2

The Miller and the Commodity Market

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. . . I come before you as a representative of an industry about which, it is my impression, most economists have clear, definite, and erroneous ideas. We flour millers are described as:

a. Simple processors who buy a uniform product called "wheat" and turn it into a uniform principal product called "flour";
b. Members of an industry where little has changed mechanically, technically, or economically for generations;
c. Members of an industry where inventory risks are nonexistent.

Now, none of these concepts is true. It is primarily the inventory risk problem with which I shall concern myself, but it is necessary to comment on the first two misconceptions in order to give you the background for my statements on the risks of price change of wheat borne by the miller.

Flour milling was certainly at one time as simple a manufacturing process as existed, for the miller was a toll processor whose raw material was brought to him by the customer who took the output. Such simplicity disappeared long ago.

Today, in a very real sense, flour milling begins not with the wheat but with our customers' baking requirements. The American baker has been constantly improving his product and streamlining his operations. The miller, as the supplier of the baker's principal ingredient, has had to tighten up his controls on both raw materials and manufacture in order to give the baker both the improved level of quality and the continuous uniformity which he requires. Today's flours—higher in quality and millable from a highly selected and far-smaller proportion of the crop than those of ten years ago—are described in precise technical language corresponding to the "numbers" produced by the measuring devices in our laboratories. The word *flour*,

unmodified by adjectives, prepositional phrases, or subordinate clauses, has little meaning in today's market.

This diversity of products requires a diversity of raw materials. These raw materials are all called "wheat," but they are almost as carefully differentiated as if one were called "wheat" and the others, "coal," "salt," "iron," etc.

The character of our end products is affected not merely by our raw materials but by the type of processing equipment that we use. The insistent demand for highly uniform flour to fit the mechanized operations of the modern bakery has forced substantial capital outlays in the flour milling industry in recent years. The resulting refinements in the milling operation enable us to produce flours to suit the specific requirements of each of our customers.

We have not had such dramatic manufacturing and product changes as churn in the chemical and drug industries, nor have we felt the impact of latter-day mechanization, for we were highly mechanized long before most industries. But ours is nevertheless a climate of constant change—the tantalizing, exciting change that takes place minute-by-minute and hour-by-hour in the marketplace—exciting because unlike the conventional view of the flour milling business, we do have substantial risk in our various inventory positions. Futures trading is of great importance to us, but the area of risk left uncovered by futures trading is growing disturbingly. The miller's view of the position of futures trading in this economic pattern is changing.

A brief description of selling practices for bakery flour is necessary to point out how our inventory risks arise and what their magnitude has become.

Buyers of flour frequently contract to buy several months' requirements at one time. For example, on July 6th of this year, mills in the Southwest sold the equivalent of four months' production in one afternoon. It was quite impossible to buy such a quantity of cash wheat at the same time.

Flour prices vary with changes in the price of cash wheat and the value of by-product feeds, so that flour prices change *at least* once a day and occasionally there are minute-to-minute variations.

The flour miller, having sold flour on the basis of today's cash wheat price, seeks to protect himself against a change in the price of the necessary wheat because his processing margin is very narrow. This protection is what he hopes to find in the futures market.

You know the typical textbook example of hedging. In fact, let me quote a standard introductory text in economics discussing the dynamics of speculation and risk.

> "A miller must carry large inventories of grain in the course of his business. If the price of grain goes up, he makes a windfall capital gain; if down, he takes a windfall loss. But let us suppose that he is content to earn his living by milling flour and wishes to forego all risk taking. This he can do by a process called 'hedging'. This complicated procedure is rather like a man who bets on Army to win the Army-Navy game, and then washes out this transaction, or covers it, by placing an equal bet on the Navy. Whichever

side wins, he comes out the same, his left hand winning what his right hand loses."

This description is clever, but inaccurate. It probably never was truly accurate and today it is seriously misleading.

We in the milling trade see our inventory problems in different terms. The wheats which are our raw material sell "basis," in other words, at so many cents over or under the nearest active delivery month in the futures market. It would be an unusual case where a flour sale was made basis a cash wheat price "even" with the future contract and the grain was subsequently bought "even" with the futures contract.

The selected quality wheat we require to mill flour to our customers' specifications usually sells at a premium price over the wheat future. This premium would not affect the problem of risk if it were stable. Unfortunately, in the past few years, wheat premiums have become both large and variable.

