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Alternative Marketing Strategies for Corn and Soybeans

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Alternative Marketing Strategies for Corn and Soybeans

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A few more cents in price per bushel may be the difference between profit and loss for a farmer's operation. Yet prices usually are determined by supply, demand, carry-over, and public policy, beyond the immediate control of individual farmers. They cause commodity prices to fluctuate within and between marketing years, and farmers take substantial price risks.

But farmers can assume some control over the prices they receive by skillful marketing; they can capitalize on price movement and increase their income. Effective marketing decisions depend upon understanding, interpreting, and evaluating three types of market and economic information: 1) short-term information on current prices, trading psychology, weather conditions, stocks, grain movements, etc; 2) knowledge of longer-run economic information regarding trends in U.S. and world supply, consumption, trade, carry-over and the outlook for these factors; and 3) information about sudden changes in government regulations and policies.[1]**

Problem Statement

While knowing an effective marketing strategy can increase his income, a farmer has questions about these alternative strategies. Which generates the most revenue? Which is most profit-able? Which is least risky? Which is least costly?

One alternative probably does not work very well: basing decisions on past or current prices. That is, farmers often plant a commodity because prices were high last year. But when enough farmers use last year's price to determine this year's planting, production increases and prices often fall.[2]

Other researchers have suggested that South Dakota farmers may not be aware of, or have access to all the information available. Only 16% of the farmers in a region which included South Dakota followed futures prices, and only 5.2% traded futures contracts.[3]

Yet "understanding futures is important in determining: (1) what to plant where there are alternative crops, (2) whether to sell or store grain, (3) when to sell--before a crop is planted, while it is growing, at harvest, or after a period of storage, (4) whether your local prices are excessively low or high in relationship to other markets, and (5) whether to feed a crop to livestock or sell it as grain."[4]

Less than one third of the farmers in the region of which South Dakota is a part understood the principles of the local basis, although nearly all corn and soybeans are sold on basis after they leave the farm and basis is the key to effectively translate futures prices to cash prices.[3]

Basis in grain terminology is "the difference between a grain futures price and a cash grain price for a specific locality."

*associate professor, assistant professor, and graduate student, respectively.

**Superscripts refer to sources of information. They are listed at the end of this publication.

Different localities are apt to have a different basis for the same futures price becasue of differences in cost of getting grain to a market. Thus, there is a Chicago basis, a Minneapolis basis, a Gulf basis, or any hometown basis. Then there is also a basis for each trading month such as a December basis, a March basis, or a July basis.

Marketing information and alternative strategies are available to farmers, but most fail to take advantage of them. As the results of this study reveal, this can be very expensive for individual producers.

Objectives

Three questions outlined the scope of this study:

1. What marketing strategies might be used by South Dakota producers to cope with changing market conditions?

2. What marketing strategies maximized net returns for the crop years from 1972 through 1977?

3. How does basis work in marketing strategy?

In 1977, South Dakota farmers harvested 2,150,000 acres of corn for grain and 315,000 acres of soybeans.[5] While part of this grain was fed to livestock, a significant portion was sold as cash grain.

In this study, 11 corn and soybean marketing strategies, which could have been used for selling during the years 1972 through 1977, are evaluated. In each marketing strategy, the crop was priced either by the cash market or forward priced with the futures market.

The local cash prices represented eastern South Dakota prices. Futures prices are those traded at the Chicago Board of Trade. Both prices were based upon a 5 day average. The net return of each strategy was determined by subtracting the marketing costs (such as storage, interest, and margin costs) from the price received per bushel.

Marketing Strategies

The specific volumes, dates, and details of each marketing strategy are outlined in Tables 1 and 2.

Cash Marketing Strategies

Strategy 1. Sell at Harvest

This marketing strategy involved selling the entire crop at harvest, a policy employed for approximately 40% of the corn and soybeans sold in South Dakota from 1972 through 1976.

The marketing dates selected for this strategy were the last week of October for soybeans and the first week of November for corn. Normally, 75% of the crops were harvested by these dates.[6]

The results of this strategy served as the benchmark for comparison of the other results.

Strategy 2. Short-Term Storage

The entire crop was sold at the end of January.

This minimized the time that price risk was incurred, while providing an opportunity for prices to increase after harvest and for the basis to narrow. Furthermore, storage and opportunity costs were low compared to long-term storage, and income was shifted into the next calendar year.

Strategy 3. Long-Term Storage

Here the entire crop was sold during mid-August in the year following harvest.

This strategy involved the longest storage period, highest storage and opportunity costs, and longest price risk for producers. It tested the opinion of some commodity price observers that, over long-term storage, commodity prices

Table 1. Soybean Marketing Strategies

A. Cash Marketing Strategies

		Time of Sales	Amount of Crop Priced
1.	Sell at harvest	Last week in October	All
2.	Short-term storage	Last week in January	All
3.	Long-term storage	Mid-August	All
4.	Multiple sales at harvest and after storage	Last week in October Last week in January Second week in July	1/3 1/3 1/3
5.	Multiple sales after extended storage	Last week in April Last week in June Mid-August	1/3 1/3 1/3
6.	Multiple sales after short-term storage	Last week in January Mid-March Last week in April Second week in July	1/4 1/4 1/4 1/4

B. Forward Pricing Strategies Involving Futures

7.	Early forward selling	Sell November futures
		    last week in April,
		    second week in July, and
		    last week in October; then
		Sell cash beans and
		    close futures contracts
			1/3
			1/3
			1/3

8.	Early forward selling with a roll ahead	Same as Strategy 7 except during the last week of October buy back November futures and sell a later contract	All

9.	Late forward selling	Sell November futures
		    second week in July,
		    mid-August, and
		    last week in October; then
		Sell unhedged and hedged
		    beans
			1/3
			1/3
			1/3

10.	Late forward selling with a roll ahead	Same as Strategy 9 except during the last week of October buy back November futures and sell a later contract	All
11.	Hedging the stored crop	Last week in October	All

