

Futures as a Corporate Tool

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It is an honor and privilege for me to be here today to speak to you. The topic I have been asked to address—Futures as a Corporate Tool—is a large but timely subject.

The past few years have seen an unprecedented volatility in cash commodity prices around the world. New risks for businessmen have been uncovered, and old risks have been rediscovered. More attention is being paid to the use of the futures markets as a tool for managing economic and financial risks.

The use of futures markets has also come to the attention of legislators and policy-makers. As all of you know, the Commodity Futures Trading Commission Act of 1974 has been passed and signed into law. It embodies new regulatory authorities, a new regulatory body, and new attitudes toward futures markets. The initial decisions made by the new commission will be of great importance. They will shape an institution valuable not only to industry but also to producers and consumers. These developments will deserve our careful attention as they unfold in coming months.

The subject of my speech does not deal directly with this new law. Of necessity, however, it will touch on several of the areas that will be affected as that law is implemented. This will be true not only for the agricultural commodities that have a history of regulatory supervision but also for the many other commodities to which regulatory authority is extended under the new act.

Industry Structure

My observations and conclusions are drawn from my own corporate experience in futures markets for agricultural commodities. Many of the underlying economic forces buffeting farm products, however, also shape the price experience of nonagricultural commodities. For this reason, I hope my

remarks will also prove relevant to those of you from nonagricultural businesses.

Futures markets are available to a wide range of traders. Included in this group are the many business activities involved in marketing and processing farm products. Indeed, the industry structure that has grown up over the years to perform these economic services is a complex one. Some understanding of this industry structure is necessary to understanding futures markets as a corporate tool in managing and minimizing risks.

The first tier in this industry structure is the country market. It is made up of thousands of country elevators scattered across America's rural producing areas. These elevators are usually owned cooperatively by farmers or by individual rural businessmen. They constitute the first market for farmers' production, acquiring grain in several ways. They can purchase grain outright from the farmer when he seeks to sell. They can store grain for farmers while permitting them to maintain title. They can accept delivery of the grain on an unpriced basis with the farmer fixing the price at a future date.

Country elevators employ all of these devices in order to absorb the harvest rush and begin the process of spreading it out more evenly to meet steady, year-round consumer demand. Country elevators, however, are not able to meet these needs alone. They depend, in turn, upon successive levels in the industry's structure to provide steady cash markets and flexibility in distributing the farmer's grain.

The next important tier in this industry structure is the terminal grain market. The principal terminal grain markets in the United States have developed at major transportation centers—such as Minneapolis, Kansas City, St. Louis, Omaha, and Chicago. Three of those cities are also locations for agricultural commodity futures markets.

Several economic functions are served by terminal markets. They are crossroads for major transportation networks. Terminal markets typically can both receive and ship grains forward by truck, by rail, or by barge.

Second, substantial capital investments in storage facilities permit these terminal markets to become major collecting points for grain. This not only softens the harvest rush but also permits accumulation of grains in sufficient volumes to support use of the most efficient mode of transportation. Consequently, terminal markets provide much of the flexibility necessary for efficient marketing of grains and oilseeds under modern conditions.

The next stage in this industry structure might be called "the transformation market." This market includes a number of parties: the miller and baker who transform wheat into flour and flour into bread, the feed manufacturer who transforms ingredients into efficient feed formulations, the processor who transforms soybeans into meal and oil, the miller who transforms corn into syrups and starches for industrial food uses, and the exporter who transforms domestic farm products into overseas shipments in return for badly needed foreign exchange.

Some of you may be surprised to find all of these marketing alternatives grouped at the same level in the industry's structure. They belong together for a fundamental reason. Once grain begins to move toward one of these units in the "transformation" market, it begins to fall out of location for economic use in other "transformation" markets. Grain that has been moved to the Gulf for export is poorly suited for use by the Ohio wet corn miller.

