Part III

USE OF FUTURES MARKETS

Having looked at what futures markets are and what they are about, we are in a position to look at the way that markets are used by firms and individuals to increase the profitability of their production, marketing, and processing activities and to make money from futures trading. Futures markets are tools; they are not means of making money for the principals in trades. They are tools for implementing speculative judgments and enabling specialization in some aspects of the commodity trades while avoiding participation in others. It is important that prospective users from the commodity trades—agricultural producers, warehousemen, merchants, processors—understand that futures markets are not a new-found road to riches that can automatically assure business profitability. A poorly run cattle feeding operation is just that, with or without the use of futures markets, and is therefore unprofitable. An uneconomic country elevator operation will remain just that even though the management is highly skilled in futures market operations. Futures markets are a device by which a skilled speculator can greatly increase the exercise, hence the profitability, of his skills. But they are also a means by which an unskilled speculator can exercise his mistakes with great facility and lose his money rapidly. Futures markets are a means of implementation, not an enterprise in themselves.

The use of futures markets in connection with a commodity business
or as a commodity speculator is a game of skill. The rudimentary futures operation, such as hedging a stored inventory, are simple and require little skill. But almost never is the game so simple. Price relationships are complex and uncertain and there are many factors that affect them. Similarly, multitudinous factors go into the makeup of prices so that an understanding of them requires detailed knowledge and skill in interpretation. Each of the commodity trades and each commodity price is surrounded by its own practices, facts, and behavior. While these tend to be generally similar in their broad outlines, they are specifically quite different. Thus, it is impossible for any one person to possess the knowledge and skills necessary to cover the whole field. Further, there is too much information to condense into one volume, let alone one section of one volume. What is attempted here is a general description, strengthened (hopefully) by a few examples.
CHAPTER 10

Warehousemen and Merchants

The area of futures trading about which there is the most literature and about which there is the most complete understanding is the use of futures in warehousing and merchandising storable commodities, grains in particular. This is the use of futures to shift price level risks while retaining the opportunity to speculate in basis. It is our point of departure in the use of futures markets.

Hedging in Detail

To hedge is to assume a position in futures equal and opposite to an already existing cash position. While in broad context the essence of hedging is risk shifting, the hedger should realize that he does not actually shift risk; he offsets the risk of price level change. He does not cease to speculate; he takes on an additional speculation. Because the additional speculation is opposite in short futures when he is long cash and long futures when he is short cash—profits and losses, because of changes in price levels, cancel and leave only profits and losses that result from changes in price relationships. The hedger should be under no illusion that he has no market position; he has two where previously he had only one.

The two positions, cash and futures, should be taken as near the same time as possible. But futures contracts are traded only a limited number of hours—9:30 A.M. to 1:15 P.M. (central time) for grains—and most cash commodities are bought and sold before and after these times. Should the hedger sell futures equal to the amount of cash grain that he expects to purchase after the close, or should he wait until he knows how much he has bought and then sell an equal amount at the opening the following day? There is some room for judgment about overnight price change. During periods of heavy movement, experienced
hedgers tend to sell futures in anticipation of purchases, and during periods of light movement, tend to sell futures contracts after making purchases.

Futures contracts are traded in fairly large units—5,000 bushels of the grains—while purchases are of all sizes. Thus, the hedger necessarily carries a small open position—it should not, however, exceed 2,500 bushels of grain. Whether he should be net long or short is a matter of speculative judgment about price change. But the positions should be as nearly the same size as possible.

Two rules (1) take offsetting positions simultaneously, and (2) keep offsetting positions as nearly the same size as possible, must be observed in a hedging program. To fail to observe both rules is to speculate in price level. Warehouse operators frequently talk about anticipatory hedging—selling futures well ahead of buying cash commodity—or about waiting for a postharvest recovery before placing hedges. Neither is part of a hedging program. To dress them up in hedging terminology does not change their nature. They are both examples of price level speculation.

Warehousemen—country elevators in particular—frequently go long cash grain, watch the price go up, and pride themselves on their speculative skill. The fact may be that the futures actually went down and the price appreciation was less than the basis gain, with the result that the speculation actually lost money. Many warehousemen do not speculate, but many do. But price level speculation is not a part of the warehouse business. It should be kept separate and should not be done in the cash commodity. People in the warehouse business who have an irresistible urge to speculate in price level should open a separate account—perhaps in their wives’ names or their own rather than in the companies’ names—and test their skill without the aid of the built-in upward bias of cost of storage of cash commodity prices.

The Mechanics. The country grain elevator is the simplest hedging case and a set of instructions for them is used as an example here. The principles are applicable to all warehouse operations.

Hedges should be set up on a “T” account system, with one side of the account for cash and the other for futures. Only rarely do country elevators make, and never do they take, delivery. Accordingly, the two accounts should be kept separate, cash transactions with subsequent cash transactions and futures transactions with subsequent futures transactions.

But the accounting of the cash and futures transactions must be made in a single hedging account. Many elevators have a composite account for cash grain and a separate futures account. The cash grain account, showing a gross profit or loss from sales of the various grains handled, contains elements of handling margins, storage returns on owned grain, speculative profits and losses, and sometimes storage on customer owned grain. The futures account is generally kept separate, showing a profit or loss without regard to the offsetting profits and losses in cash grain resulting from price level changes.
Frequently when firms keep cash and futures accounts separately, they note losses in the futures account and think and act negatively with regard to futures trading even though their hedging operations are successful. An integrated cash and futures accounting system is essential to a good hedging program.

The cash price entered in the hedging account should be the price the cash grain would have brought had it been sold instead of hedged, rather than the price paid to producers. That is, the amount of the handling margin should not be entered in the hedging account. If corn is bought at $2.75 on a six cent margin and hedged, it should be shown in the hedging account as bought at $2.81.

Illustration 1 shows a cash inventory hedged in futures. There was a gain of 10 cents per bushel on the cash and a loss of 5 cents on futures before commissions. (Commission is roughly 3/4 cents per bushel for nonmembers.)

<table>
<thead>
<tr>
<th>Date</th>
<th>Cash Account</th>
<th>Futures Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 10</td>
<td>Bought 10,000 bushels</td>
<td>$2.65</td>
</tr>
<tr>
<td>Nov. 15</td>
<td>Sold 10,000 bushels</td>
<td>2.75</td>
</tr>
<tr>
<td></td>
<td>+ .10</td>
<td></td>
</tr>
<tr>
<td>Gain</td>
<td>.05</td>
<td></td>
</tr>
</tbody>
</table>

Illustration 2 shows a short cash position hedged in futures. This hypothetical hedge was placed ahead of harvest and shows a cash gain of 12 cents and a futures loss of 7 cents.

<table>
<thead>
<tr>
<th>Date</th>
<th>Cash Account</th>
<th>Futures Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aug. 15</td>
<td>Sold 30,000 bushels</td>
<td>$5.17</td>
</tr>
<tr>
<td>Sept. 30</td>
<td>Bought 30,000 bushels</td>
<td>5.05</td>
</tr>
<tr>
<td></td>
<td>+ .12</td>
<td></td>
</tr>
<tr>
<td>Gain</td>
<td>.05</td>
<td></td>
</tr>
</tbody>
</table>

Illustration 3 shows how a hedge is moved forward as the delivery month in which the hedge was originally placed approaches.