Table 2. Corn Marketing Strategies Analized in This Study

A. Cash Marketing Strategies

		Time of Sales	Amount of Crop Priced
1.	Sell at harvest	First week in November	All
2.	Short-term storage	Last week in January	All
3.	Long-term storage	Mid-August	All
4.	Multiple sales at harvest and after storage	First week in November Last week in January Last week in June	1/3 1/3 1/3
5.	Multiple sales after extended storage	Last week in April Last week in June Mid-August	1/3 1/3 1/3
6.	Multiple sales after short-term storage	Last week in January Mid-March Last week in April Last week in June	1/4 1/4 1/4 1/4

B. Forward Pricing Strategies Involving Futures Contracts

			Amount of Crop Priced

7.	Early forward selling	Sell December futures
		    last week in April,
		    last week in June, and
		    first week in November; then
		Sell cash corn and close
		    futures contracts
			1/3
			1/3
			1/3

8.	Early forward selling with a roll ahead	Same as Strategy 7 except during the first week of November buy back December futures and sell a later contract	

9.	Late forward selling	Sell December futures
		    last week in June,
		    mid-August,
		    first week in November; then
		Sell cash corn and close
		    futures contracts
			1/3
			1/3
			1/3

10.	Late forward selling with a roll ahead	Same as Strategy 9 except during the first week of November buy back December futures and sell a later contract	
11.	Hedging the stored crop	First week in November	All

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increase enough to repay a producer's storage and opportunity cost and compensate for the extended price risk.

Strategy 4. Multiple Sales at Harvest and After Storage

Under the fourth strategy, the crop was marketed in thirds.

The first third was sold at harvest, allowing the producer some funds with which to pay expenses incurred during production and harvest. The other two thirds were sold in equal increments at the end of January and June, allowing income from storage.

Strategy 5. Multiple Sales After Extended Storage

This strategy also involved selling the crop in thirds but during the last week of April, the last week of June, and the middle of August. It involved a longer storage period while spreading the price risk.

Strategy 6. Multiple Sales After Short-Term Storage

In this strategy the crop was marketed in fourths during the first half of the calendar year.

Theoretically, this would enhance returns while minimizing storage and opportunity costs. It also allowed a return to storage while spreading the price risk. The marketing dates were the last week in January, mid-March, and the ends of April and June.

Forward Pricing Strategies
Using Futures Trading

Five forward pricing strategies were examined to determine the profitability of each and whether basis movements could be used to increase net returns with minimal risks.

Strategy 7. Early Forward Selling

Under the first forward pricing strategy, two thirds of the crop was priced before harvest.

One third was priced before planting by selling a December futures contract for corn or a November futures contract for soybeans. This was done after determining the acres to be planted and estimating yield.

Another third of this estimated crop was forward priced during the last week in June. This was done after the farmer had re-evaluated his yield and the available market information. The remaining third was not hedged, allowing for crop yield variability and management flexibility. All of the cash crop was sold at harvest and the futures contracts were closed out.

Strategy 8. Early Forward Selling With a Roll Ahead

This strategy is the same as Strategy 7 but rather than selling cash grain at harvest and closing out the futures contracts, the farmer stored the grain and rolled ahead the futures contract.

Rolling the futures delivery month involved buying back the December or November futures and selling a later futures at the same time. The later futures trading months referred to are: March, May, or July for corn and January, March, May, or July for soybeans.

To allow time for the basis to narrow after harvest it is recommended that a futures contract be sold for the last trading month that possesses a carrying charge. It is essential that a farmer examine futures quotations when rolling the futures delivery month. He should determine if there is a sufficient carrying charge to make the move profitable.

A carrying charge is the difference between price quotations for consecutive futures months and should reflect enough difference to pay for storage, interest, insurance, handling, and other marketing

costs. In a normal market, futures prices tend to reflect the cash price plus these costs. Thus each deferred delivery month within the same crop year should sell at a higher price. If a carrying charge between later futures trading months does not exist or is not sufficient to cover costs, a futures contract for the last month that possesses an adequate carrying charge should be sold.

Strategy 9. Late Forward Selling

Under this forward pricing strategy, two thirds of the crop was priced before harvest.

The first third was priced during the last week in June, which allowed the producer to improve his crop and market evaluation. Another third was priced in mid-August when the crop is progressing toward maturity and natural risks are lower. The remaining third was not hedged.

All the crop was sold for cash at harvest and the futures contracts were closed.

Strategy 10. Late Forward Selling with a Roll Ahead

This strategy is the same as Strategy 9 but rather than sell the grain at harvest, the farmer stored the grain and rolled ahead the futures contracts.

Strategy 11. Hedging the Stored Crop

Under this forward pricing strategy, the entire crop was priced after it was stored. The futures contract sold was again determined by selecting the one with the best carrying charges.

The purpose of this strategy was to minimize price risk during storage. In addition, it was anticipated that the basis would narrow sufficiently to pay for storage costs and possibly increase the net return.

Application of Marketing Strategies

Using Futures Contracts as Part of Your Marketing Program

Five of the eleven marketing alternatives involve the use of futures trading. The contract that the farmer "sells" represents grain that he intends to plant, has growing, or has in storage. He promises to deliver the contracted grain at a future date at a certain price.

Actually, he rarely does. He "buys" another contract before the delivery date falls due. By this time he has achieved his marketing objectives, which are usually to protect himself or to profit from price shifts, although he may also want to take his income in another calendar year or use the contract as a form of loan collateral.

The two contracts cancel each other out. No grain ever exchanged hands, and only a minimal amount of money was posted as bond and fees.

Even if the farmer doesn't trade in futures, it benefits him to study the market. He can take advantage of the best of his local cash market then, because the local market reacts to movements in the futures.

Local Basis

The critical component in forward pricing with futures is the price difference between the cash price and a designated futures price for a commodity at a particular location and time. This is called the "local basis."

