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SPECIAL REPORT

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The Mechanics of the Commodity Futures Markets

What They Are and How They Function

Mount Lucas Management Corp.

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AN INVESTMENT IN FUTURES CAN RESULT IN LOSSES. PAST PERFORMANCE RESULTS ARE NOT NECESSARILY INDICATIVE OF FUTURE PERFORMANCE RESULTS.

The Mechanics of the Commodity Futures Markets

INTRODUCTION

Most people have the impression that commodity markets are very complex and difficult to understand. Actually, they are not. There are several basic facts that one must know, and once these are understood one should have little difficulty understanding the nature of futures markets and how they function.

First, a commodity futures market (or exchange) is, in simple terms, nothing more or less than a public marketplace where commodities are contracted for purchase or sale at an agreed price for delivery at a specified date. These purchases and sales, which must be made through a broker who is a member of an organized exchange, are made under the terms and conditions of a standardized futures contract.

The primary distinction between a futures market and a market in which actual commodities are bought and sold, either for immediate or later delivery, is that in the futures market one deals in standardized contractual agreements only. These agreements (more formally called futures contracts) provide for delivery of a specified amount of a particular commodity during a specified future month, but involve no immediate transfer of ownership of the commodity involved.

In other words, one can buy and sell commodities in a futures market regardless of whether or not one has, or owns, the particular commodity involved. When one deals in futures one need not be concerned about having to receive delivery (for the buyer) or having to make delivery (for the seller) of the actual commodity, providing of course that one does not buy or sell a future during its delivery month. One may at any time cancel out a previous sale by an equal offsetting purchase, or a previous purchase by an equal offsetting sale. If done prior to the delivery month the trades cancel out and thus there is no receipt or delivery of the commodity.

Actually, only a very small percentage, usually less than two percent, of the total futures contracts that are entered into are ever settled through deliveries. For the most part they are cancelled out prior to the delivery month in the manner just described.

The Organized Markets or Exchanges

Chicago Board of Trade

Wheat	5,000 Bushels
Corn	5,000 Bushels
Soybeans	5,000 Bushels
Soybean Oil	60,000 Lbs.
Soybean Meal	100 Tons
U.S. Treasury Bonds	$100,000 Par
U.S. 10 Year Note	$100,000 Par
U.S. 5 Year Note	$100,000 Par

New York Board of Trade

Coffee	37,500 Lbs.
Sugar	112,000 Lbs.
Cotton	50,000 Lbs.

New York Mercantile Exchange – Comex Division

Copper	25,000 Lbs.
Gold	100 Troy Oz.
Silver	5,000 Troy Oz.

Chicago Mercantile Exchange

Japanese Yen	12.5 Million Yen
British Pound	62,500 Pounds
Canadian Dollar	100,000 $Can.
Australian Dollar	100,000 $Aus.
Swiss Franc	125,000 Francs
Eurocurrency	125,000 Euros
Live Cattle	40,000 Lbs.

New York Mercantile Exchange

Crude Oil	1,000 Barrels
Heating Oil	42,000 Gallons
Natural Gas	10,000 MM Btu's
Gasoline	42,000 Gallons

How Prices are Determined

A common misconception is that commodity exchanges determine, or establish, the prices at which commodity futures are bought and sold. This is totally incorrect. Prices are determined solely by supply and demand conditions. If there are more buyers than there are sellers, prices will be forced up. If there are more sellers than buyers, prices will be forced down. Buy and sell orders, which originate from all sources and are channeled to the exchange trading floor for execution, are actually what determine prices. These orders to buy and sell are translated into actual purchases and sales on the exchange trading floor, and according to regulation this must be done by public outcry across the trading ring or pit and not by private negotiation. The prices at which transactions are made are recorded and immediately released for distribution over a vast telecommunications network.

