carry a five-year inventory of crush if he wants to and can arrange the financing. But this election of hedging or not is fraught with problems in futures market regulation. Suppose that a soybean processor accumulates an inventory of six months' crush of soybeans. He thinks prices are low, so he does not hedge. Prices rise to what he judges to be dangerous levels, so he hedges. They decline, so he unhedges, etc. If he has a large enough commercial base, as many processors and exporters do, he can trade in and out of the futures market in large amounts at will. This activity is conceivably disruptive of prices, and there may well be this kind of trading operative in futures markets at the present time.

It would appear that the only way to prevent such disruptive activity with position and trading limits is to require that firms that are granted exemptions follow policies of being fully hedged or hedged to some fixed proportion of risk exposure. I doubt that this is an acceptable suggestion, but I do think that regulations regarding exemption from limits should recognize and cope with problems associated with partial or selective hedging.

#### CROSS HEDGING

The concept of cross hedging has not been brought into the exemptions list. It should be. To cross-hedge is to assume a position in futures opposite to an existing cash position in a different but price-related commodity. This may be done because there is no futures market in the commodity on which market risks are outstanding, or because existing futures markets are not sufficiently liquid, or because the use of futures in a different commodity is judged to be a better hedge than one in the same commodity.

In the matter of using futures in a different commodity, a good example is hedging soybean meal inventories by selling soybean and buying soybean oil futures. Price relationships are sometimes such that a soybean oil hedge involves less risk or greater profit opportunity than a direct meal hedge. It is equal and opposite and risk-reducing, hence a hedge.

There are not futures markets for many commodities. When a wheat miller buys wheat and books flour at firm prices, he is long millfeeds. Millfeed prices fluctuate, and there is not a futures market. Prices fluctuate in relation to other feed prices—such as corn, oats, and soybean meal—and risks can be hedged. By the same token, cottonseed oil can be reasonably hedged in soybean oil futures, corn gluten feed in a combination of corn and soybean meal futures, and pork inventories in live hog futures.

The problem in the matter of cross-hedging exemption from speculative limits is how far afield the hedger may be allowed to go. Some degree of covariation of prices is essential for a cross hedge to be legitimate. How close the relationship need be is related to the degree of risk. When prices of the commodity to be hedged are fairly stable, the covariation needs to be fairly close lest the operation be risk-increasing rather than risk-reducing. But when prices are highly volatile and risks of adverse price changes are great, covariation can be very much less—any old port in a storm.

Legitimate cross hedges go far afield. Bakery wastes are collected and processed into animal feeds. They are bought on long-term contracts—up to several years—at firm prices. The product is priced date-of-shipment on the basis of the current price of corn. The sale of corn futures is a nearly precise hedge. The hedging of bakery wastes in corn futures should be exempt from speculative limits.

Every position is a hedge against something. A long position in a commodity future is opposite a long position in money, just as the ownership of real estate is a hedge against a decrease in the value of money. And a short position in commodity futures is a hedge against an increase in the value of money. Some commodities, such as gold, are widely judged to be storehouses of value. If a holder of an inventory of money is apprehensive about inflation, he can trade it for gold in an attempt to preserve its value in real terms. But he may judge that gold has been already bid up to levels that make it a poor hedge for money, but that wheat is very cheap relative to gold. He thus hedges money in wheat. The record of the price of money in recent years lends legitimacy to cross-hedging of money and commodities.

Bonds can be hedged in silver spreads. Bond prices go down as interest rates go up, and vice versa. Silver spreads widen as interest rates increase. Thus, if one is long bonds and fears an increase in interest rates, he can buy distant and sell less distant silver futures as a hedge against his bond position. The gain from the silver spread should offset his bond loss if interest rates increase, and the gain in bonds offset his silver spread loss if interest rates decrease.

The point of all of this is that cross hedges are a bona fide hedging use of futures; but it is difficult to draw a line between what is and what is not a cross hedge,

and it appears virtually impossible to specifically list all exemptible cross hedges.

#### **LENGTH OF PRODUCER SALES**

The twelve-month production restriction (eighteen months for sugar) on sales by producers may be too restrictive. The marketing season for annually produced crops, such as corn and soybeans, extends from the time that resources are committed until the end of the crop storage season. For crops to be produced in 1976, the period is from late 1975 to late summer of 1977—the length of the trading span of December 1976 and July 1977—deliveries of corn. A farmer is always in the process of marketing two crops. It seems reasonable to extend the exemption to two years.