Usually the basis follows a definite pattern throughout the crop year. Normally it is widest at harvest and gradually narrows as the crop year progresses because the basis represents a demand for storage which also encompasses carrying costs such as storage, opportunity, handling, and other marketing costs.[7] As the July futures termination date draws closer (Figure 1) the costs already incurred tend to narrow the basis.

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The basis does not always follow the pattern shown in Figure 1, but will vary according to demand and supply of that commodity, transportation costs and availability, storage space, geographical differences, etc. Each farmer should estimate his local basis when considering forward pricing alternatives by examining these conditions and records of basis movements for several years. Then he will be able to secure a price objective by selling a futures contract that represents the desired delivery date. The futures price less the estimated local basis gives the expected price.

Advantages of Forward Pricing with Futures

There are several advantages to forward pricing with futures. The producer (1) can price crops for future delivery when prices are favorable; (2) can make a profit from favorable price movements in the cash and futures market or earn a payment for storage; (3) can reduce risks since a price objective is secured, and (4) can, in contrast with forward cash contracts with elevators, more easily change pricing decisions or offset a contract should a short crop occur.

Disadvantages to Forward Pricing with Futures

Disadvantages of forward pricing with futures include: (1) farmers must make margin deposits and meet margin calls if the market moves contrary to their expectations; (2) some farmers may not produce enough of one commodity to use futures contracts, which are traded in multiples of 1000- or 5000-bushel units depending on the exchange used; and (3) the prices expected by farmers, based on historical cash and futures price relationships are not exact, but are estimates, hopefully within a narrow range.

Under two forward pricing strategies, the crop was priced before harvest, and delivery of the grain either was called for at harvest or the futures trading month was rolled ahead, delaying delivery. The "rolling ahead" option was added because buyers of grain often reduce their cash bids in relation to the near futures price because of a shortage of storage or transportation at harvest (widening of the basis). Therefore, it usually is feasible to roll the futures month ahead when local cash prices at harvest are depressed in relation to the futures price. Then, when the basis narrows, the producer may repay his storage and opportunity costs, and possibly realize a profit. This also would permit the producer to shift his income to the following year with minimal price risk.

Forward pricing with futures at harvest receives the same benefits as rolling the futures trading month ahead.
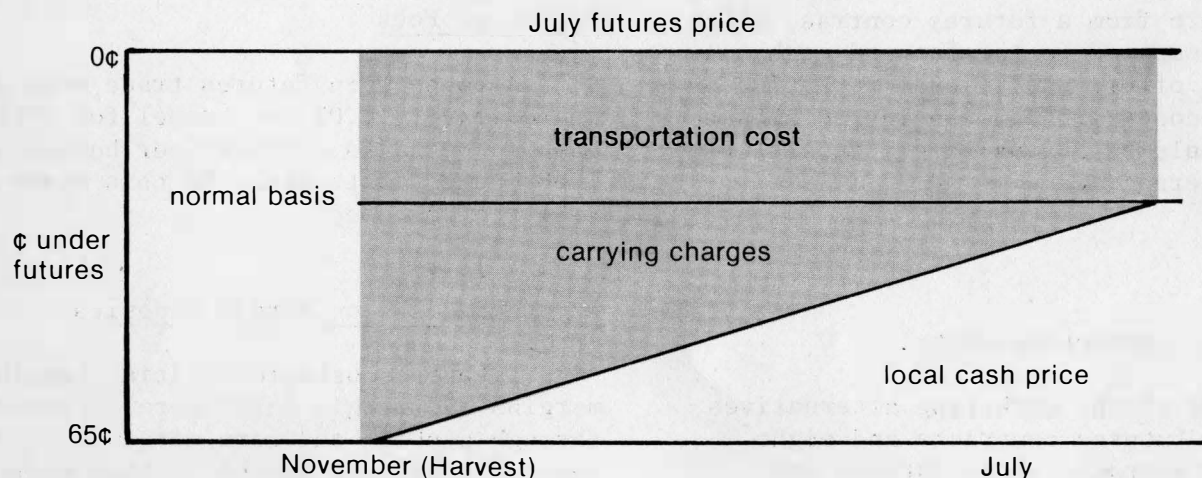

Figure 1. Normal basis for July futures

Information About Futures

Use of the futures market requires more, not less, analysis and information. Contact your county Extension agents, the Extension staff at South Dakota State University, or other colleges and universities for assistance.

Forward Cash Contracts as an Alternative to Futures Trading

Farmers can contract grain with a local elevator or other buyer rather than forward price through the futures markets. This option was not examined for this study because elevators do not maintain a record of forward cash prices. However, farmers should evaluate forward cash contracts when establishing marketing plans.

Forward cash contracts can be compared with futures contracts by using the following procedure: (1) find the futures price quotation which represents the desired delivery date; (2) estimate what the futures represent in local price; (3) subtract $.01 per bushel for brokerage fees; and (4) deduct approximately $.02 to $.05 for interest on margin deposits and margin calls. The interest cost for margin deposits and margin calls depends on the length of time the futures contract is held, the commodity's value, and the price changes that occur while the futures contract is held.

This procedure should estimate the net return from a futures contract which can be compared to the forward cash contract offer. Additional marketing or storage costs are not considered because they should be approximately equal for both alternatives.

Marketing Costs

Five of the marketing alternatives utilized futures contracts and eight involved storage. Both futures and storage have costs; you must not overlook them when selecting a marketing program.

Following is an example: on June 30 the corn crop is progressing well and looks like a bumper crop. The producer desires to insure an approximate price for one third of his crop. He contacts the local elevators to determine their bid for a new crop, November 1 delivery. The facts on June 30 are:

(1) The cash contract bid for November 1 delivery is $1.75.

(2) December corn futures price is $2.40.

(3) The producer's records show the cash price to normally be $.45 to $.50 under the December futures on November 1.