Probably the best way to visualize how purchases and sales are made on the floor of a commodity exchange is to think in terms of what happens at a public auction. The principle is the same, except in the futures market a two-way auction is continuously going on during trading hours. This two-way auction is made possible because of the standardized futures contract, which requires no description of what is being offered at the time of sale. Also, the two-way auction is made practicable because the inflow of both buying and selling orders to the exchange floor is normally in sufficient volume to make buying and selling of equal importance. In a public auction the accent is on selling.

The purpose of a commodity exchange is to provide an organized marketplace in which members can freely buy and sell various commodities in which they have an interest. The exchange itself does not operate for profit. It merely provides the facilities and ground rules for its members to trade in commodity futures, and for non-members also to trade by dealing through a member broker and paying a brokerage commission.

The Clearing House

A brief explanation of the clearing house (or clearing association) and its function in futures trading is important to understanding the operation of the futures markets.

Each futures exchange has its own clearing house. All members of an exchange are required to clear their trades through the clearing house at the end of each trading session, and to deposit with the clearing house a sum of money (based on clearinghouse margin requirements) sufficient to cover the member's debit balance. For example, if a member broker reports to the clearing house at the end of the day total purchases of 100,000 bushels of May wheat and total sales of 50,000 bushels of May wheat (which may be for himself, his customers, or both), he would be net long 50,000 bushels of May wheat. Assuming that this is the broker's only position in futures and that the clearing house margin is six cents per bushel, this would mean that the broker would be required to have $3,000 on deposit with the clearing house.

Because all members are required to clear their trades through the clearing house and must maintain sufficient funds with it to cover their debit balances, the clearing house is placed in a position of being responsible to all members for the fulfillment of contracts. Therefore, instead of broker A who, for example, bought 50,000 bushels of May wheat from broker B being responsible to broker B for fulfillment of his end of the contract, the clearing house assumes

the responsibility. In like manner, the responsibility of broker B to broker A in connection with this transaction is passed on to the clearing house, with neither A or B having any further obligation to one another.

The clearinghouse becomes the "other party" for all futures trades between exchange members. This mechanism greatly simplifies futures trading. Considering the huge volume of individual transactions that are made, it would be virtually impossible to do business if each party to a trade were obligated to settle directly with each other in completing their transactions.

Hedging in Futures

The justification for futures trading is that it provides the means for those who produce or deal in cash commodities to hedge, or insure, against unpredictable price changes. There are many kinds of hedges, and a few examples can adequately explain the principles of hedging.

Take the case of a firm that is in the business of storing and merchandising wheat. By early June, just ahead of the new crop harvest, the firm's storage bins will be relatively empty. As the new crop becomes available in June, July and August, these bins will again be filled and the wheat will remain in storage throughout the season until it is sold, lot-by-lot, to those needing wheat. During the crop movement when the firm's inventory of cash wheat is being replenished, these cash wheat purchases (to the extent that they are in excess of merchandising sales) will be hedged by selling an equivalent amount of futures short. Then as the cash wheat is sold the hedges will be removed by covering (with an offsetting purchase) the futures that were previously sold short. In this manner the storage firm's inventory of cash wheat will be constantly hedged, avoiding the risk of a possible price decline – one that could more than wipe out the storage and merchandising profits necessary for the firm to remain in business.

In the example just given, if the storage firm buys cash wheat at $4 a bushel, and hedges this purchase with an equivalent sale of December wheat at $4.05, a 10-cent break in prices between the time the hedge is placed and the time it is taken off would result in a 10-cent loss on the cash wheat and a 10-cent profit on the futures trade. In the event of a 10-cent advance there would be a 10-cent profit on the cash and a 10-cent loss on the futures trade. In any case, the firm would be protected against losses resulting from price fluctuations, due to offsetting profits and losses, unless of course cash and futures prices should fail to

advance or decline by the same amount. Usually, however, this price relationship is sufficiently close to make hedging a relatively safe and practical undertaking. In fact, if the future is selling at a normal carrying charge premium at the time the future is sold as a hedge, the future should slowly but steadily decline in relation to the cash as it approaches the delivery month, thus giving to the storage interest his normal carrying charge profit in his hedging transaction.