<table>
<thead>
<tr>
<th>Date</th>
<th>Cash Account</th>
<th>Futures Account</th>
</tr>
</thead>
<tbody>
<tr>
<td>Oct. 15</td>
<td>Bought 50,000 bushels</td>
<td>$2.50</td>
</tr>
<tr>
<td>Nov. 25</td>
<td>Sold 50,000 bushels</td>
<td>2.90</td>
</tr>
<tr>
<td>Nov. 25</td>
<td>Bought 50,000 bushels</td>
<td>3.10</td>
</tr>
<tr>
<td>Apr. 15</td>
<td>Sold 50,000 bushels</td>
<td>2.90</td>
</tr>
<tr>
<td></td>
<td>+ .40</td>
<td></td>
</tr>
<tr>
<td>Gain</td>
<td>.20</td>
<td></td>
</tr>
</tbody>
</table>

Note that the sources of the net gains were from changes in the relationship of cash and futures prices. In Illustration 1, the cash gained 5 cents in relation to the futures while the grain was in store. The cash grain could have been held
unhedged at a larger gain but only at the hazard of an adverse price change. The hedge may have been placed because the operator elected to separate the storage business from price level speculation as a matter of specialization, because he thought the price might go down, or because he couldn’t finance the inventory except on a hedged basis. By the same token, he could have sold the cash grain and realized an ordinary merchandising margin. But in doing so he would have foregone the earning of revenue from otherwise unused space.

In Illustration 2, the gain was from a widening of the basis. Note that the cash sale was made at 22 cents under the November and bought at 27 cents under. The operator anticipated, for whatever reason, that the cash price would decline relative to the futures. It did. He made money from implementing his correct speculative expectation. The motivation was obviously not risk shifting, else he would not have sold cash soybeans six weeks before he bought them. However, speculation in price level was separated from speculation in price difference. He would have been better off to speculate in both level and difference but price level was not his game.

In Illustration 3, cash gained in relation to the futures during the October 15–April 15 storage period. The price level increased 20 cents and the cash gained 20 cents in relation to the futures. Again, the hedger would have been better off had he speculated in both price level and price difference. He may have hedged because he thought the price level would decline, he didn’t have an opinion about price level, he wanted to avoid the risk of price level decrease, or because he could not borrow the money to own the corn unless he hedged.

Hedges should not be thought of as being placed and removed at specific prices but rather in terms of basis. In Illustration 1 the cash was bought at 20 cents under and sold at 15 cents under for a gain of 5 cents. In Illustration 2 the cash was sold at 22 cents under and bought at 27 cents under for a gain of 5 cents. In Illustration 3 the cash was bought at 30 cents under the December future, the hedge was moved forward at a May premium of 20 cents, and the cash was sold at 30 cents under for a gain of 20 cents.

There are two reasons for thinking in terms of basis rather than price: (1) The arithmetic is much simpler, and (2) the hedger is concerned about basis rather than price. When he hedges, he decides not to speculate in price. When he thinks in terms of basis, he is helped to remember that price is of no concern to him. If he thinks in terms of price, he is likely to regard all three illustrated hedges as losing money. True, more money would have been made by speculating in cash than by hedging. However, the hedges, per se, were successful.

**Country Elevator Hedges**

The primary interest of country elevators in hedging is to earn returns from otherwise empty space. However, hedges can be profitably used in other ways. Five kinds of uses are discussed here.
Storage Hedge. This type is the fundamental use of hedging by warehousemen. It is the means by which warehouse space is sold. The underlying concept is that warehousemen have space, equipment, labor, etc., available and they wish to sell the storage service for as much as possible. They necessarily watch the going market price of storage for the various grains and decide when to commit space and which grain to store. They must choose from that which is available, but most elevators have less than enough space to store the amount of grain they buy.

By way of example, suppose that an elevator has 300,000 bushels of storage space and buys 200,000 bushels of soybeans and 400,000 bushels of corn during the fall harvest period. Further, suppose that 100,000 bushels of space is taken by farmer customers. This leaves 200,000 to sell on the storage market. The elevator will thus sell and ship two of every three bushels purchased and hold one for hedged storage. In other words, it has a one-third selectivity of hedging bases. The hedger can reject two-thirds of the basis opportunities offered and keep one-third. His objective is to choose the most profitable one-third. The chronic question is: "Should I take this basis or wait for a better one?" It is an interesting game and, watching it, it is again apparent that hedging is not the opposite of speculation, but rather a different kind of the same thing.

As the hedger reaches the other end of the line, a similar question arises: "Should I sell cash and buy in my hedges now, or will the cash gain further on the futures by enough to cover costs?" The answer to this question is not clear-cut either. In some years it is profitable to unwind hedges on the same basis that one would find profitable to continue in other years. Selecting the right time to unwind hedges is generally easier than selecting the basis on which space is committed.

A third question in the storage hedge is the delivery month to hedge in. Should hedges be placed in the nearby month with the expectation that they can be moved forward at more favorable spreads between futures than currently exist, or should hedges be placed in a distant delivery month near the end of the storage period? The answer depends upon what the hedger expects to happen to the price of storage in the various periods from Dec. to March, March to May, etc.

Coverage of a Cash Sale Ahead of Harvest. On occasion, elevators can profitably sell grain ahead of purchase from farmers and cover the resultant short position by buying futures. If the hedger observes that cash grain for delivery at harvest is selling unusually close to the nearby futures contract and if he expects a heavy harvest movement, he can sell to interior merchants for harvest delivery and buy an equal amount of futures. In doing so, he becomes short the basis. If the basis widens as in Illustration 2 (page 177), he will profit as he buys cash grain from farmers and sells his hedges. If the basis narrows, he will lose. Note that such transactions in soybeans would have lost money from August to October in both 1965 and 1966. (See figures 6 and 7.)
This kind of basis operation is fundamentally speculative. All of the merchants in the market are playing the same game. When they think that the basis will narrow, they buy cash and sell futures, going long the basis. When they think the basis will widen, they sell cash and buy futures. Thus, before harvest, the basis is representative of the aggregate market expectation of the harvest basis. Country elevators are in a relatively good position to judge crop size and farmer thinking about whether to hold or sell. These are two important factors in establishing the harvest basis. Preharvest purchases are often dominated by exporters who must get their purchases lined up well ahead of harvest because of purchases by firms in recipient countries. So long as such purchases exceed preharvest sales by farmers, there is upward pressure on the basis. But the elevator hedger must accurately anticipate farmer willingness to sell at harvest.

When this kind of hedge is successful, some hedgers are tempted to use the advantageous cash sale to raise bids to farmers in the interest of increasing volume. Such procedure is not wise. This kind of hedge is about as likely to lose money as to make money, and farmers are not likely to be willing to participate in losses. Such strong bidding is really margin cutting and should be regarded in that light.

Coverage of a Cash Sale During the Marketing Season. Occasionally elevators have an opportunity to make an especially favorable cash sale for deferred shipment; as elevators are bid for cash on a basis higher than the basis they expect to prevail at the time of shipment. There are a variety of reasons why such bids are made in connection with export sales, processed product sales, and freight rates. But the elevator should keep two things in mind: (1) The normal basis change works against being short the basis during the marketing season, and (2) some merchant has had the same opportunity to make the short basis sale and passed it up.