(4) Interest and brokerage cost - $.04.

Thus, the producer estimates that by forward pricing with futures he will receive $1.86 ($2.40 - $.50 - $.04 = $1.86). This is $.11 more than the forward contract offer of $1.75 made by the elevator.

The producer should then decide if for $.11 less profit he is willing to forward contract cash grain rather than forward pricing with futures. The difference between estimated net returns from forward pricing with futures and net returns from cash contracts may reflect the buyer's profit margin and compensation for risks such as estimation errors for basis and marketing costs.

Brokerage Fees

A round turn futures trade cost was approximately $.01 per bushel for 5000-bushel contracts and $.02 per bushel for 1000-bushel contracts. In this study the $.01 fee was used.

Interest Costs on Margin Deposits

Interest costs for initial hedging margins and margin calls were estimated through soybean and corn margin requirements established by the Chicago Board of Trade. The interest rate used was the estimated cost of borrowed capital during

each crop year examined. Margin calls were figured upon average price changes over 2-week periods.

Opportunity Costs

Rather than store the crop, a farmer could sell it and invest the money or use it to pay back borrowed operating capital. This element is the largest storage component (Table 3). For example, if soybeans are worth $7 at harvest and the interest rate is 12% storing the beans costs $.07 per bushel, per month. The opportunity cost figures used in this study represent borrowed funds. Rates were secured from a bank for each year examined.

Warehouse Costs

Physical grain storage incurs cost, whether the grain is stored on the farm or at an elevator. This study used commercial elevator rates as established by the Public Utilities Commission of South Dakota. On July 1, 1973, the rates were 1/20 of a cent per bushel for each day of storage, with a $.04½ per bushel charge for receiving, handling, and conditioning.[8] These rates remained effective until March 31, 1978. However, in this study, the $.04½ per bushel charge was not assessed since many elevators did not charge this fee.

On-Farm Storage Facilities

Most farmers own some grain storage facilities, and additional storage is purchased each year. This storage capacity can increase profitability and managerial flexibility. But it also increases the cost of marketing grain and, if not used strategically, can reduce profits.

Producers should plan a storage system that is geared towards their particular needs. Information about advantages and disadvantages of different systems is available from neighbors, Extension personnel and dealers. Existing facilities must be examined to determine if they are adequate or can be feasibly expanded. Further, new on-farm storage facilities and commercial (elevators) storage should be compared to determine which alternative is more economical in the long run.

In addition to building costs, on-farm storage involves an additional and often ignored cost--shrinkage and spoilage. Grain is sold by weight. Since stored grain dries, there is less weight after storage. Shrinkage costs are shown in Table 4.

Results

Soybeans

General Results

In general, profitability varied substantially between soybean strategies. Had a farmer chosen one strategy and used it for the 6-year test period, the best choice would have yielded an average return of $5.91½ while the poorest choice would have yielded an average return of $5.10. This $0.81 represents a 15% difference and would have a significant impact upon a farming operation. It reveals the importance of continually evaluating marketing alternatives.

Had a farmer changed strategies each year and always picked the best, the average return would have been $6.81 per bushel. If the poorest strategy had been selected, the return per bushel would have averaged $4.18½ over the 6-year period (Table 9). This demonstrates two critical components of marketing strategies: (1) farmers must be flexible! and (2) farmers must be well informed!

They must be able to use the information available to determine which marketing strategy is most apt to have the greatest return, under current known conditions. Farmers must carefully evaluate their personal needs and constantly monitor market information so they can adjust marketing strategies to increase their yearly net return. While it

Table 3. Monthly Cost for Holding Grain Inventory at Various Commodity Values and Interest Rates (Opportunity Cost)