Consequently, different "transformation" markets must compete against each other at this third level of the industry's structure. The exporter, the processor, the miller, and the feed manufacturer compete against each other in attempting to attract grain from terminal and country markets.

Cooperatives and individual entrepreneurs can be found at terminal and transformation markets as well as at country markets. The volumes, capital requirements, and range of marketing problems, however, make the corporation the most common business entity in terminal and transformation markets.

Cargill has entered both terminal and transformation markets. It has sought to grow in these markets by improving the quality and reducing the cost of service to farmer and consumer alike. In order to meet this goal it needs and uses futures markets as a tool for managing financial and economic risks.

Futures markets offer an effective tool for managing those risks in two principal ways. First, they allow cash merchants of grain and oilseeds, like Cargill, to convert a volatile price risk into a more stable, predictable risk of price relationships. Second, futures markets permit processors of soybeans, corn, and wheat, like Cargill, to establish board margins for a processing activity. This creates an opportunity to secure viable returns even when cash interest at such levels is lacking.

Each of these uses of the futures market is a complex and very important one. Each could easily be the subject of a seminar as long as this entire conference. In a limited period of time I can only touch briefly on these different uses of futures markets. I also hope to convey some sense of their importance not only to a company like Cargill but also to the industry and the producer and consumer served by that industry.

The price or value placed upon a cash commodity is a function of at least four factors—type of grain, quantity, location, and time of delivery. Each of these factors influences the price for a commodity. Each also represents a potential adverse price risk. Each, therefore, must be incorporated into the merchants' thinking when considering how best to hedge through futures markets the total risks of adverse price movements.

Passage of the new Commodity Futures Trading Commission Act raises the question whether cash grain merchants will be able to use futures markets to hedge against all of these potential price risks. The new act delegates interim authority to define bona fide hedging to the Secretary of Agriculture and final authority to the new Commodity Futures Trading Commission. The final definition of bona fide hedging promulgated by the new commission, moreover, will extend to all commodities placed under the commission's regulation.

Hedging Price Risks of Cash Grain Merchandising

Under the existing definition of hedging, the cash merchant can hedge his long and short cash positions separately. Some have criticized this definition, arguing that it is subject to abuse. They argue that cash traders should “net out” their cash positions, hedging only the net volume exposure left.

Since cash merchants confront price risks of timing and location as well as volume, however, they need the flexibility of the existing definition. If prevented by a “netting out” requirement from hedging risks of timing and location, large cash merchants and processors would remain exposed to serious risks of adverse price movement. Such risks and resulting greater uncertainties would lead to wider margins. Those who would eventually pay for these greater uncertainties would not be individual or corporate merchants. The people who would be harmed ultimately by a “netting out” requirement would be consumers paying higher prices and farmers receiving lower prices.

These conclusions can be illustrated by showing how futures can be used as a corporate hedging tool. A hedge is, very simply, an offset. The perfect hedge would be simultaneous cash purchases and sales of the same commodity for delivery at the same location at the same time. This almost never occurs in practice. As a result, an important function performed by cash grain merchants is to begin to accumulate grains and oilseeds at harvesttime, even though they may have few if any cash sales on hand at that time.

A merchant may know however, that there are good opportunities to sell corn next May. Considering the costs of financing, risks of grain going out of condition, and costs of physical storage, the merchant can calculate that his cost of carrying corn from November until May will be 30 cents per bushel. Today’s interest costs are about 3.5 cents per bushel per month, and storage costs are about 3 cents per bushel per month.

Now, assume that the nearby corn futures—in this case the December futures—is trading 12 cents below the May futures. This represents only 40 percent of the merchant’s cost of carrying corn until May. Under these circumstances, there is no economic incentive to carry corn until next May.

In such an instance, the cash merchant would want to hedge his cash corn purchases by selling December corn futures rather than May corn futures. Selling the December rather than the May futures offers the cash merchant the best alternatives. If the spread between December and May futures does not widen, he can liquidate his inventory through a nearby cash sale. If it does widen he can move his hedge forward as he carries grain for later sale.