Another example of hedging might be that of a flour mill which has just made heavy forward sales of flour, sales that will require substantially more uncommitted wheat than the mill owns. To hedge these flour sales, the mill will at the time the flour is sold buy wheat futures equivalent to the amount of wheat needed to fill its forward flour commitments, and then as the wheat is acquired to fill these commitments remove the hedges. This will protect the mill against an advance in the price of wheat between the time it sold the flour and the time it is able to procure the cash wheat necessary to make the flour.

In connection with hedging, it must be remembered that there are unavoidable risks when large stocks of any commodity subject to price fluctuation must be owned and stored for extended periods. Someone must assume these risks. Usually those in the business of storing, merchandising and processing cash commodities in large volume are not in a position to assume them. They are in a competitive business dependent upon relatively narrow profit margins, profit margins that can be wiped out by unpredictable price changes. These risks of price fluctuation cannot be eliminated, but they can be transferred to others by means of a futures market hedge.

Speculation and Its Function

The primary function of the commodity trader, or speculator, is to assume the risks that are hedged in the futures market. To a certain extent these hedges offset one another, but for the most part speculative traders carry the hedging load.

Although speculation in commodity futures is sometimes referred to as gambling, this is an inaccurate reference. The generally accepted difference between gambling and speculation is that in gambling new risks are created which in no way contribute to the general economic good, whereas in speculation there is an assumption of risks that exist and that are a necessary part of the economy. Commodity trading falls into the latter category. Everyone who trades in commodities becomes a party

to an enforceable, legal contract providing for delivery of a cash commodity. Whether the commodity is finally delivered, or whether the futures contract is subsequently cancelled by an offsetting purchase or sale, is of no real consequence. The futures contract is a legitimate contract tied to an actual commodity, and those who trade in these contracts perform the economic function of establishing a market price for the commodity.

While speculative traders assume the risks that are passed on in the form of hedges, this does not mean that traders have no choice as to the risks they assume – or that all of the risks passed on are bad risks. The commodity trader has complete freedom of choice and at no time is there any reason to assume a risk that he doesn't think is a good one. One's skill in selecting good risks and avoiding poor risks is what determine one's success or failure as a commodity trader.

How Short Sales Are Made

To sell a commodity future short one sells first and then closes out (or covers) this sale with an offsetting purchase at a later date. One need not have, or own, the particular commodity involved. The practice of selling short is a common one in futures markets. Those who sell short (with the exception of those placing hedges to protect a cash commodity position) do so in the expectation that prices will decline and that they will be able to buy later at a profit. A short position in the market is of course just the opposite of a long position, which involves buying first and closing out (or liquidating) later with an offsetting sale.

Some find it difficult to understand how short sales are possible, due to the preconceived idea that one cannot sell something that he doesn't own. To understand how one can sell something short one must first understand that it is possible, and perfectly legal, to sell something that he does not own – providing the sale has certain attached conditions. One of the conditions is that one agrees to deliver what he sells at a later date. Another condition is that, if one does not deliver, he will stand any loss that the buyer may suffer as a result of an advance in price between the time one makes the sale and the time he cancels out his delivery obligation by means of an offsetting purchase. When one sells a commodity future short, one always does so under these conditions. Of course if prices decline during the period one is short one realizes a profit on the transaction. If, for example, one sells 5,000 bushels of Chicago May wheat short at $4.10 per bushel and then later covers this short sale with an offsetting

purchase at $4 per bushel, the profit is 10 cents per bushel, or $500, on the 5,000 bushel contract, less the broker's commission. In the event wheat prices advance and one is forced to cover his short sale at $4.20, one would have a loss of $500, plus commission.