Value of Grain per Bushel $	Annual Interest Rate																	
	5%	6%	7%	8%	9%	10%	11%	12%	12%	14%	15%	16%	17%	18%	19%	20%	21%	22%
1.00	.0042	.0050	.0058	.0067	.0075	.0083	.0092	.0100	.0108	.0117	.0125	.0133	.0142	.0500	.0158	.0167	.0175	.0183
1.25	.0052	.0063	.0073	.0083	.0094	.0104	.0115	.0125	.0135	.0146	.0152	.0167	.0177	.0188	.0198	.0208	.0219	.0229
1.50	.0062	.0075	.0088	.0100	.0112	.0125	.0138	.0150	.0163	.0175	.0188	.0200	.0213	.0225	.02375	.0250	.0263	.0275
1.75	.0073	.0087	.0103	.0117	.0131	.0146	.0161	.0175	.0190	.0204	.0219	.0233	.0248	.0262	.0277	.0292	.0306	.0321
2.00	.0083	.0100	.0117	.0133	.0150	.0167	.0183	.0200	.0217	.0233	.0250	.0267	.0283	.0300	.0317	.0333	.0350	.0367
2.25	.0094	.0113	.0132	.0150	.0169	.0188	.0207	.0225	.0243	.0262	.0281	.0300	.0318	.0337	.0356	.0375	.0393	.0412
2.50	.0104	.0125	.0146	.0167	.0188	.0208	.0229	.0249	.0270	.0291	.0312	.0333	.0354	.0374	.0395	.0416	.0437	.0458
2.75	.0115	.0137	.0161	.0183	.0206	.0229	.0253	.0274	.0297	.0320	.0343	.0366	.0389	.0412	.0435	.0458	.0481	.0504
3.00	.0125	.0150	.0175	.0200	.0225	.0250	.0275	.0300	.0325	.0350	.0375	.0400	.0425	.0450	.0475	.0500	.0525	.0550
3.25	.0135	.0162	.0190	.0217	.0244	.0271	.0298	.0324	.0352	.0379	.0406	.0433	.0460	.0487	.0414	.0541	.0568	.0595
3.50	.0146	.0175	.0204	.0233	.0262	.0292	.0321	.0349	.0379	.0408	.0437	.0466	.0495	.0524	.0554	.0583	.0612	.0641
3.75	.0156	.0187	.0219	.0250	.0281	.0313	.0344	.0375	.0406	.0438	.0469	.0500	.0531	.0563	.0594	.0625	.0656	.0688
4.00	.0167	.0200	.0233	.0267	.0300	.0333	.0367	.0400	.0433	.0467	.5000	.0533	.0567	.0600	.0633	.0667	.0700	.0733
4.25	.0177	.0212	.0248	.0483	.0319	.0354	.0390	.0425	.0460	.0496	.0531	.0567	.0602	.0638	.0673	.0708	.0744	.0799
4.50	.0187	.0225	.0263	.0300	.0338	.0375	.0413	.0450	.0488	.0525	.0563	.0600	.0638	.0675	.0713	.0750	.0788	.0825
4.75	.0198	.0237	.0278	.0317	.0356	.0396	.0436	.0475	.0515	.0554	.0594	.0633	.0673	.0712	.0752	.0792	.0831	.0871
5.00	.0208	.0250	.0292	.0333	.0375	.0417	.0458	.0500	.0542	.0583	.0625	.0667	.0708	.0750	.0792	.0833	.0875	.0917
5.25	.0219	.0262	.0307	.0350	.0394	.0438	.0482	.0525	.0569	.0613	.0656	.0700	.0744	.0788	.0831	.0875	.0919	.0963
5.50	.0229	.0275	.0321	.0367	.0413	.0458	.0504	.055	.0596	.0642	.0688	.0733	.0779	.0825	.0871	.0916	.0962	.1008
5.75	.0240	.0287	.0336	.0383	.0431	.0479	.0527	.0575	.0623	.0671	.0719	.0767	.0815	.0863	.0910	.0958	.1006	.1054
6.00	.0250	.0300	.0350	.0400	.0450	.0500	.0550	.0600	.0650	.0700	.0750	.8000	.0850	.090	.0950	.1000	.1050	.1100
6.25	.0260	.0312	.0365	.0417	.0469	.0521	.0573	.0625	.0677	.0729	.0781	.0833	.0885	.0937	.0990	.1042	.1094	.1146
6.50	.0271	.0325	.0379	.0433	.0488	.0542	.0596	.0650	.0704	.0758	.0813	.0867	.0921	.0975	.1029	.1083	.1138	.1192
6.75	.0281	.0337	.0394	.0450	.0506	.0563	.0619	.0675	.0731	.0788	.0844	.0900	.0956	.1013	.1069	.1125	.1181	.1238
7.00	.0292	.0350	.0408	.0467	.0525	.0583	.0642	.0700	.0758	.0817	.0875	.0933	.0992	.1050	.1108	.1167	.1225	.1283
7.25	.0302	.0362	.0423	.0483	.0544	.0604	.0665	.0725	.0785	.0846	.0906	.0967	.1027	.1088	.1148	.1208	.1269	.1329
7.50	.0312	.0375	.0438	.0500	.0563	.0625	.0688	.0750	.0813	.0875	.0938	.1000	.1063	.1125	.1188	.1250	.1313	.1375
7.75	.0323	.0387	.0453	.0581	.0581	.0646	.0711	.0775	.0840	.0904	.0969	.1033	.10979	.11625	.1227	.1291	.1356	.1421
8.00	.0333	.0400	.0467	.0533	.0600	.0667	.0733	.0800	.08667	.0933	.100	.1067	.1133	.11200	.1267	.1333	.1400	.1467
8.25	.0344	.0412	.0482	.0550	.0619	.0688	.0757	.0825	.0894	.0963	.1031	.1100	.1169	.1238	.1306	.1375	.1443	.1513
8.50	.0354	.0425	.0496	.0567	.0638	.0708	.0779	.0850	.0908	.0992	.1063	.1133	.1204	.1275	.1346	.1417	.1488	.1558
8.75	.0365	.0437	.0511	.0583	.0656	.0729	.0803	.0875	.0948	.1021	.1094	.1167	.1240	.1313	.1385	.1458	.1531	.1604
9.00	.0375	.0450	.0525	.0600	.0675	.0750	.0825	.0900	.0975	.1050	.1125	.1200	.1275	.1350	.1425	.1500	.1575	.1650
9.25	.0385	.0462	.0540	.0617	.0694	.0771	.0848	.0925	.1002	.1079	.1156	.1233	.1310	.1388	.1463	.1542	.1619	.1695
9.50	.0396	.0475	.0554	.0633	.0713	.0792	.0875	.0950	.1029	.1108	.1188	.1267	.1346	.1425	.1504	.1583	.1663	.1742
9.75	.0406	.0487	.0569	.0650	.0731	.0813	.0892	.0975	.1056	.1138	.1219	.1300	.1381	.1463	.1544	.1625	.1706	.1788
10.00	.0417	.0500	.0583	.0667	.0750	.0833	.0917	.1000	.10833	.1167	.125	.1333	.1417	.1500	.1583	.1667	.1750	.1833

Table 4. Loss from Damage, Spoilage, and Shrinkage*, Cost in Dollars,
per Bushel per Period.