Similarly, if the merchant does eventually receive an offer to sell corn for May delivery, he would want to make an offer basis the May futures under these circumstances. He would do so by selling cash corn for May delivery and hedging that sale by buying May corn futures. This provides the merchant a better offset against his May sales obligation than his December cash purchase would be.

In this example, hedging cash transactions in futures not only reduced risks of adverse price movement but actually facilitated cash business. The difference between December and May futures did not cover full carrying costs. The

capacity to hedge the cash purchase and the cash sale each in its appropriate time frame, however, allowed the merchant to undertake both transactions with minimal risks.

Futures markets also offer a tool for hedging price risks arising from locational problems in cash grain merchandising. Farm commodities are harvested in a number of different geographical regions. As merchants acquire grain in these different regions, they must decide to which markets they should ship. Since transportation costs accumulate once grain begins to move, such decisions quickly put some grains out of position to serve some markets. As a result, relative availability of grain for different markets changes.

These shifts in the balance between supply and demand for grains at different locations show up in the relationship between cash grain and futures prices. Traders refer to this relationship as “the basis.”

This introduces one element of commodity trading that is extremely important though difficult for many to understand. A merchant’s inventory and cash purchases and sales are predominantly hedged by offsetting futures transactions. This makes the absolute price level for any purchase or sale much less important than the “basis” between cash and futures prices.

For example, assume that a merchant buys 100,000 bushels of cash wheat at \$3.00/bushel and hedges that purchase by selling 100,000 bushels of Kansas City December wheat futures at \$2.80/bushel. The “basis” is the \$.20/bushel by which the cash purchase exceeded the futures price. See Chart 1.

Chart 1

	Cash Wheat (dollars per bushel)	Wheat Futures
Buy	\$3.00 ¹	\$2.55 ²
Sell	2.80 ²	2.80 ¹
Result	Loss: \$.20 ³	Gain: \$.25 ³

¹Cash wheat was purchased at 20 over Kansas City Dec. Wheat. The “basis” is, therefore, 20 over Kansas City Dec. wheat.

²Cash wheat was sold at 25 over Kansas City Dec. wheat. The “basis” is, therefore, 25 over Kansas City Dec. wheat.

³The gross margin is 5 cents per bushel in spite of the fact that the flat-price (cash) market declined 20 cents per bushel.

Now assume that he sells 100,000 bushels of cash wheat at \$2.80/bushel and hedges that sale by buying 100,000 bushels of Kansas City December wheat futures at \$2.55/bushel. The “basis” is the \$.25 bushel by which the cash sale exceeded the futures price. Though the merchant made his cash sale at \$.20/bushel less than his cash purchase, his capacity to hedge these transactions separately yields him a gross margin of \$.05/bushel.

Though a great deal more could be said about the benefits of futures to hedge unwanted price risks, three points deserve special mention. First, futures markets permit cash grain merchants to replace large risks of big changes in absolute price levels with the much smaller risk of changes in the “basis.” Generally, swings in cash prices around futures price levels are smaller and more predictable than fluctuations in overall price levels themselves.

Second, some basis relationships are more attractive to sellers and others to buyers. Careful placement of hedges is needed to match the most attractive “basis” relationship with the merchants’ marketing needs. The merchant who is successful at this increases his opportunities to perform vital economic services efficiently, competitively, and at a profit.

Finally, the capacity to hedge unwanted price risks has historically been important in attracting to agriculture capital needed to finance grain marketing. Increasingly, lenders are likely to insist that traders with access to hedging use it and demonstrate understanding of it.

Fixing and Converting Board Margins in Processing Activities

Futures can also be an important corporate tool for processors. As in grain merchandising, the ideal processing opportunity would be to buy the cash commodity and sell the cash products simultaneously. This would permit the processor to fix his processing margin at the time of the transaction. As a practical matter this is as impossible in the processing industry as it is in grain merchandising. The processor or crusher needs to stand ready to buy soybeans, corn, or wheat when the farmer is most willing to sell. The processor usually cannot find willing buyers for his products at the same time and in the same quantity.