In a broader sense, it seems reasonable to permit producers to sell as far forward as they have committed resources. A man bought a piece of land in the fall of 1974 at a quite high price—a good investment only if the price of corn remained high. The land was heavily mortgaged. The price of December corn was \$3.50, an amount that, if it lasted through the duration of the mortgage, would make the investment profitable. The man sold enough corn to equal the value of the mortgage, guaranteeing his ability to repay. It was several years' potential corn production. A bona fide hedge? I think so.

#### **RAW MATERIAL AND PRODUCT SPREADS**

The soybean complex is unique in that there are active futures markets in a raw material and its products, and that raw material and product prices are closely related. Processors can sell cash products against cash soybean inventories, sell product futures against cash soybean inventories, sell cash products forward against soybean futures positions, and sell product futures against soybean futures positions. Soybean processors are in the business of selling the service of processing soybeans into meal and oil. They do this at a margin described by the difference between soybean and product prices. Margins are variable, and only rarely are they as wide as the cost of processing. These are highly developed and highly speculated markets. The objective of the processor is to sell his services at as wide an average margin as possible. The industry has had a history of operating below cost profitably. They do this with trading skill. It is skill in the timing of putting on and taking off the crush and skill in basis—cash to futures—operations. The whole operation is a remarkable tribute to the efficiencies forced by a fully competitive pricing system. Fully competitive is essentially synonymous with highly speculative.

If soybean processors are to continue to operate at such remarkable efficiency, they must be allowed to have a full range of opportunities to use their skills. This

should include not only the putting on of crush by buying soybeans and selling products but also the taking off of crush by selling soybeans and buying products. In their operations, processors are opposed by speculators who have long since learned to trade in processing margins.

So long as speculators are restricted in the size of positions that they are allowed to take, it seems reasonable to restrict the crush positions of processors to the size of their crush capacity. Defining crush capacity is not simple. Restrictions should not be limited to the quantities of capacity for the months in which off-setting positions are taken because the shifting back and forth among months is a part of the trading game. Further, the operation is assumed to have a perpetual life so that positions can be rolled forward indefinitely and there are no capacity limits.

The cattle-feeding complex is as complete as soybean processing with futures markets in feeder cattle, feedstuffs, and fat cattle. However, trading is less highly developed and used, and price relationships are not as closely related. But it is developing.

Approaching these two are the hog and broiler production activities in which there are futures markets in feeds and finished products. These markets, too, are developing and expanding as producers make increased use of them.

The use of futures on both sides of these several processing activities are risk-reduction operations, hence, bona fide hedging. They should certainly be exempt from speculative position limits. It is to be hoped in the interest of productive efficiency that these kinds of fore-and-aft futures operations with full speculative participation can be extended to many more parts of the economic system. The only reasonable restrictions would be related to production capacity.

#### **TOWARD A SOLUTION**

From this, three things stand out: (1) to qualify as a hedge, a position or set of positions should be risk-reducing; (2) in gross hedging, anticipatory hedging, and partial or selective hedging, there are opportunities for abusive practices if large positions do indeed enable abuses; and (3) it appears to be virtually impossible to specifically enumerate the kinds of positions that exemptions from speculative limits will be automatically granted. There will be risk-reducing activities left out, and there will be included room for the taking of positions that are risk-increasing rather than risk-reducing or that permit the trading in and out of markets on a large scale.

A reasonable solution to the problem is twofold. First, to exempt strictly equal and opposite cash-to-futures offsets in the same commodity, with the promise

that all cash transactions be kept essentially fully hedged. Second, to broadly define hedging in the context of risk reduction and earnings and financial management and require that firms seeking exemption apply for it. The application should include justification in terms of the general definition, a statement of policy, a description of proposed operational practices, and proposed position sizes. Each application would then be judged on its merit and the allowable practices and positions described. It would be necessary to establish a system of auditing to assure compliance.

An alternative would be to require exchanges to establish a system of position limits and exemptions for commercial users based on the same general standard. This might be the better way. If there is merit in speculative position limits, the appropriate size of limits and exemptions to them varies by commodity and exchange and from time to time. It may be that the high level of trading expertise needed to judge the appropriate size and weigh the merit of applications for exemption is most readily found among the membership of exchanges.