

AUTHOR'S NOTE

The first venture out with research results to an operational group seems to have been a talk at a grain elevator managers' school in Decatur, Illinois, on December 4, 1950. It was based on research, particularly field studies, at country elevators, soybean processors, grain merchants, and feed manufacturers. It set a pattern of generalizing from specific, descriptive information that seems to have persisted.

FUTURES TRADING AND SPECULATION IN SOYBEANS

CHAPTER 1

My topic is a very broad one. To narrow it down somewhat, it should probably be called "Speculation in Cash Soybeans." There are four subtopics under the general title that I want to talk about: (1) some basic aspects of futures trading and speculation; (2) risk in soybean marketing; (3) country elevator operations in soybeans; and (4) country elevator policy regarding soybean speculation.

SOME BASIS ASPECTS OF FUTURES TRADING AND SPECULATION

A speculator is one who buys something, expecting to sell it later at a higher price; or one who buys something to use at a later time, expecting the price to increase; or one who holds something that is ready for sale, expecting the price to go up; or one who sells something for deferred delivery, expecting the price to decrease. This makes us all speculators in one sense or another.

Grain marketing is basically a speculative business. The prices of grains fluctuate through wide ranges. Grains, including soybeans, are harvested during a period of a few weeks and are consumed at a fairly even rate throughout the year. Some of the soybeans harvested last October will be crushed into oil and meal next September. Someone must own them from the time they are harvested until they are consumed, and that is a speculative proposition. At the outset, let us understand that speculation is an essential part of grain marketing.

ORIGIN OF FUTURES TRADING

Organized trading in futures contracts was preceded by the use of "time contracts" and purchases "to arrive" at substantially deferred times. The first pressure for futures trading seems to date from the opening of the Illinois and Michigan Canal in 1848. By 1850 many corn cribs had been built on the banks of the Illinois River. Corn was hauled from farms to these cribs during the winter months when country roads were frozen and passable.

The corn was held in the cribs until spring, when navigation on the waterways and Great Lakes opened and the corn had dried sufficiently to be storable as shelled corn. These river corn dealers were therefore forced to retain possession for several months. They thus faced two problems: they had to finance the corn while it was in storage, and they had to take the risks of unfavorable price changes between winter and spring. They quickly developed the practice of going to Chicago and hunting for someone to buy corn for spring delivery. The first record of a time con-

tract was found in the *Chicago Journal* of March 13, 1851. It called for delivery of 3,000 bushels of corn in June at a price one cent under the quotation of March 13 for spot corn. The use of time contracts grew rapidly, and the contracts became comparatively standard in their provisions. As early as 1855, it was estimated that all of the corn passing through Chicago changed hands at least one or twice before it was shipped.

While little is known about the identity of the contracting parties, the rather large amount of trading suggests that all of the contracts were not made with grain receivers but that professional speculators were active in the market. The practice of short selling developed early. In March 1863 the Chicago Board of Trade recognized time contracts by providing that any member who entered into such a contract must honor it or be suspended. Rules for trading in time contracts were established in 1865. Interestingly enough, futures trading was forced on the Chicago Board of Trade. The board apparently disapproved of time contracts and stalled formal trading in them for fourteen years. Futures trading started seventeen years after the Board of Trade was organized (1848).

My second point, then, is that futures markets grew out of a need for shifting risks and that risk-shifting systems preceded futures trading and are bound to exist, whether they are formal, as in such markets as the one at Chicago, or whether they are disorganized and informal. It is possible to separate risk bearing from other grain marketing jobs, and systems for doing so evolved naturally.

RISK PREMIUMS

I have talked to a considerable number of feed manufacturers about their inventory policies and find that they build up inventories only when they can buy for less than they expect to have to pay later. People undertake speculation only when they expect to sell or buy later for a profit. It is necessary to pay a risk premium to get people to speculate voluntarily.

Different people or firms require different risk premiums. They vary in their willingness and ability to carry risks. A few people enjoy speculating and will do so without expecting a profit; others will not speculate at all. Some people have a large capacity to absorb losses, and others have little or none; that is, some people can afford to speculate and others cannot. Banks typically disapprove of speculating in grain with borrowed funds.

Generally speaking, firms engaged in doing the ordinary grain marketing jobs of buying, selling, storing, shipping, processing, etc., are not logical risk bearers. They operate on rather narrow margins and so do not have large earnings with which to speculate.

My third basic point about futures trading and speculation is that premiums must be paid to get people to assume risks and that people differ in their willingness and ability to carry risks and, accordingly, in the size of risk premiums that they require.

FUNCTION OF FUTURES MARKETS

The job of futures markets is to provide a system for marketing risks. That system must provide a continuous and ready outlet for the risks that grain firms want to shift by hedging. And it must shift the risks to those people who will carry them the most cheaply. For grains, the futures markets do a good job of performing this function. Good hedging facilities are readily available, and they get the job of speculation done so cheaply that not everyone agrees with me that risk premiums are paid.