Short sales in commodities are much simpler than in stocks. When one sells a stock short he must borrow the stock for immediate delivery against his short sale. This involves a substantial loan deposit and costs that are not involved when one goes long on a stock. Also, stock exchange rules prohibit a stock from being sold short in a declining market unless the short sale is made at a price above the last sale price of the stock, or in other words on an "uptick." The short seller in commodities is faced with none of these restrictions.

Margin Requirements

When one establishes a position in a commodity future, either long or short, it is necessary to deposit with the broker a sufficient amount of money to protect the position – actually to protect the broker against loss in the event the trade entered into is unprofitable. This deposit is referred to as the margin. It should not be confused with the clearinghouse margin required of an exchange member. The margin required of a customer by a broker is a different margin than that required of the broker by the clearinghouse. Both margins serve the same purpose, however – they insure that obligations arising from commitments in commodity futures are fulfilled.

There is no interest charged on the difference between the market value of a futures contract and the margin deposited to trade in it.

Margins in commodity trading are, in effect, the same as "earnest money" in a real estate transaction. In a real estate transaction the "earnest money," or down deposit, is to bind a contract on real estate contracted for today but to be delivered at a later date. In the case of a commodity futures contract, just as in the case of a real estate contract calling for delivery of the real estate at a later date, full payment is made upon delivery. But prior to actual delivery all that is needed is a deposit sufficient to bind the contract.

The amount of margin that one is required to deposit with the broker in order to trade in commodities is usually 10 percent or less of the market price of the commodity. Exchange regulations prescribe the minimum margins that brokers require of customers. These minimums are changed from time to time, depending on market conditions. Also, it should be

noted that at any given time one broker might require larger margins than another. The broker is limited only with respect to minimum requirements. If he feels that adequate protection requires a larger margin than the minimum required by the exchange regulations, he is free to ask for a larger margin. In this connection, however, for competitive reasons a broker is somewhat limited in the amount of margin required from his customers. Consequently, the tendency is for margin requirements among various brokers to stay pretty close in line.

After making an original margin deposit with a broker, one is obligated to add this deposit only if (1) he increases the size of his market commitment, or (2) there is a loss in his existing position due to prices moving in a direction contrary to that which he had expected. The usual procedure is for the broker to call for additional margin when the original margin has been reduced (by an adverse price move, usually calculated as of the close of the market session) to roughly 70 to 75 percent of the margin originally deposited. The margin call is normally for the amount needed to bring one's margin back up to the original requirement.

Assume that a trader has sold 5,000 bushels of May wheat short at $4 a bushel, and that the broker has required a $500 margin deposit on the transaction. One sells short, naturally, because he expects prices to decline. But suppose prices go up instead. Each one cent move in the price of wheat is equal to $50 on a 5,000 bushel contract. This means that in the event of a three-cent advance one would have a loss of $150 in his short position. The margin balance would be reduced to $350 and the broker would probably at this point call for an additional $150 to bring the margin back up to the original requirement.

A point that should be made clear in connection with this example is that unless one closes out his short position on this three-cent advance, the $150 loss is a paper loss only – one that will be increased or reduced depending on subsequent market action. If one maintains his short position and if May wheat, after going up three cents, drops back to the selling price of $4 one will at this point be exactly where he was when he originally went short. There will be a credit with the broker of $500, the amount of the original margin deposit, plus the $150 that was deposited later.

Let us suppose that after selling May wheat short at $4, prices decline to $1.90 where the trader covers his short wheat position with an offsetting purchase. In such an event one would have a $500 profit on the short sale. The broker would automatically credit this profit to the account, and with the $500 initially deposited one would have a total credit of $1,000. All or any of this credit balance is of course subject to withdrawal upon request.

Conclusion

Commodity markets are not as commonly believed. In many ways, they operate just as public market places or auctions. For instance, prices of commodities on an exchange are determined solely by supply and demand conditions, which is no different from the way in which prices are determined in more familiar markets. In addition, commodity margins are analogous to the down payment one generally makes in connection with a real estate transaction. Once certain facts are understood, one can see that commodity markets are an integral part of a well-run economy.

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