The processor can cope with this by selling commodity futures to offset his cash purchases just as a warehouseman does. Such transactions are not sufficient, however, to offset all of the adverse price risks confronting processors. For these reasons some processors will use futures markets to establish “board crushing margins.” Let me attempt to illustrate this practice by using soybean processing as an example.

The soybean processor’s business is to buy soybeans, process them, and sell soybean meal and soybean oil. He cannot consummate all of these activities simultaneously. He must make judgments about how changing economics in the marketplace will shift crushing margins.

The processor approaches this task by using futures to replace the large risks of changes in absolute price levels with the manageable risks of changes in “basis” relationships. The processor, however, must consider not only the “basis” for his raw material but also for his products. The soybean processor, for example, must consider the “basis” relationship not only for soybeans but also for soybean meal and soybean oil. Consequently, at least two steps are involved in using futures markets to establish a crushing margin.

In the first step, the processor attempts to establish a crushing margin in the futures. He could do this, for example, by buying soybean futures and selling soybean meal and oil futures. Then by projecting the yield of meal and oil from his soybeans at his processing plant, he can calculate a board margin—that is, a margin established by using futures markets rather than cash transactions. The soybean processor will attempt to establish a board margin when he cannot buy cash soybeans or find buyers for cash meal and oil but expects the margin between soybeans and soybean products to move against him over time. See Chart 2.

Chart II

Soybeans (SBs)	Soybean Meal (SBM) and Soybean Oil (SBO)
Buy cash SBs	Sell cash SBM and SBO
Buy SB futures	Sell SBM and SBO futures
Buy Cash SBs/Sell SB futures	Sell cash SBM and SBO/ Buy SBM and SBO futures
Result:	
Cash SBs bought	Cash SBM and SBO sold

The second and equally necessary step is to convert the board margin to a cash margin. This conversion can be illustrated in the following manner. If the processor bought soybean futures, he was in effect staying short cash soybeans. Consequently, he converts this to a cash position by buying cash soybeans and selling soybean futures. Similarly, if he has sold soybean meal and oil futures, he would convert to a cash margin by selling cash meal and oil and buying back the meal and oil futures.

The critical stage in this conversion is the relationship between the cash and futures—the “basis” at the time of the conversion. Converting from a board to a cash margin will depend upon how time and location influence price relationships. Changes in “basis” relationships are more predictable and modest than fluctuations in overall price levels, but converting to a cash margin will not be automatic.

Nevertheless, the opportunity to fix board margins is an important tool in shifting risks of price movement onto those willing to accept them. It provides the processor an alternative to accepting a deterioration in cash crushing margins that is predictable. He can use futures markets to fix a board margin attractive to his business even though he has no opportunity at that time to protect his cash margin. In effect, futures markets offer the processor the opportunity to avoid the deterioration in cash margins that would arise if he was forced to wait for either willing soybean sellers or willing meal and oil buyers.

Contribution to Expansion in Service

Though the operational facets of the use of futures markets are complex and deserve much more discussion, the essential point should now be clear. Both merchants and processors of agricultural commodities—like Cargill—employ futures markets to shift unacceptable price risks onto those willing to assume them. This capacity to reduce financial risks has yielded two results that have enhanced Cargill’s capacity to serve agriculture.

First, futures markets have stimulated development of sharp competition in grain merchandising and processing. Margins have been significantly lower than would have been the case in the absence of futures markets. The result has been a more attractive return to farmers and quality food products available to consumers at lower costs.

Each of these consequences has contributed, in turn, to a steady expansion in U.S. farm production, growth in consumption of U.S. grains and oilseeds here and abroad, and continuing increases in productivity. Futures markets have contributed to agricultural efficiency and helped make U.S. agriculture a

dynamic growth industry. Prudent use of futures as a corporate tool has helped Cargill to compete and to participate in agriculture's expansion.