Value Per Bushel	Percentage of Bushel Lost									
	½%	1%	1½%	2%	2½%	3%	3½%	4%	4½%	5%
$1.00	.005	.010	.015	.020	.025	.030	.035	.04	.045	.050
1.25	.006	.013	.019	.025	.031	.038	.044	.05	.056	.063
1.50	.008	.015	.023	.030	.038	.045	.053	.06	.068	.075
1.75	.009	.018	.026	.035	.044	.053	.061	.07	.079	.088
2.00	.010	.020	.030	.040	.050	.060	.070	.08	.090	.100
2.25	.011	.023	.034	.045	.056	.068	.079	.09	.101	.113
2.50	.013	.025	.038	.050	.063	.075	.088	.10	.113	.125
2.75	.014	.028	.041	.055	.069	.083	.096	.11	.124	.138
3.00	.015	.030	.045	.060	.075	.090	.105	.12	.135	.150
3.25	.016	.033	.049	.065	.081	.098	.114	.13	.146	.163
3.50	.018	.035	.053	.070	.088	.105	.123	.14	.158	.175
3.75	.019	.038	.056	.075	.094	.113	.131	.15	.169	.188
4.00	.020	.040	.060	.080	.100	.120	.140	.16	.180	.200
4.25	.021	.043	.064	.085	.106	.128	.149	.17	.191	.213
4.50	.023	.045	.068	.090	.113	.135	.158	.18	.203	.225
4.75	.024	.048	.071	.095	.119	.143	.166	.19	.214	.238
5.00	.025	.050	.075	.100	.125	.150	.175	.20	.225	.250
5.25	.026	.053	.079	.105	.131	.158	.184	.21	.236	.263
5.50	.028	.055	.083	.110	.138	.165	.193	.22	.248	.275
5.75	.029	.058	.086	.115	.144	.173	.201	.23	.259	.288
6.00	.030	.060	.090	.120	.150	.180	.210	.24	.270	.300
6.25	.031	.063	.094	.125	.156	.188	.219	.25	.281	.313
6.50	.033	.065	.098	.130	.163	.195	.228	.26	.293	.325
6.75	.034	.068	.101	.135	.169	.203	.236	.27	.304	.338
7.00	.035	.070	.105	.140	.175	.210	.245	.28	.315	.350
7.25	.036	.073	.109	.145	.181	.218	.254	.29	.326	.363
7.50	.038	.075	.111	.150	.188	.225	.263	.30	.338	.375
7.75	.039	.078	.116	.155	.194	.233	.271	.31	.349	.388
8.00	.040	.080	.120	.160	.200	.240	.280	.32	.360	.400
8.25	.041	.083	.124	.165	.206	.248	.289	.33	.371	.413
8.50	.043	.085	.128	.170	.213	.255	.298	.34	.383	.425
8.75	.044	.088	.131	.175	.219	.263	.306	.35	.394	.438
9.00	.045	.090	.135	.180	.225	.270	.315	.36	.405	.450
9.25	.046	.093	.139	.185	.231	.278	.324	.37	.416	.463
9.50	.048	.095	.143	.190	.238	.285	.333	.38	.428	.475
9.75	.049	.098	.146	.195	.244	.293	.341	.39	.439	.488
10.00	.050	.100	.150	.200	.250	.300	.350	.40	.450	.500

*Shrinkage includes moisture shrinkage. For example, grain put into a bin at 12.5% moisture and taken out at 11% will have lost 1.5% in weight.

is unlikely that the highest possible price always will be obtained, a well-planned marketing program should increase the chance of above-average returns over time.

Specific Results

No strategy consistently out-performed the others. In fact, each strategy varied substantially. For example, storing beans until mid-August yielded the highest net return for the 1975 crop and the lowest return for the 1976 crop year.

(The net returns received as a result of each strategy were compared to the net results received from selling soybeans at harvest.)

Strategy 1. Sell at Harvest

Selling soybeans at harvest proved to be an inferior marketing strategy; of the 11 strategies evaluated, its average rank was tenth. In 4 of the 6 crop years evaluated it ranked near the bottom in profitability.

This supports the opinion of many commodity price observers that grain prices generally rise after harvest to compensate for storage cost and risk.

Strategy 2. Short-Term Storage

In 4 out of 6 years, selling soybeans in January resulted in a net return that was approximately $.65 above harvest prices. However, the average net return over all 6 years was only $.01½ over the net return from sales at harvest.

The net return from soybean sales can be increased by using short-term storage, but conditions must be monitored carefully to avoid adverse price movements.

Strategy 3. Long-Term Storage

Selling the entire crop during mid-August, after long-term storage, proved very profitable in 4 of 6 years tested, but also proved very unprofitable during the other 2 years. In addition, marketing costs for this strategy were higher than for any other strategy because of the length of storage.

Yet, selling the soybean crop in mid-August yielded the second highest average net return of all the strategies. While this was one of the riskiest strategies, the higher returns seemed to compensate farmers for their risk.

It must be stressed that by using available marketing information, the risk incurred through long-term storage can be reduced.

Strategy 4. Sale at Harvest and After Storage

This alternative consistently ranked near the middle of the strategies, never ranking above fourth or below seventh. Over the 6-year period, returns were superior to selling at harvest. This alternative involved relatively small marketing costs and seemed to be a low risk alternative which proved modestly profitable.

Strategy 5. Multiple Sales After Extended Storage

Extended storage combined with multiple sales to spread risk resulted in the most profitable alternative.

This strategy resulted in high net returns 4 out of 6 years. But in 1974, soybeans sold under this strategy yielded the lowest net return. This again emphasizes the need to consistently evaluate price factors and to correspondingly alter marketing strategies.

Strategy 6. Multiple Sales After Short-Term Storage

This strategy involved four sales early in the calendar year. It yielded good results half of the time and poor the other years. On the average, the results proved profitable, ranking third among the 11 strategies evaluated.