RISKS IN SOYBEAN MARKETING

During the past two years or so, I have rather carefully examined risk bearing and risk shifting in marketing soybeans. I studied two crop years in particular, 1947–1948 and 1948–1949. Before discussing country elevator operations in soybeans, I think it may be desirable to look at these general results.

FARMER SALES

In the past, farmers typically sold the bulk of their crop of soybeans at harvest. On January 1, 1948, they held 19 percent of their crop; on January 1, 1949, 34 percent of the 1948 crop; and on January 1, 1950, 28 percent of the 1949 crop. Of these amounts they had to retain 7 to 8 percent for seed and some feed. I estimate that farmers had sold 76 percent of their salable soybeans by the end of the 1947 harvest and 69 percent of their crop by the end of the 1948 harvest. Prior to the 1950 crop year, farmers did not assume the bulk of the soybean risk.

COUNTRY ELEVATORS

Country elevators bought most (95+ percent) of farmers' soybeans. They held a few of them open but sold most of them to processors—some direct, some throughout interior carlot dealers or track buyers, and some through commission firms. Part of the sales to processors were shipped immediately, and part were put into storage for processor accounts. The elevator assumed a relatively small percent of the total soybean risk.

PROCESSORS

Prior to this year, processing capacity exceeded the supply of soybeans. To get enough soybeans to crush, processors had to buy when farmers wanted to sell,

and thus they accumulated large inventories of cash soybeans. They owned an average of about 65 percent of the soybeans during the 1947–48 season and about 58 percent during 1948–49. During 1947–48 they carried only 9.5 percent of these inventories open, and in 1948–49, 15.5 percent. Their open positions were greatest, in terms of both bushels and percent of gross position, before and during harvest.

During 1947–48 they shifted 5 to 6 percent of their risks by hedging in futures markets, mainly at Chicago; during 1948–49 they hedged 14 to 15 percent. The rest of the risks that they shifted were handled through forward sales of oil and meal. Processors had large inventories of soybeans, but they carried relatively small risks.

FORWARD SALES

A relatively small amount of soybean oil and meal is sold for spot or current-month delivery. Eighty-eight percent of the oil produced was sold forward in 1947–48 and 71 percent in 1948–49. In 1947–48, 82 percent of the meal was sold forward; and in 1948–49, 58 percent.

These forward contracts are private treaties just like cash sales except that they are made for substantially deferred times. Currently, soybeans are being sold for delivery this week in December, December–May, and January–March.¹ Around-the-clock sales of meal are standard practice during harvest. In an around-the-clock sale, equal amounts are sold for delivery in each month of the crush year at one price. The December through May position means that equal amounts are to be delivered in each of the six months at one price. This position was selling for \$59 to \$61. Currently, oil is selling for delivery this week, first half of December, December, January, and February through March. All of these positions reflect different prices.

Forward sales of meal are made mainly to two groups of firms: (1) resellers or dealers and (2) feed manufacturers. Almost all of the oil forward contracts are made with oil refiners and users. I think that over 75 percent of the forward contracts were bought by fewer than 10 firms.

¹ See commodity page, fats and oils, and feedstuffs columns, *Chicago Journal of Commerce*.

RISK BEARING

The final evidence of soybean risks in the two years was as follows:

	1947-48 <i>(percent)</i>	1948-49 <i>(percent)</i>
Farmers	29.22	41.63
Oil users	25.97	15.26
Feed manufacturers	21.66	16.29
Processors	6.16	8.40
Country elevators	4.39	3.15
Meal resellers	3.50	2.67
Hedged in oil futures	3.57	2.44
Hedged in soybean futures	2.87	8.25
Oil speculators	1.55	.90
Meal retailers	.82	.61
Hedged in meal futures	.34	.33
Intermediaries	.16	.10
	100.00	100.00

The principal speculators in soybeans were farmers, oil users, and feed manufacturers. The main method of shifting risks was forward sales.

DISCOUNTS

Forward positions typically sell for less than spot delivery. In 1947-48 the average discount per month per pound of oil was .493 cents; and in 1948-49, .248 cents. In 1947-48 the meal discount was 79.4 cents per ton per month, and in 1948-49, \$1.01. The weighted average price of soybeans was 27.5 cents less in 1947-48 and 21 cents less in 1948-49 than it would have been had forward sales been made at spot prices. On November 25, 1950, spot oil sold for 18 cents; December oil, 16 to 16.50; January oil, 15.75; and February-March oil, 15.25. The discount from spot to March first was 2.75 cents. That amounts to 27.5 cents per bushel of soybeans. The meal price was about the same in all positions.

FORWARD SALES AS A RISK-SHIFTING SYSTEM

This development of forward sales to shift risks illustrates perfectly my earlier point that futures markets evolve naturally and are basically a risk-shifting system. When you start a futures market, you do nothing but establish a set of rules and formalize already existing practices.