Let me describe our situation more realistically. We make a flour sale requiring 13.50 protein spring wheat as raw material. The Minneapolis September future is $2.30. The premium basis for sale is 25¢ per bushel, so the dollar price of that wheat is $2.55. We buy the September at $2.30. It goes down to $2.20, but the dollar price of 13.50 protein wheat stays at $2.55 (which is another way of saying that the premium advanced from 25¢ to 35¢ over the future). We have lost 10¢ on the September future while the price of our raw material has remained the same. We have no compensating gain. We are out 10¢ per bushel. If, by contrast, the cash price remained at $2.55 and the September advanced to $2.40 by the time we exchanged it for cash wheat, we would have a 10¢ gain—or, to use our trade jargon, the premium declined from 25¢ to 15¢ per bushel.

We have discussed a case in which flour was sold before the miller acquired the wheat. In many cases the wheat is purchased before its equivalent in flour is sold, for there is no necessary connection between the two. The most striking case of advance purchase of wheat is for the mills in Buffalo, New York, the nation's largest flour milling center. These mills typically buy enough wheat during the fall to sustain their winter operations, shipping the grain by boat before the lakes freeeze in early December. At that time, the mills would have roughly five months' milling requirements on hand. A considerable amount of this wheat would not have been sold as flour. The risk situation for the Buffalo mill develops about as follows:

a. We buy No.1, best quality 13.50 protein spring wheat. It cost yesterday the September price of $2.48½ per bushel plus a premium of 28 cents per bushel. This is the kind of wheat we expect to use in our bakery flour mixes.
b. Since we have no flour sale to balance against the wheat purchase, we sell the September future at $2.48½ per bushel. The basic part of our inventory risk is covered, but the premium risk is not. We have only one perfect hedge for a long cash wheat position—the sale of flour to a customer who is good for his contract. Before we sell this cash wheat as flour, the premium may go down and we lose, for flour is sold on the basis of replacement cost of wheat. Or it may go up and we gain, but the main point is that we carry that premium risk and it is one of considerable magnitude. 13.50 percent protein spring varied

from 21¢ to 48¢ over the May future on this last crop and 16 percent protein, from 49¢ to 83¢.

The risk of change of wheat premiums is much greater now than in the years prior to World War II. The case of 16 percent protein spring wheat well illustrates the point. The range of premiums just mentioned on this past crop from 49¢ to 83¢ per bushel represents an extreme fluctuation of 34¢ per bushel. The fluctuations for the preceding four years were:

year	¢/bu.
1952	24
1951	14
1950	33
1949	24

By comparison a similar range of fluctuations of premiums for the pre-war years was:

year	¢/bu.
1934	10
1935	20
1936	08
1937	14
1938	04

The largest segment of the spring wheat flour production is from wheat in the middle 13.0 percent protein bracket. No figures are available to show how premium levels on this group of wheat have changed in the past fifteen years. But regardless of that fact, fluctuations of the magnitude of 27¢ per bushel (basis the May) which we have had in each of the past two crop years underline my point that today's inventory risks are substantial and bothersome.

There is another phenomenon in connection with protein premiums which is worthy of attention. I mentioned earlier the increased necessity for careful choice of the wheats being used as the raw material for bakery flour. In the spring wheat area there is a tendency for wheats of a given protein to be uniform in baking quality. This is not true with respect to hard winter wheats. There have been times during this past crop when the difference between the price of the most and least desirable quality of 12½ percent protein hard winter wheat at Kansas City has been as much as 40 cents per bushel on a given day. It was scarcely ever less than 8 or 10 cents per bushel. It represents a very serious problem deciding what wheats to buy and what premiums to pay when the crop is flowing in volume and yet its broad quality characteristics are unknown—or again, guessing at any time when some anxious buyer may drop out of the market and it may adjust downward from 10 to 15¢ a bushel in a few days.