Table 5. Net Prices Generated by Alternative Soybean Marketing Strategies.*

Marketing Strategy	1972 Return	Rank	1973 Return	Rank	1974 Return	Rank	1975 Return	Rank	1976 Return	Rank	1977 Return	Rank	Average Return	Rank
A. Cash Marketing Strategies														
Sell at harvest	$3.08	9	$4.85	10	$7.46	3	$4.54	9	$6.17	5	$4.73	9	$5.14	9.5
Short-term storage	4.34½	5	5.51½	4	5.55½	8	3.96½	11	6.57½	3	4.98	7	5.15½	8
Long-term storage	7.17½	2	6.90	1	4.94½	10	5.55½	1	4.38	11	5.35	4	5.72	2
Multiple sales at harvest and after storage	5.14	4	5.44½	6	5.83	7	4.89	5	6.01½	7	5.20½	6	5.42	7
Multiple sales after extended storage	7.72	1	5.50	5	4.37½	11	5.11½	3	6.71	2	5.69½	1	5.91½	1
Multiple sales after short-term storage	6.08	3	5.41	7	4.96	9	4.58	8	7.11	1	5.63	2	5.63	3
B. Forward Pricing Strategies Involving Futures Contracts														
Early forward selling	2.90	11	5.13	8	6.31½	6	4.88	6	5.83½	9	5.53½	3	5.10	11
Early forward selling with a roll ahead	3.34	8	4.87½	9	6.79	5	4.79	7	5.69½	10	5.34	5	5.14½	9.5
Late forward selling	2.94	10	6.56½	2	7.10½	4	5.17½	2	6.34	4	4.88	8	5.50	6
Late forward selling with a roll ahead	3.38	7	6.20	3	7.52½	2	5.07½	4	6.16	6	4.72	10	5.51	5
Hedging the stored crop	3.52½	6	4.55½	11	7.86½	1	4.46	10	5.99½	8	4.58	11	5.61½	4

Six year average......5.40

*The net price reflects the market price received less marketing costs such as storage, brokerage fees, opportunity cost based on bor

Strategy 7. Early Forward Selling

This alternative ranked high one year, but ranked eleventh out of the 11 strategies analyzed for the years 1972 through 1977.

The fact that early forward selling did not rank high should not eliminate it as a marketing strategy. The key to successful marketing is using available information; and the information available from futures prices are invaluable in marketing grain and should always be used in making marketing decisions. Further, this alternative can prove successful during periods of continuing down markets, and when production is expected to be higher or demand lower than the year before.

Strategy 8. Early Forward Selling with a Roll Ahead

The returns from early forward selling could be increased by rolling ahead the futures contract and taking a basis gain over the 6-year period. While a basis gain existed in only 2 of the 6 years, it was large enough to compensate for the lower return the other 4 years.

This strategy was tied with selling for cash at harvest for the second poorest strategy. The basis hedge was placed on a specific date rather than when it looked to be profitable based on history.

Strategy 9. Late Forward Selling

During the test period, late forward selling ranked in the middle among the various strategies examined and it yielded the second highest return in 2 years.

Strategy 10. Late Forward Selling with a Roll Ahead

By rolling ahead the futures contract sold under Strategy 9 and taking a basis gain, producers would receive a higher average income although they would have gained in only 2 of the 6 years.

This indicates that farmers should keep local basis records so they can: (1) forecast basis movement for their particular area, and (2) estimate their returns from forward pricing with futures contracts.

Strategy 11. Hedging the Stored Crop

Selling a futures contract on harvested soybeans to take advantage of basis movement yielded the highest return one year and low returns 3 years.

Overall, it proved to be a profitable alternative, ranking fourth among the eleven strategies. However, the fluctuations reveal the importance of evaluating marketing information and carefully choosing a strategy. Also the value of having a minimum price locked in must be considered.

Corn

General Results

In general, the net returns varied substantially between corn marketing strategies. Over the 6-year period the most profitable strategy yielded an average net return of $2.21 which was $.26 or 12.5% greater than early forward selling, the poorest strategy that had an average net return of 1.95 (Table 6).

If a variable marketing program had been used which selected the most profitable strategy each year, net returns would have averaged $2.68, while the least profitable strategy would have yielded an average return of $1.58 (Table 9).

Specific Results

No corn marketing strategy consistently outperformed other strategies. In fact, corn stored until mid-August

Table 6. Net Prices Generated by Alternative Corn Marketing Strategies.*

Marketing Strategy	1972 Return	Rank	1973 Return	Rank	1974 Return	Rank	1975 Return	Rank	1976 Return	Rank	1977 Return	Rank	Average Return	Rank
A. Cash Marketing Strategies														
Sell at harvest	$1.03	9	$1.87	8	$3.27	3	$2.27	8	$2.40	7	$1.64	10	$2.08	5
Short-term storage	1.13½	6	2.19½	4	2.54	8	2.15½	10	2.43	5	1.80	6	2.04½	8½
Long-term storage	2.14½	1	3.01½	1	2.66½	7	2.32½	4½	1.23½	11	1.35	11	2.12½	3
Multiple sales at storage	1.22	3	2.11	5	2.07½	6	2.32½	8	2.21	8	1.70	8	2.04½	8½
Multiple sales after extended storage	1.58	2	2.49½	2	2.49	9	2.36	2	1.76	10	1.68½	9	2.06	7
Multiple sales after short-term storage	1.20½	4	2.23	3	2.31½	11	2.29	7	2.20	9	1.81½	5	2.02½	10
B. Forward Pricing Strategies Involving Futures Contracts														
Early forward selling	.93	11	1.44½	10½	2.48½	10	2.11	11	2.55	2	2.17½	2	1.95	11
Early forward selling with a roll ahead	1.05½	8	1.44½	10½	2.79	5	2.18	9	2.57	1	2.43	1	2.07½	6
Late forward selling	.99½	10	1.96½	6	3.00½	4	2.31½	6	2.44½	4	1.79½	7	2.08½	4
Late forward selling with a roll ahead	1.12	7	1.94½	7	3.29	2	2.38½	1	2.47	3	2.06	3	2.21	1
Hedging the stored crop	1.14½	5	1.85½	9	3.54½	1	2.34	3	2.42½	6	1.92	4	2.20½	2

Six year average......2.08

*The net price reflects the market price received less marketing costs such as storage, brokerage fees, opportunity cost based on borrowed capital, and interest charges on margin requirements. Prices represent eastern South Dakota cash prices and Chicago Board of Trade Futures prices.

yielded the highest net return 2 years
and the lowest net return 2 years.