More usual are premium bids for deferred shipment, such as corn for January shipment during harvest. For example, on Oct. 29, 1964, corn for immediate shipment was bid at $1.07, track Illinois points, corn for January shipment was bid at $1.15, and the March futures closed at $1.22%. The spot price was 15$\frac{3}{4}$ cents under the March. On January 4 the spot price was $1.21, and March closed at $1.26\frac{1}{8}$. The spot was 5$\frac{1}{8}$ under the March. The premium offered was 8 cents, and the basis narrowed by 10$\frac{5}{8}$ cents. A short sale of cash for January shipment, covered by a purchase of March futures, would have caused the elevator hedger to lose 2$\frac{7}{8}$ cents per bushel plus commission. It is a fair bet that the interior merchants making the premium bids were going long cash and short futures.

This is not an isolated example. Rather, it was chosen for its typicalness. It demonstrates the speculative nature of basis formulation. It is a game played among basis traders in which there are rewards and penalties for being right and wrong in basis expectations.
**Hedging Off Purchases on a Weak Basis.** Occasionally the basis at some locations is unusually weak. Such locations are usually tied to one or a limited number of markets because of freight rate considerations. If the destination effectively goes out of the market by bidding low, the elevator has trouble in meeting competition in its bids to producers. If the elevator has reasonable confidence that its usual destination will come back into the market with a competitive bid, it can hedge off its own purchases made at competitive levels and wait for a favorable basis before selling.

Futures markets react quickly to unusual news, such as war or drought. Cash markets often do not follow immediately. Purchases made from farmers at such times can be more profitably hedged than sold in cash markets. These things happen infrequently, but the astute hedger takes advantage of them when they do occur.

**Hedging to Defer Pricing to Farmers.** Farmers often want to deliver grain at harvest and defer pricing until later. If the elevator has a sufficient amount of space and makes an appropriate storage charge, no hedging problem arises. But frequently the elevator has insufficient space and is faced with the question of selling cash grain and buying futures. The simple solution is to buy the grain and let each farmer buy his own futures. But because individual farmers have small amounts of grain to store, limited understanding of futures markets, and because elevators are pressed by competition, they seek other solutions. Under warehouse laws, grain not physically present cannot be "stored" and a "storage charge" made. It must be purchased on a contract specifying a price relationship. Two different kinds of contracts are written:

a. The elevator agrees to pay the farmer the same amount under a given futures contract as the market price on the day the contract is written. If the bid to farmers is 24 cents under the May futures on the day the purchase contract is made, the elevator agrees to pay the farmer 24 cents under the May on whatever day he elects prior to May 1. The contract can be written in relation to any futures contract. The elevator can then sell the cash grain and replace it with a futures contract. Because the elevator buys and sells on the same basis, it can neither gain nor lose from basis change.

b. The elevator agrees to pay the farmer the going market price on whatever day he elects, minus a specified amount that varies among elevators and depends on when the farmer elects to sell. These are typically called delayed price contracts. Some of them are written at a monthly "storage" equal to the storage rate charged by elevators. Others have a charge for "deposit" plus a monthly storage. A third type is a flat charge for the season regardless of when the grain is priced. A charge for delayed pricing is a procedure farmers understand and tend to prefer. Elevators sell the cash and price it in a comparable delayed price arrangement or, more often, replace it with futures. When the elevator replaces the cash with futures it protects itself from price level changes but retains a basis...
risk. If the basis narrows more than the charges made, the elevator loses money and if the basis narrows less, it makes money. The elevator typically receives payment for the cash grain but does not pay farmers until it is priced. Thus, it can obtain interest income to partly offset the narrowing of the basis.

If a contract is to be realistic in the discounts in lieu of storage charges it must be written so that the discounts minus an estimate of interest earnings parallel the basis pattern. At $2.75 corn and seven percent interest, monthly interest earnings are 1.6 cents. In the mid 1970's the month-to-month change in corn basis in the midwest was about:

<table>
<thead>
<tr>
<th>Period</th>
<th>Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>October to November</td>
<td>0</td>
</tr>
<tr>
<td>November to December</td>
<td>+14</td>
</tr>
<tr>
<td>December to January</td>
<td>+2</td>
</tr>
<tr>
<td>January to February</td>
<td>+3</td>
</tr>
<tr>
<td>February to March</td>
<td>+3</td>
</tr>
<tr>
<td>March to April</td>
<td>+3</td>
</tr>
<tr>
<td>April to May</td>
<td>+2</td>
</tr>
<tr>
<td>May to June</td>
<td>+1</td>
</tr>
<tr>
<td>June to July</td>
<td>-4</td>
</tr>
</tbody>
</table>

The total is 24 cents. If an elevator had a schedule of charges exactly equal to these amounts minus an allowance for interest it would break even on average. In years of greater basis gain it would lose, and in years of smaller gain it would profit. But in years of a wide harvest basis there is usually a greater demand for delayed pricing and vice-versa, so that the elevator tends to lose more when it loses than it gains in profitable years. It is particularly important that the charge system offset the large basis gain immediately following the end of harvest because many farmers sell in January. A monthly charge of 2.5 cents would cover the basis gain adjusted for interest earnings for the corn held to June. But corn held only to January would return only eight cents versus a basis gain of sixteen cents.

**Hedging Program.** This enumeration of kinds of hedges can be expanded by subdividing the several types so that the process is made as complicated as we have patience to think it through. The specialized warehouse operator has both time and patience. His operations can be made just as complex as his skills and willingness to work at basis analysis permit. But work at it he must because the essence of hedging is basis analysis and forecasting. The several kinds of hedging activities are not separate enterprises carried out in succession but rather are a part of an integrated whole that makes up a hedging program. Nearly all warehouse firms handle several different commodities—the country elevators as many as four kinds of grain. Each is continually buying, selling, receiving, shipping, and storing. All of the individual operations must be fitted together to form an integrated whole; each is done in relation to the existing operations going on in the others. The whole of the program must be related to the total activities and objectives of the firm. A hedging program is a supplement to the primary business activities of the firm.
The purpose of a hedging program is to enable the firm to supplement its income and to most efficiently use the facilities that it must have and operate in connection with its cash commodity operations. The nature of the country elevator operation changed rapidly during the 1960–75 period and was far from complete at the end. As grain farms became larger and harvesting methods changed the volume of receipts at harvest and the demands for storage increased rapidly. To effectively serve their customers, and thus stay in business in a highly competitive industry, elevators had to expand their capacity to receive, condition, and store grain, corn in particular. They had to make storage facilities available to farmers in as large amounts as farmers wanted. Sufficient plant to accommodate the harvest peaks resulted in excess capacity during most of the year. The basic purpose of a hedging program in this context was to increase income from otherwise unused capacity while avoiding the risks of price change inherent in cash grain ownership. They cannot maximize the use of available space without owning cash grain inventories and can neither finance cash grain inventories nor absorb losses from price decreases without hedging. The situation in Illinois corn producing areas in the 1960’s was remarkably similar to that of a century before.

A second purpose of elevator hedging is to maximize selling prices. Hedging is a supplemental outlet for cash grain that is useful in merchandising activities. It enables the elevator to avoid temporarily depressed local prices without reducing bids to farmers or assuming price risks. It enables full play of the elevators merchandising skills.

If some elevators implement hedging programs that enable them to increase earnings it is essential that the others also do if they are to survive. It is an intensely competitive industry.

Operational Tools. The essence of a successful hedging program is forecasting basis. What are the tool for analysis? They can be divided into two main groups: (1) records of past behavior, and (2) records of factors affecting basis.

As we have noted, basis charts for a grain at a location are broadly and generally similar from year to year but individual years are specifically different and the differences are sometimes substantial. It is knowledge of the specific differences that is responsible for success or failure in merchandising and hedging programs.