How good a risk-shifting system are forward sales? I think they are poor. As we saw, they are expensive. Earlier, I said that a risk-shifting system must be readily available, and it must reach those speculators who will carry risks most cheaply. Only

a few people are eligible to buy forward positions, or even know about them. In oil, as I mentioned, there are only a handful. In meal, it is doubtful whether the number exceeds 5,000, and not over 200 of those are really important. They may or may not want to buy when processors want to sell. They are ordinary businessmen, operating for a profit from their manufacturing activities. Logically, they are risk bearers similar to processors and country elevators. They must be paid well to get them to take risks.

I think it is the large discounts on forward positions—the reluctance to assume risks—that have accounted for the large average seasonal increase in soybean prices. The absence of a broad speculative market in soybeans and soybean products has made soybeans a very profitable speculation in recent years.

I think that traders on futures markets carry risks much more cheaply than will forward purchasers. This has accounted for the rapid growth of the soybean futures markets. From July 1947 to June 1948, total trading in soybean futures amounted to 40.2 million bushels. In 1948–49 it was 1,508 million bushels. There are not more recent summary figures available, but last Monday 16.5 million bushels were traded. The open interest was 57 million bushels. A good speculation will attract speculators. A crude soybean oil futures market was opened in Chicago during the past year and is attracting attention. Last Monday [November 27, 1950], 656 contracts of 60,000 pounds were traded. The open interest was 2,377 contracts. These figures are the oil equivalent of 3,936,000 and 14,262,000 bushels of soybeans, respectively.

COUNTRY ELEVATOR OPERATIONS IN SOYBEANS

Positions taken by country elevators were small in relation to both total volume of soybeans handled and stocks on hand at the elevators. A large proportion of the stocks on hand were in store for processors and farmers. Most of the rest of the stocks had been sold and were awaiting shipment. During October, November, and December 1947, country elevators bought 48 million bushels and owned unhedged only 2.8 million. During the same period the next year they bought 55.7 million bushels and carried open only 2.4 million. The average position was 1.3 million the first year compared with 1.1 million the second year. These averages have been blown up to a state-wide basis. The average annual position per elevator was 2,500 bushels the first year and 2,200 bushels the second. Peak positions were about 6,500 bushels per elevator in 1947–48 and 5,600 bushels in 1948–49.

The variation in the size of positions taken was great. Some elevators were never more than 100 bushels long or short. They did not speculate at all. At the other extreme, some elevators did not sell a single soybean during harvest. They were long all they purchased. These latter cases were rare. Generally speaking, not very

many elevators ever had positions larger than 10 to 15 percent of their total yearly purchases. During 1947–48 four elevators did not take positions at any time larger than 1,000 bushels. In 1948–49 fourteen elevators fell in this group.

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There was a wide range in speculative profit per bushel. The profit depended largely upon the size of positions taken. Those firms that did not speculate, of course, did not make or lose money on speculation. Of those elevators that did speculate, two lost money the first year. Both losses were small, one less than \$800 and the other less than \$200. None lost money speculating the second year. No doubt there are elevators in Illinois that have lost money speculating in recent years. Speculative profits ranged up to \$1.00 per bushel; 25 cents per bushel was not rare.

NATURE OF THE SPECULATION

The exact position of an elevator is not easy to keep track of; you know that better than I do. It is the nature of the business to be a little bit long, especially at harvest. Some speculation is unavoidable, though I think nearly all that I encountered—at least 85 percent—was deliberate.

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Possible gains and losses from soybean speculation are great. Had the average elevator in the main soybean belt carried open all of its purchases from the fall of 1947 to the spring of 1948, it would have doubled its net worth. Had it carried them open and had the market gone the other way, the results would have been catastrophic. A small position can eat up or double the handling margin.

COUNTRY ELEVATOR POLICY REGARDING SOYBEAN SPECULATION

All I have said thus far is designed to serve as a basis for determining the policies that country elevators should follow with regard to soybean speculation. Should a country elevator speculate in soybeans? I am not going to answer that question directly, as I do not think there is any one single answer for all situations. The answer depends upon the individual situation of the elevator.

On the positive side, we can list three main factors: First, someone must carry soybean risks, and whoever carries them will likely be paid for it. Second, the existing risk-shifting system is not particularly good. Large risk premiums are required, which make soybean speculation profitable. Third, for five years in a row extraordinarily large profits have been made by speculating in cash soybeans and soybean products. The record is five for five since the end of price ceilings. One of the hardest things I know how to do is to argue with success.

As more people try to take advantage of soybean seasonals, the seasonal will tend to disappear. Buying in the fall and selling in the spring increases the harvest price and decreases the spring price. If enough people did this, the thing could be tipped the other way. We may be approaching the time when the soybean seasonal will be small.

Finally, the outstanding single cause of country elevator failures has been speculation, and many of the most successful grain businesses have a strict policy of not speculating. Again I say it is hard to argue with success.

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