The magnitude of the price risks carried by the miller has increased for two principal reasons:

First, the improved ability to differentiate one quality of wheat from another and the necessity of buying certain types which are in limited free market supply, and
Secondly, the increased market impact of the government loan program. The

immense building of farm, country elevator, subterminal, and government storage in the last ten years has made it possible for a great portion of the crop to be held off the market with the government standing ready to buy the wheat via the loan near the end of the crop year. This has made it feasible for the farmer to grow great quantities of wheat which are of little value to the miller and baker. Most of this goes into the loan but a sufficient quantity is sold into the market to keep the futures contract unattractive and relatively low in price. At the same time, the prices are bid up on better quality wheats in order to draw them away from the loan. As the supply of low quality fluctuates, the futures prices rise and fall, while the prices of milling wheats remain relatively stable. Much of the hedging problem of the last few years has developed because of the tendency for wheat premium changes to be the obverse of the changes in the futures market.

There is another set of problems in hedging which you may find interesting. When we have bought wheat or sold flour, we have to decide where to hedge—what market and what delivery month.

Let us assume that we have sold some soft wheat flour. The controlling futures market is Chicago. We must decide whether to buy the September which at the opening this morning stood at $2.18⅜; the December at $2.21¼; the March at $2.23⅝; the May at $2.19¾. If we do not wish to accept delivery, we would probably not buy the September at this time of the month because we might get delivery within a few days. Our choice then is between the December, March, and May. The wheat which will be bought to fulfill this sale will probably be priced in relation to the December, so the closest hedge is the December as the relationship of either the March or the May to the December will change. Normally Chicago December is what we would buy in these circumstances.

However, if we expect that the flour will be delivered after December or if we think that for some reason the December is likely to be weak relative to the March or May, we may buy one of those other contracts, setting up an intra-market spread.

The simplest hedging procedure is that wherein you always hedge the grain or flour in the main market for that type of wheat, soft in Chicago, hard winter in Kansas City, and spring in Minneapolis. There are times, however, when we may be fearful of having too much commitment in a single market or when we feel confident that the current relationship between that market, let us say Chicago, and Minneapolis or Kansas City, is out of line. In this case, we may be forced to buy in a different futures market which we think will afford a safer hedge. Instead of buying the Chicago December, we will buy the Minneapolis or Kansas City December. This purchase of, say, the Kansas City December contract instead of Chicago December, exposes us to an additional risk of price change. First, we have the usual risk of a change in the relation of the soft wheat premium to the controlling Chicago December. Second, we establish an inter-market spread position and incur the risk of a change in the relative prices of the Chicago December and Kansas City December contracts for the period prior to the purchase of wheat in Chicago and the accompanying sale of December future in Kansas City.

The miller has been able to carry substantial wheat inventories or to sell flour ahead beyond the inventories which he had in sight and at the same time to stay solvent on the low margins characteristic of the industry because he had mechanisms at hand which permitted him to operate with relatively small inventory risks.

The futures markets in their elaborate modern development, permitting extremely rapid execution of buying or selling orders amounting to hundreds of thousands of bushels, represent in our opinion, an extremely important way of diffusing risk and making the flow of commodities from farmer to consumer smooth and cheap. The futures market, however, gives a price for a limited class and quality of wheat. Particularly in the Minneapolis and Kansas City markets, the quality of the wheat which would be obtained on delivery of a futures contract is in limited demand by flour millers.

The grain market recognizes today a great variety of classes and qualities of wheat. Buyers bid substantial price differences over that quality as represented by the futures contract in order to get particular qualities. Our ability to differentiate wheat qualities is a techincal fact of major market significance. Our facilities for distinction will become more rather than less elaborate. The only circumstance which will reduce the spread between the top and the bottom premiums is the production of crops wherein there are ample quantities of the required qualities freely available to the market. Judging from the characteristics of recent crops and the way in which their marketing is affected by the loan program, this is unlikely. As a result, the miller faces greatly enlarged inventory risks which the futures markets are not now organized to shift to other people. The miller still hedges, but an increasing number of situations are arising where the traditional "hedge" represents the greater, not the lesser risk.

The grain futures markets are a truly wonderful mechanism, but they naturally must adjust themselves to the requirements of a changing economic situation. The way in which they will adjust will be the product of study not merely by the men who operate day-to-day in the grain pits, but of men like yourselves, the specialists in marketing theory, who will look for ways of utilizing and accentuating those qualities of the markets which have continuing economic value. It is well that all of us look frankly at the marvelous machine we have, the conditions under which it now must operate, and the ways in which it can be changed so that this machine which permits such remarkably rapid adjustment of prices in response to real changes in economic conditions and which can, if properly handled, diffuse risk in a way that will continue to make marketing of food astonishingly inexpensive, will be used to the utmost in the coming years.

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