To operate successfully, each hedger must develop his own series of data. There is no shortcut to success. A good job of hedging requires a lot of work, along with careful and continuous attention. Only by keeping his own data will the hedger be familiar (day by day) with the basis situation, with the factors affecting basis, and with comparable basis situations at other times. Only in this way will he have the hedging information pertinent to his location.

Each operator is concerned with basis at his location. From this point of view, the whole world of prices revolves around his location. The data pertinent to a
single location is not available except as the individual himself develops it. The first category of records should include:

1. **Price and basis tables.** Tables of cash prices—generally, the selling prices at the location of the hedging operation and at the delivery point of the futures market and the closing prices of all futures contracts—should be kept. The prices themselves can be entered on one half of a page. On the other half, so that both are visible at the same time, the relationship—basis of the local cash price to each of the futures prices—should be entered. The spot cash prices are related to the old crop futures, and the deferred shipment prices are related to new crop futures.

2. **Spread tables.** A tabulation of the spreads as they exist each day is useful in forming judgments about which delivery month will be most profitable for hedging and about what spreads should be placed ahead of the cash grain purchases that will eventually be hedged.

3. **Basis charts.** The tabulated data are used to make charts for easy inspection of basis patterns and trends. Some people read tables of data easily; others best understand charts. Keeping both is useful.

4. **Long and short records.** Each firm must have an integrated record of cash and futures transactions. The cash commodity is priced into the hedging account at the spot selling price. The offsetting futures price is entered, and the ingoing basis computed. When hedges are removed, the gains and losses can be easily computed.

The second category of records is more general. It is also more difficult to deal with in specific terms. A lot of data on the production, use, and flow of commodities are available—much on a weekly basis.

The data kept should include: (1) production by states, (2) receipts, disappearance, and shipments at the pertinent terminals, (3) terminal stocks, (4) primary receipts, shipments, and stocks, (5) exports by points, (6) farm stocks, (7) total stocks, and (8) open interest in futures markets and its breakdown between speculators and hedgers.

Equipped with the tools, what does one do? Analytical techniques for basis behavior have not been developed in a specific or quantitative sense. In analyzing a current basis situation certain questions should be asked: (1) How is this basis going to change in the future? (2) What happened from this time onward last year? (3) What has been the average behavior over the past several years? (4) What is specifically different about the current year that will cause a deviation from past patterns? (5) Is this a basis situation that will prove profitable? (6) Is this situation more or less profitable than one that may exist next week or next month?

Most of the answers are matters of judgment. Good judgment is acquired from experience and diligent examination of all of the factors. When the hedger learns to explain that which has happened before, he is in a position to anticipate that which will happen next.
What Do Elevators Really Do? The thing described above is a complete hedging program of a kind recommended for warehouse and merchandising operation. It rests on the twin assumptions of a high degree of sophistication and a policy of not speculating in price changes, and the constant maintenance of a fully hedged position. It is not representative of the real world of warehouse operations, grain and otherwise. There is no systematically assembled knowledge of what country elevators really do but some impressions are worth listing.

Some elevators, probably a small percentage, do run hedging programs by the book and with a high degree of sophistication. The number is greater than it was 10 or 20 years ago before the increase in size and amount of nongovernmental storage associated with changes in grain production took place. Some of these are small, independent companies while others are a part of line companies.

Something of the change taking place is shown by an exchange that took place before the House of Representatives Agricultural Committee when it was considering a futures trading bill in 1966. Mr. Hagen of California. "Do you speculate on the market yourself?" Mr. Brouilette (a country elevator owner-operator from Indiana) "I think that I would be a little bit remiss to say that sometime in one’s life he has not made a trade. However, our banker will not let me speculate so I, at the present time, do not speculate." Mr. Brouilette had previously described the rapid increase in the storage of corn bought at harvest that had taken place and his use of corn futures associated with it. What he meant was that prior to the change in his operation he did speculate in grain prices, both cash and futures, but that he had been forced to stop out of financing considerations. There was a note of wistfulness in Mr. Brouilette's expression.

At the other end of the scale are elevators whose managers know nothing of hedging or futures market operations. There are provisions in the by-laws of some firms, farmer cooperatives in particular, prohibiting any activities in futures markets. These stem from a history of speculation in futures that led to company bankruptcy. This is not to say that companies that do not trade futures contracts do not speculate. Nearly all elevators take cash grain positions and some of these positions are quite large. A high proportion are on the long side—buying cash grain and waiting for the price to go up which it typically does from harvest onward. Instances have been found in which elevators have been long as much as a quarter of a year's receipts of cash soybeans while having by-laws prohibiting futures trading because it is speculative.

Selective hedging is common. Elevators acquire cash grain inventories and hedge when they think the price is apt to decline or hedge part of the inventory so that risks are kept at "sleepable" levels. The percentage of the inventory that is carried hedged is varied as the managers' expectations and certainty-uncertainty change. Anticipatory hedging is the short side of the selective hedging
game. Here, managers place hedges against inventories that they expect to buy at lower prices. Their thought is that grain will come to market, put pressure on prices as it does, and that they will be in an excellent basis position by placing hedges in advance. If the harvest movement does not put pressure on prices they can cover their mistakes as an abnormally small basis gain.

Another variant is to hedge and fail to offset the futures position when the cash grain is sold. This tends to happen when the futures position is a losing one and the manager either thinks or hopes that the price will decline so that he will, at worst, break even on the futures side.

A thing called a "Texas hedge" should be mentioned as an extreme case. Here the elevator accumulates an inventory of cash grain and, expecting the price to go up, holds on to it. This seems like such a good idea that he regrets that he hasn't a larger stock and does the next best thing, buys an equal amount of futures. This, of course, has no resemblance to a hedge but is sometimes done.

These impressions lead to some generalizations. First, the favorable image the term hedging has, in contrast to speculation, leads to all sorts of things being called hedging. Second, country elevators speculate in prices of both cash and futures. It appears that some amount of speculation is difficult for most elevator managers to resist. Commission futures merchants tend to regard their country elevator accounts as generally speculative in establishing margin requirements. Third, there is need for a better understanding of the use of futures markets by interior warehousemen. There is a lot of genuine misunderstanding and an even greater lack of appreciation of the opportunities to improve operations presented by futures trading.

**Interior Merchants**

Interior grain merchants are those firms located in the main surplus grain regions. This is specially true for areas not directly tributary to terminal markets. They are most numerous and of greatest importance in the surplus grain producing areas of Illinois. The fundamental reason for the development of interior merchandising is the great diversity of flow of grain. As the direction of flow became more diverse in the western part of the North Central Region, additional interior merchandising points developed.

These people are merchants in the purest sense. They do not receive, store, ship, or, for that matter, even see the commodities they handle. Their physical equipment—operating plant so to speak—consists of a telephone, desk, set of books, and, sometimes, a price quotation ticker. Their primary asset is their merchandising skill; they live by their wits.

The interior merchant buys, takes title to, and sells grain. On the buying side, he provides a market outlet for the grain purchased by country elevators. On the
serving side, the merchant provides supplies for processors, terminals, and exporters. A key consideration in the success of the interior merchant is that he must stay continuously in the market. He serves as a clearing house of information with news of the markets to the country and news of the country to the markets.

In large measure the merchant makes the market, standing as he does in the middle, so that he can see both the supply and demand sides. His actions and information have important effects on the actions of speculators in futures markets and so they influence the price level. More importantly, the operators affect price relationships over time and space. More than any other group, the interior merchants establish the structure of the grain price surface by buying grain when and where it is cheap and selling it when and where it is dear.