Second, the ability to avoid undue price risks has allowed Cargill to focus on expanding the physical facilities and improving the services it offers. Physical handling of grains is a difficult and complex task. For example, grains are living organisms, susceptible to deterioration and disease.

To combat these problems, Cargill started a research laboratory devoted to creating and testing new storage and handling techniques. This research yielded the first use of thermocouples and remote reading equipment for checking grain temperatures. This was a major step necessary for detecting potential hot spots in grain stored in large bulk facilities. Cargill also developed and made available to the industry pneumatic probes and pneumatic sampling equipment. Both were important steps in facilitating efficient large-volume handling and storage of grains.

The locational price risks that merchants must hedge against also present physical challenges to cash grain marketing. Transportation has always represented a substantial portion of the final cost of delivering grains and oilseeds to consumers. Cargill has sought to match engagement of locational price risks through futures markets with innovations in handling and transporting commodities. The results have been lower costs and improved services. Let me offer a few examples.

Cargill early perceived the potential economic advantages to farmers in the upper Midwest from the St. Lawrence Seaway. We invested in that potential and constructed an export elevator at Baie Comeau on the eastern, ocean-facing end of the Seaway in Canada. From it Cargill could serve larger, more efficient ocean-going vessels. Accumulation of grains at Baie Comeau in nonwinter months also gave upper Midwest farmers an important northern access year-round to foreign markets. Placing grain in such a remote location would be less attractive without the capacity to hedge.

Introduction of unit-train tariffs and construction of elevators with capacity to load unit trains also significantly altered traditional grain marketing patterns. They offered farmers far from coasts or inland waterways efficient low-cost access to growing foreign markets. As a result, major producing areas in eastern Illinois and central Iowa, for example, were able to share fully in the recent surge in overseas demand for U.S. grains.

The efficiency of unit-train shipment of grain has also meant a great deal to the industry. Our experience shows that unit trains can move two to three times as much grain as similar equipment in single-car service. They also permit more careful scheduling of deliveries at country locations and matching of internal grain shipments with ocean-vessel arrivals. This greater capacity and enhanced logistical control helped the U.S. expand its grain exports from 48 million tons in 1971-1972 to 89 million tons in 1973-74 to meet surging world food needs.

Conclusion

The essential point is that futures markets contribute to corporate development and a healthier industry both directly and indirectly. Futures make a direct contribution by permitting cash grain merchants to shift

unwanted price risks onto those willing to accept them. They also contribute directly by giving processors the opportunity to fix margins through futures transactions when cash buyers and sellers cannot be found.

By providing this security and stability futures markets have also fostered competition in price and service. Those who seek to expand their role in serving human food needs must do so by improving the quality and reducing the cost of their services. In the final analysis, these are attitudes that futures markets have nurtured. Able to manage financial risks through futures, Cargill has been freer to pursue new ideas, new investments, and new management techniques. Such efforts have been designed to achieve growth through lower costs, more timely and reliable services, and opening of new markets to U.S. farmers.

I would like to close on the note that is struck by this search for new markets. America has a vast and productive agricultural capacity. We already consume only about three-quarters of our feed grains, half of our soybeans, and one-third of our wheat. We are currently experiencing tight supplies and disappointing harvests. Those who have been in agriculture for very long, however, understand its changing nature. We must plan for agriculture's future not on the basis of today's situation but rather on tomorrow's potential.

Cargill individually and the grain marketing and processing industries as a whole are doing this. They are in the midst of a major effort to construct new facilities to serve new markets better. The promise for the future is an encouraging one. Today's agriculture is a dynamic growth industry. It offers greater security for farmers' investment, better income opportunities for efficient commercial producers, and a better and fuller use of our farm resources. Futures markets will continue to serve as a vital corporate and industry tool in meeting this promise.

Thank you.