Merchandisers are arbitragers. They do the job of satiating the demand for consumption and the demand for inventory. This entails movement of the commodity from locations of supplies to points of use. Reconciling these divergencies in demand is a complex and intricate operation. Grain is produced in thousands of locations and is consumed all over the world. The relationships of prices at different locations guides the flow from points of production to the points of use. The specific decisions about where and when to send any given lot of grain are made by merchants on the basis of existing and prospective price relationships. They buy and sell in an attempt to make a profit. These merchants deal in large quantities and their gross margins are quite small in relation to the variation in the level of grain prices. They must either buy and sell simultaneously or hedge to avoid the price level risks that they are neither able nor willing to assume.

It is possible for merchants to limit all transactions to cash grain, and in large measure they do, but they also hedge. They hedge because they judge that merchandising profits can be increased by hedging; that the relationship of prices will change in their favor during the time that they are hedged.

For example, a merchant may find producers and country elevators offering large quantities of a commodity. He judges it an appropriate time to accumulate stocks from which he can supply processors, terminals, and exporters. He probably cannot sell as rapidly at advantageous prices as he purchases so he hedges. As he gradually works off the inventory he buys the offsetting futures contracts. Note again that futures contracts stood, for a time, in the place of cash transactions.

On the other side, merchants may sell ahead and buy futures as price level protection. For example, an exporter may buy a large quantity, as much as one million bushels, to cover part of a sale. This is more than the interior merchant can expect to buy in cash markets immediately. He covers by buying futures and liquidates as the cash commodity is gradually accumulated.

A merchant may conclude well before the season begins—e.g., in January for
corn—that the new crop cash price (October–November delivery) is high in relation to new crop futures (December). He sells cash for harvest delivery and buys new crop futures to hedge. In this case he is arbitraging between current inventory demand (typically importers in other countries) and the next year’s production. He is short the basis in an attempt to profit from an expected subsequent decrease in cash prices in relation to futures.

Another game these people play is to use the time lags in the marketing process as storage space. Suppose that a farmer goes to his local elevator and sells 10,000 bushels of corn that he has stored on his farm. The elevator, in turn, sells to a merchant and the merchant hedges. The farmer arranges for transportation and delivers the corn ten days later. The elevator orders rail cars in and loads them. This takes another ten days. With the cars sealed, the elevator draws a sight draft on the merchant and the merchant has some money tied up but still holds title to the corn. He orders the corn shipped as far as possible, say the east coast. In the leisurely process of the railroads, he will be notified several weeks later that the corn is approaching destination. He sells the cash corn to an eastern export house and removes his hedge. In the usual course of events the basis will have narrowed during the 30 day or so time lag and the merchant will have earned a carrying charge without the cost of space operation; he will have used a phantom elevator. Spread over enough bushels, this can be quite lucrative. But, again, life is not so simple. As he buys from the elevator with these happy thoughts, the elevator may tell him the corn is loaded and ask for billing instructions, having played the game himself. Or the exporter may know the corn is enroute, realize it has no feasible alternate destination and offer a low price, resulting in a loss to the merchant. But there is enough in this kind of operation that merchants tend to operate out of long cash—short futures positions after the peak of harvest is past.

The operating margins of interior merchants—the difference between the prices that they are offered and that they bid—are quite small—too small to be profitable. If they were wide enough to be profitable the users would find it profitable to buy directly from the country or the country would find it profitable to sell directly to users. Interior merchants have commented that they sometimes lose money or break even on three quarters of their trades but make enough on changes in price differences on the balance to stay in business. Casual observation of their living standards suggests that they manage to stay in business at favorable levels of return. But they live by their wits.

In these several illustrations individual transactions have been isolated. In practice, the matter is more complex. Merchants buy and sell continually, attempting to buy cheap and sell dear. Because favorable purchases and sales only occasionally occur at the same time, futures transactions are made against sales until purchases can be made and against purchases until sales can be made. Actually, of course, only the net positions are hedged.
As described here, the merchants are closely hedged so that they are not subject to risks of price level change. But they do most of their cash business before the opening and after the close and so cannot avoid market positions. Do they prehedge or wait to hedge? The answer depends upon how they feel about prices at a given time. When they are totally uncertain they try to do half one and half the other or to offset cash purchases with cash sales and vice versa. But they are not always totally uncertain and so lean one way or the other. Sometimes they are fairly certain and lean heavily one way or the other. Under some circumstances they take substantial market positions, speculating in price level. There are times when they are firmly convinced that farmers will not sell below a certain price and are willing to go long futures when the basis between this floor price and the futures is narrow. On the other hand, they sometimes sense that the country will sell large quantities should the price rise to a certain level. At prices above this level, normal basis taken into account, they are willing sellers of futures. These actions sometimes put brackets around futures prices for protracted periods of time. But they sometimes make mistakes and are forced to liquidate hurriedly, resulting in fairly sharp changes in prices.

The positions that merchants take are much smaller relative to their volume of operations than those of country elevators. Their gross margins are very small and their operating capital is small relative to the volume handled. Thus, their risk absorption capacity is small. They are not in a position to finance major decreases in price and so take small losses quickly and content themselves with small profits. They are price making forces over small ranges of price but not major ranges. The market positions that they take are sometimes in cash grain and sometimes in futures.

**Ingredient Merchants**

The kinds of trading activities and function performed described above are similar to, and thus examples of, activities of merchants trading in other kinds of commodities. One other kind is feed ingredient merchants. The list of ingredients used in the manufacture of compounded livestock feeds is quite long, including five kinds of oilseed meals, fishmeal, animal by-product protein, wheat millfeeds, corn gluten feed and meal, brewers dried grains, bone meal, alfalfa meal, and various grains. Excepting the grains, alfalfa meal, fishmeal and soybean meal they are by-products of various agricultural product processing industries. The most important ingredients in terms of values and cost are corn and soybean meal. There are a lot of processors of various kinds and many mixed feed manufacturers. The ingredient merchants buy from processors and sell to feed manufacturers. They are locators of supplies and markets and, for most ingredients, operate on generally understood and accepted margins. The grain trade with feed manufacturers is handled by the grain merchants.
Soybean processors have soybean meal sales departments. They sell to feed manufacturers when they are the best outlets at the time that the processors want to make sales and to the ingredient merchants when they are the best outlet. The converse is true of the feed manufacturers' ingredient buyers. Thus, the ingredient merchants stand in between two sets of specialists, carving out an income. One function they perform is the convenience one of locating and servicing markets, of matching supplies to requirements, furnishing market information, and routine shipments to minimize transportation cost. A second function is the bridging of time gaps between sellers and buyers. The sellers time their offers out of one set of considerations such as soybean purchases and margins in the case of soybean meal and the buyers out of another set of considerations such as price and mixed feed sales. The merchants bridge the time gaps, sometimes accumulating inventories and sometimes committing inventory they do not own. They, too, are true merchants in that they have no physical facilities beyond a telephone, desk, and set of books.

There is a large volume, active futures market for soybean meal at the Chicago Board of Trade, started in 1951. For some years prior to that time there was a moderately active futures market in soybean meal and cottonseed meal at Memphis. For many years there was a wheat millfeeds market in Kansas City but trade died out. A millfeeds market was attempted in St. Louis but it failed to get off of the ground. There is a fishmeal market in New York but the volume of trade is quite small.

Feed ingredient merchants make extensive use of the soybean meal futures market. They hedge their purchases and their sales in futures. They spread between delivery months as a further means of smoothing out the time gaps between purchases and sales by manufacturers and users. They make and take delivery when they judge that forthcoming changes in basis will make these operations profitable. The essence of their operations in futures is basis speculation. They make purchases of cash forward meal and hedge when they judge that current selling pressures have forced prices below the levels relative to futures that will prevail at a later time and they make cash forward sales when they judge the opposite to be true. This kind of use of futures makes it possible for the merchants to maintain an ownership inventory out of which they can sell or a backlog of sales for which they can later make purchases.

Much of the activity of feed ingredient merchants is in the arrangement of the details of trades. Processors store little meal; most is loaded directly into railcars from the production stream and must be shipped immediately. Soybeans are processed in transit so that the destinations of meal and incoming locations of soybeans are interrelated. Meal has different values depending upon the destination that it can go to and yet recover a part of the inbound freight on soybeans. The upshot is that processing plants allocate shipments in a pattern that is related to the pattern of origin of soybean receipts. They must work out
shipments schedules by specific time and kind of freight billing in advance of loading. They like to establish the specific prices as well. For example, in the latter part of March a processor offers a large quantity of “fully unrestricted” meal for scattered April shipment, at $140.00 per ton. His plant, his price, or his billing may not fit the bids of the feed mixers then in the market. A merchant buys it, and he then sells it, gradually, some here and some there, fitting it in to the production requirements of several users, both large and small. He tends to the details of shipment, exchange of money, quality adjustments, etc.

How do futures fit into this? The processor may have sold meal futures against an inventory of soybeans well in advance of March as part of a process of establishing a processing margin. When he makes the specific cash sale he has the meal part of the margin tied down tight and buys his futures back. The merchant, who is now long cash meal may hedge by selling May (or some other delivery) futures. He may sell the cash meal (or part of it) on a basis. A feed mixer may like the origin and the timing but not the price. He may agree to pay the May futures price on whatever day he elects prior to the arrival of the meal at plant. When he says “now” the absolute price is fixed and the merchant buys in his short position. It may be that the feed mixer already holds a long position in futures. In this case the merchant and mixer may exchange futures “ex-pit.” In “ex-pit” transactions the brokers agree to report identical prices to the clearing house without actually executing the trades. Under the rules this is permitted only when there is an accompanying cash transaction. It may also be that the mixer, instead of saying “now” and letting the merchant buy futures, prefers to buy May futures and exchange. If, in fact, the merchant has sold July instead of May he is in the position of spreading back into May to make the exchange.

Obviously, the possible complications of these people trading futures against cash positions are nearly endless. We have tried to keep the example simple. In addition, this is an isolated transaction that is but one part of the total cash-futures positions of all three. The use of futures by merchants is complex and requires a high degree of specialized knowledge and skill.

“Pricing” by users, not only in soybean meal but other commodities as well, sometimes results in quite volatile futures prices. The merchant who is short futures is short to speculators and the user is buying from speculators. In situations of short supply of the spot commodity, the speculators may be quite difficult to bargain with and the user, especially if he has over-waited hoping for a lower price, in a nearly defenseless position. He can either pay up or go without. In these situations there is a marked tendency for the users to find a way to give up a car here and car there or delay shipment for a week or two. High and rising prices in a delivery month tend to uncover spot supplies not thought to exist. Such is the role of price and such is the role of the speculator in price establishment.

From this brief description of the activities of ingredient merchants it should
be especially noted that theirs is an arbitrage activity between cash and futures prices and among delivery months and that the risks of price changes are carried within the futures market. Prior to the development of a futures market in soybean meal merchants and jobbers bought cash forward contracts and carried price risks (see Chapter 4). But nearly all of them eventually made price level mistakes large enough to put them out of business; their mortality rate was high. This is not to suggest that the survivors do not take market positions, both cash and futures—they do. Their market positions are small relative to their total volume of operations but they may be absolutely of substantial size. There are occasions, particularly near the expiration of trading in a delivery month, when an individual merchant may hold most of the open contracts on one side of the market. This is a situation they try to avoid because they almost invariably wish to even up and in doing so they find that they are making the market and fouling their own nest. The locals catch them in a nonliquid position and punish them. Both liquidity and security of identity of positions are important to merchants.

The size of positions that merchants take vary in relation to the certainty of their opinions about the direction that prices will take. They, the survivors, are not notably speculative but they are in an excellent position to see both the supply and demand sides of the market and recognize good speculative opportunities. Their price making role is fairly great within narrow price ranges and they are highly skilled in taking advantage of small price variations. They do not participate importantly in major changes in price level.

**Cash Grain Merchants**

The classical illustration of hedging in operation as a risk shifting system is the use made by consignment merchants. To describe it is somewhat pointless as it is almost a thing of the past. Until about the time of World War II most grain moved from country locations to terminal markets for storage, processing, and transshipment. Most grain was tributary, in terms of transportation, to a terminal such as Kansas City, Omaha, Duluth, Minneapolis, Milwaukee, St. Louis, or Chicago. The trading at the terminals was conducted by cash grain commission merchants. Country elevators bought from farmers, placed orders with the commission company at the terminal to sell futures as a hedge, and consigned the grain to the terminal in the care of the commission company. When the grain arrived, it was inspected, usually by the exchange, and a sample brought to the trading floor. There, the buyers for elevators and processors traveled among the cash tables on which the samples offered by the commission companies were displayed and negotiated on basis—so much under for this carlot and so much over for that one. When agreement was reached they looked at the futures quotation board so that the absolute price was fixed. The merchant, also
a commission futures merchant, then went into the pit and bought back the
country elevator hedge. Or, the buyer and commission merchant discussed the
futures positions and sometimes exchanged futures in ex-pit transactions. These
people offered a complete line of service to the country elevator—market
information, cash commission business, futures commission business, and, in
many cases, financing. The commission companies handled sales for a fee,
usually a percentage of the value, the amount of which was set by the exchange.
This process is illustrative of a classical system of cash and futures relationships
and the arbitrage between the two and of a stylized system of risk shifting.

Several things happened to change the system. The flow of grain diversified
so that a small percentage was tributary to terminal markets. This was partly a
matter of decentralization of processing and partly a matter of increasing of
U.S. exports so that grain flowed directly to Gulf and East Coast ports; the
development of inland waterways was particularly important. Second, as com­
munications improved and country merchants became better informed, they were
reluctant to lose control or risk dead-ending a shipment in a terminal. Third, the
system of interior merchandising described above developed and intercepted the
grain. In view of the country's obvious preference for pricing at country loca­
tion the terminal merchants shifted to buying "to arrive" so that this method
replaced consignment selling as the dominant procurement means. Fourth,
terminal elevators vertically integrated forward into exporting and backward
into ownership and control of country facilities. Fifth, services were overpriced.
The exchanges had set the consignment sales commission rate and when the
shift was made to "to arrive" purchasing, they regulated this rate as well. But
the country merchants would do it cheaper and by-passed the terminal mer­
chants to sell directly to the terminal elevators. The "to arrive" rules were
eventually dropped but not before the damage was done. This is not to suggest
that the rates were high enough to be outstandingly profitable to the merchants;
they were not. Rather it is to suggest that the interior merchants make their
money out of skillful trading in price relationships and that a competitive
pricing system is more ruthless in establishing handling margins than is a trade
association.

The principal reason for introducing this discussion of cash grain merchants
it to call attention to the dynamics of the use of futures markets and to broaden
the concepts of the use of futures markets from the classical textbook de­
scriptions.

Terminal Elevators

In discussing independent terminal elevators we are again looking at the
activities of a dying breed. Their numbers and importance have decreased
because of changes in the flow of commodities such that terminal markets are by-
passed and they are losing ground to large, vertically integrated merchandising-warehousing firms that operate on an international scale. Operational costs of terminal elevators are higher than their country counterparts so that facilities are not replaced as they wear out, burn down, or become obsolete. Consideration of their activities is useful because it isolates and simplifies some futures trading activities.

Terminal elevators are the classic hedgers. They are located at the delivery points so that it is the stock in their warehouses that is interchangeable with futures contracts during the delivery months. They are both merchants and public warehousers so that part of the inventory in their houses is their own and part is out on warehouse receipts owned by merchants, processors, exporters and speculators. As we have seen, they make the key decisions of delivery or nondelivery that affect basis and interdelivery month price spreads for stored commodities. They are merchants who buy and accumulate reserves during periods of inventory buildup and who sell and supply markets during periods of inventory liquidation so that their decisions are important in determining the amount of inventory accumulation. Their decisions are based upon existing and anticipated price relationships.

These differences are the market price of storage. This price is paid indirectly by the speculators because they are long the contracts that the elevator operators hold as short hedges. Thus, it is the speculators who make the inventory decisions. Inventory is accumulated when speculators are willing to pay enough more for distant contracts than nearby to encourage accumulation and hedging, and inventory is liquidated when speculators will pay little more or even less for the more distant contracts. It follows that an objective of terminal elevator operators is to maximize carrying charges while an objective of speculators is to minimize carrying charges. They are natural opponents in the make and take delivery contest. The thinking of terminal elevator operators is described by Ted Rice, Vice President, Continental Grain Co.1 “Typically, we make delivery on a futures contract when we are unable to merchandise the cash article at as good as a delivery basis. To be frank and realistic, we seldom make the delivery if we believe the grain will be ordered out. Usually the recipient of the delivery does one of two things: (1) he pays for the warehouse receipt, leaves the grain in our house and starts paying us carrying charges, or (2) he retenders, i.e., he sells out his long futures and passes the delivery to someone else. If the grain remains in our house we are: (1) relieved of interest and insurance costs and (2) are paid 1/20 cent storage per bushel per day. If the grain is retendered day after day it tends to weaken the nearby contract relative to the distant. As carrying charges are widened, we will tend to buy the nearby and sell the deferred contract. We recapture our grain and have been able to rehedge it in the next deferred contract at a better basis than was possible prior to delivery.” Such is the

game plan but note the sentence. "To be frank and realistic, . . ." The defense
the speculator has is to take delivery and order grain out.

Terminal elevators tend to be pure hedgers in the sense that they maintain
balanced long and short positions. Terminal elevators hedge because they must
if they are to operate at a volume consistent with their available space. Elevators
are large and are the more profitable as they are kept the fuller. A decline of
five cents per bushel on the 10 million bushels of grain that may be in an
elevator is $500,000. The financial structure of terminal elevator companies
will not bear this kind of risk and if it could, the elevators would elect to em­
ploy the capital in expansion of their ordinary merchandising business.

But, terminal elevators cannot make money storing commodities on a hedged
basis. Their costs are higher than the carrying charges usually offered by the
price relationship structure. They are not as high as a full carrying charge as
calculated by tariff, interest, and insurance so that they make money on grain
they have out on delivery. They are indeed pleased to have grain out on delivery
when they are fairly certain that it will not be ordered out. This is why we say
that the defense of the speculator is to take delivery and order grain out. To
take delivery and hold can only cost him money. The essence of the business of
terminal elevators is merchandising on a basis. Their success is determined by
their skills in merchandising and by the volume that they are able to put
through each bushel of capacity.

They attempt to buy grain to move into their space at net cost of less than the
futures in which they hedge and to sell for local consumption or out shipment
at a net price higher than the futures. They make money on some trades and
lose on others with their success dependent upon making mostly profitable
trades and on making a large number of trades. Their losses on space operation
must be more than offset by merchandising profits. The more profitable mer­
chandising trades they can make, the wider the overhead cost of space operation
can be spread. Thus, success is dependent upon throughput. An elevator with
an annual throughput of eight times its capacity is invariably more profitable
than one with a throughput of three or four, etc. Operators have said: "Tell me
the throughput of an elevator and I will tell you its profit." This is an over­
statement because there are a lot of ways to move grain through unprofitably
but the generality is true.

We should not leave the subject of terminal elevators with the notion of pure
hedging as is developed above. There are variants. They have a selection of
delivery months in which they can hedge. As the purest of hedgers they must
hedge in the delivery month in which they expect to merchandise the grain out,
typically nearby. But if the spread between that month and a more distant one
appears, to them, as if it will narrow they reach further out, expecting to pull
hedges in closer as the spread narrows. The fact is that they spread back and
forth fairly continually.
Spreading opportunities sometimes become sufficiently enticing that hedges are placed outside of the crop year pertinent to the grain being hedged. For example, September soybean futures tend to be a new crop month, that is, harvest is usually early enough to make Chicago delivery by September 30. This tends to finally force September down to only a moderate premium over the November. There are occasions when September is high in relation to November during late spring. If the elevator operator is firmly convinced that the spread is out of line he is tempted to place his hedges in September even though he expects to merchandise his cash soybeans out in June or July. Or if the purely new crop delivery November futures is under the July by substantially less than a usual carrying charge from November to the subsequent July and new crop prospects are favorable, the operator may place hedges against old crop soybeans in the November. In this case, he expects the normal backwardation from old crop to new crop to develop. He will not do this willy nilly but will look carefully at terminal receipts, deliverable stocks, and prospective outshipments in formulating his judgment. The point here is that terminal elevator operators do form speculative judgments about prospective changes in price relationships and wander from purely hedged positions.

On occasion they wander to other markets in placing hedges. Elevators in Minneapolis or Kansas City may place wheat hedges in Chicago futures rather than at the delivery point of the cash wheat that they are hedging. Elevators at Chicago also sometimes hedge in the other markets. The Chicago hedges placed in the other markets are there because the operators expect a favorable change in price relationship—there is no other reason to go outside. Placing hedges in Chicago from Minneapolis and Kansas City may be the result of expecting a favorable change in price relationships but is much more often the result of insufficient liquidity in the home markets. Volume of trade at Kansas City and Minneapolis is often so small that large amounts can be sold only at severe price discounts. The hedgers also know that even though they may be able to place hedges they are apt to encounter difficulty in getting back out when the cash wheat is sold. They sometimes prefer the risk of unfavorable price changes between markets to the dangers of a nonliquid position in local markets. Liquidity is important to terminal elevator operators because they must be able to make large volume trades quickly.

Finally, while they are not large relative to the total volume handled and are not frequently taken, terminal elevators do take open market positions in both cash and futures. In the first place, they do most of their cash business outside of the trading hours of the exchanges and are thus necessarily prehedged or hold open cash positions—long or short—overnight. They must estimate how much business will be done and take appropriate actions in futures. They may make a careful estimate and act on it but they have a tendency to add a bit "to be on the safe side." The "safe side" toward which they lean is invariably in line with their price expectations.
The out-and-out price level speculative positions that terminal elevators take tend to occur either at the peak of the harvest movement or near the end of the crop season. When prices are low at harvest, and the movement appears nearly over, elevators sometimes delay hedging purchases in anticipation of a post harvest recovery. Near the end of the crop year—say May in wheat or September in corn or soybeans—cash prices tend to become quite erratic relative to futures. Occasionally an open position appears less risky than a hedged position. More often, the elevators are in a good position to know how much of the remaining terminal stock has been sold for outshipment prior to the expiration of the last old crop futures and act on the basis of this knowledge. When they have a good basis for thinking that essentially all of the stock is scheduled to move they sometimes hold cash inventories unhedged. They do this to make a profit but they are quick to point out that it also renders a service to the speculators who are imprudently short by making some supplies available to them. They also render a service to the market by holding some supplies in position so that wildly gyrating prices that discredit markets are avoided.

**Exporters**

Exporters buy grain, direct its movement to ports, load it aboard ships, and supervise its delivery to destination. Most grain, other than Public Law 480 shipments, is sold CIF (cost, insurance, freight) destination ports. P.L. 480 shipments are made FOB (free on board), port of shipment. Exporters buy from terminal merchants and elevators, interior merchants, and country elevators.

In some seasons of the year they accumulate supplies at a faster rate than they sell them and in others they sell faster than they accumulate. Thus, they sometimes have net long cash positions. These net positions are hedged in futures. Sales are always accompanied by hedge lifting in futures markets. The timing of hedge lifting against a large sale is an interesting tactical exercise. Large export sales are generally known in the market and the futures activities of exporters are closely watched by other traders. Their problem is to get the hedges out of the market without affecting the price. The ease with which they accomplish this feat depends upon the liquidity of the market. The Chicago market is quite liquid and hedges are fairly easy to remove without price effect, but the Kansas City and Minneapolis wheat markets are not liquid. Consequently, exporters favor placing their hedges at Chicago.

One device that exporters use is the ex-pit exchange of futures. If the exporter is short futures and must buy in hedges when he sells, it may be that the purchasing importer is long futures. If so, they arrange an exchange and cancel the futures they hold without going into the pit.

Exporters also remove hedges in anticipation of sales so that when sales are actually made, they are nearly, if not completely, through with pit activities.
The announcement of export sales often has an effect upon prices in the futures market. Several export firms may be making offers, vying for a particular lot of business; all of them may remove part of their hedged positions in anticipation of getting the business. These maneuvers may tend to influence market prices in an opposite direction from that which would normally be expected as a result of export sales. When a sale is actually made one of the firms has some more hedges to buy, but the others need to rehedge. Thus, hedge sales following a major export sale may increase, putting prices down. Similarly, speculators know of pending export business and they buy in anticipation of hedge removals. This is sometimes overdone and prices recede.

Exporters play an important role in equalizing the price of grain spatially, particularly on a world wide scale. This role is well described in a paper by Rice of the Continental Grain Company, in which he said, in part:\^\textsuperscript{2}

"Somebody asked me how we determine the ‘basis’, i.e., the premium or discount of grain relative to a futures contract at a given point. I should like to give you a rather simple illustration. I will use corn for my example because it avoids the complication of grades and class differences inherent in wheat. For purposes of simplicity of calculation some of the values in the example are slightly different from actual. Remember that ocean freight rates including the differential between Gulf and St. Lawrence change constantly.

"Today, there is a ‘world price of corn.’ I shall not try to demonstrate whether the U.S. makes world prices or the world price determines the U.S. price. It’s like trying to prove which came first, the chicken or the egg. Suffice it to say the prices are interdependent.

"Let me emphasize that these are only approximately correct since I have rounded transportation costs. Also, let me emphasize that barge and ocean freight rates fluctuate. (For example, ocean freights have just about doubled since early summer.) Further, the prices I have calculated are for prices to an elevator usually on a barge or rail car, not to a farmer. Elevator margins vary—usually widest at harvest and narrower as elevators try to clear their space. All I have tried to show is that there are logical ranges of values relative to Chicago at a number of points. (Buying basis vs. selling basis.)

"Let’s say Chicago December corn futures are $1.23. Let’s assume during harvest we can buy corn delivered at our Minneapolis river elevator at 9 under or $1.14. Let’s also assume we chartered a barge to New Orleans for 13¢ per bushel. If New Orleans is selling at 9 over Chicago or $1.32 our net selling price Minneapolis parity would be $1.19. Our margin would be 5 cents per bushel.

"But what if we are buying corn faster than we can sell it? We sell futures at $1.23 and buy cash at $1.14. We are long the basis or premiums at 9 under. We have eliminated our risk only if both fluctuate in equal magnitude and direction.

\^\textsuperscript{2} Rice, S. T., "Remarks at Oklahoma State University," January 8, 1965.
The skill of the grain merchant lies in being on the right side of the basis changes more often than on the wrong side."

As a general proposition, exporters find themselves more comfortable merchandising out of a long cash-short futures position than the other way about. Export sales are made in large quantities, oftentimes for prompt shipment. Accumulation of grain must be made in relatively small units and at the gradual rate that primary producers elect to sell. To cover a large sale quickly in cash markets is difficult. Thus, exporters attempt to build up inventories in interior locations so that they do not force a tightening of basis with hurried purchases when sales are made. Futures markets offer much greater liquidity than do cash markets.

Following harvest, exporters are usually able to maintain cash positions from which they can merchandise. However, during several months preceding harvest, sales of cash for new crop shipment positions tend to exceed sales by primary producers for new crop shipment. The exporters cover the short cash positions by buying futures so that the long open interest of reporting hedgers builds up sharply. The size of this pre-harvest buildup of open interest is proportional to export sales so that some indication of the size of exports, particularly corn and soybeans, during and immediately following harvest is available during the summer months.³

**Integrated Merchants**

As a final note in this discussion of warehousemen and merchants, we should point out that this compartmentalized description of the series of processes is only partially accurate. There are independent merchants and warehousemen at all stages but there are also large integrated merchant, warehousing, and export firms that cover all of the kinds of activities. They own country, subterminal, terminal, and export elevators. They operate interior acquisition points and terminal merchandising offices. They have sales offices and sales agents in foreign countries. They are members and clearing members of commodity exchanges. They have their own brokers on the exchange floors. They are licensed commission futures merchants, handling accounts for independent merchants, processors, and, to a limited extent, speculators.

Some of these large firms are compartmentalized into separate profit centers. These usually handle futures positions on a profit center basis so that one company may have both long hedges and short hedges in the same market. At the same time, they have both long and short customers positions. While floor traders and brokers watch the actions of brokers who handle trades for such firms, little can be told from their activities about their market positions.

Other integrated firms funnel all cash positions into a central futures office

³ Note the changing structure of the corn open interest shown in Chapter 6.
where the decisions about the placement of hedges and spreads are made and from which trading instructions are issued. Long and short cash positions are offset and only the net positions are hedged.

Stocks in delivery positions and the effect of these on basis is of greater significance to the large integrated firms than their effect on the profitability of space operations at the delivery markets. Basis and spreads at the delivery points affect hedging profitability at outside locations. It is therefore desirable, from the point of view of holders of outside space, that stocks be maintained at delivery markets. We have noted that operating costs tend to be higher at terminal markets than in country locations. We should also note that there is a tendency for terminal space to gravitate into the hands of the large firms who control large amounts of outside space. It is sometimes said that they are the only ones who can afford to operate in terminals. The implication is that terminal space is used to increase the profitability of outside space and basis operations generally. This is an involved question about which no precise judgment can be made. It is a consideration that exchanges take into account in establishing contract terms.