The value and necessity of con-
stantly monitoring marketing information
and price trends when making marketing
decisions is shown by the variance of
the net returns from corn sales.

Strategy 1. Sell at Harvest

Selling corn at harvest resulted in
an average net return which was approx-
imately equivalent to the average net
returns for corn under all strategies.

This suggests that selling corn at
harvest will provide average returns
with no marketing costs or effort.
However, since this strategy ranked
tenth for soybeans, general adoption may
be inhibited.

Strategy 2. Short-Term Storage

A higher net return was received
from selling corn after short-term
storage than from selling corn at
harvest in 4 out of the 6 years. How-
ever, during the 1974 crop year, corn
prices decreased about $.70 shortly
after harvest. This caused the average
net return from the short-term storage
strategy to be lower than selling at
harvest.

Strategy 3. Long-Term Storage

Selling corn after long-term
storage yielded the highest net return
in 1976 and 1977.

This suggests that storing corn for
8 to 10 months may be highly profitable,
but also may be subject to risk and
adverse price movements in some years.
Therefore, farmers should carefully
evaluate their ability to contend with
adverse price movements before attempt-
ing to store corn for this length of
time. They also should consider market-
ing costs which are approximately $.25
to $.35 for long-term storage of corn.

Strategy 4. Sale at Harvest and After Storage

This strategy was more profitable
than selling at harvest 4 out of the 6
years, but it averaged a lower return
because it was significantly lower in
1974 and 1976. The rank of this strat-
egy was 3, 4, 5, 6, 8, 8 over the six
years, close to the average. Both 1974
and 1976 were drought years.

Strategy 5. Multiple Sales After Extended Storage

The results of this strategy were
similar to Strategy 4, averaging slight-
ly lower than the mean, but ranking
second 3 years and ninth or tenth the
other 3.

Thus, this alternative was subject
to extensive fluctuation.

Strategy 6. Multiple Sales After Short-Term Storage

This strategy yielded an average
return that was $.05½ lower than selling
at harvest. The net return was lower
than the harvest return during 3 of the
6 years.

Corn sold under the three multiple
sale strategies (Strategies 4, 5, and 6)
yielded neither low nor high net returns.
This suggested that more frequent mar-
ketings will tend to average the low and
high corn prices during the crop year,
resulting in a more consistent net
return from year-to-year.

Strategy 7. Early Forward Selling

Early forward selling of corn, as
with soybeans, was the poorest of the
strategies analyzed. It showed the
second highest return 2 years and the
lowest or second lowest the other 4.
Overall, this strategy yielded low
average returns.

However, had farmers used and
understood market outlook information
which indicated large U.S. plantings,

they could have protected themselves against the adverse price movement which occurred during the 1976 and 1977 growing season.

Strategy 8. Early Forward Selling with a Roll Ahead

Early forward selling and rolling ahead the futures contract provided the highest net return during 2 of the 6 years. And rolling ahead the contract improved the average return over Strategy 7 by $.12½.

Strategy 9. Late Forward Selling

Forward selling the crop during the late growing season yielded fairly good results during 5 of the 6 years and generated returns of $2.08½ which exceeded selling at harvest. The heavy Russian purchases of 1972 caused this option to rank tenth that year.

Strategy 10. Late Forward Selling with a Roll Ahead

Late forward selling and rolling ahead the futures contract provided the highest average return, and the yearly return also proved very favorable, ranking 1, 2, 3, 3, 7, and 7 over the 6 years. The average return was $2.21 which was $.13 more than the return secured from selling at harvest.

Rolling ahead futures contracts after harvest proved profitable, on the average, under each strategy.

Strategy 11. Hedging the Stored Crop

The last strategy, hedging the stored crop after harvest and taking a basis gain, proved to generate the second largest average net return and provided good results during 5 of the 6 years. Had this strategy been used only when the basis was historically wide, it undoubtedly would have been the most profitable strategy.

Using the Local Basis

Because the basis on soybeans narrowed sufficiently, placing a storage hedge on soybeans proved profitable 2 of the 6 years. The gain was sufficient to offset the loss from the other 4 years.

On the other hand, hedging corn proved profitable 5 of the 6 years (Tables 7 and 8). Generally, the corn basis followed a more regular, and therefore more predictable, pattern. It normally varied between $.45 and $.65 per bushel at harvest and narrowed an average of $.33 during the marketing year during the period of the study.

Profitability of storage hedges can be determined by comparing the amount the basis narrows with marketing costs between the time the crop is placed in storage and the hedge is lifted.

For example, in 1972, the soybean basis was $.48 under the July future at harvest, and in March the basis became $.16 over the July future and remained so until April. The basis narrowed $.64 per bushel, and marketing costs were $.19½ from harvest to March. Thus, profit from the storage hedge in 1972 was $.44½ per bushel.

Farmers should keep "local basis" records so they can: (1) forecast basis movements for their particular area, and (2) estimate their return from forward pricing with futures.

Summary

Every year South Dakota farmers make important production and marketing decisions that affect the profitability of their operations. Their marketing knowledge and preferences influence when and how they market grain. Some farmers fear price decreases, so they look for opportunities to minimize price risk. Others anticipate price increases and prefer to speculate by storing grain. Whatever their philosophical position,

Table 7. Basis Table: Local Cash Soybean Price Relationship to the
Chicago July Futures, 1972-1977.

Time/Year	1972	1973	1974	1975	1976[1]	1977
Last Week of October	-.48	-.60	-.91	-.72	-.62	-.89
Last Week of January	-.14	-.78	-.58	-.67	-.54	-.69
Mid Week of March	+.16	-.86	-.52	-.56	-.49	-.85
Last Week of April	+.09	-.55	-.05	-.47	-.55	-.70
Last Week of June	-.81	-.62	-.38	-.46	NA	-.56
Basis Gain[2]	.64	.05	.86	.25	.13	.33
Marketing Costs[3]	.19½	.34½	.45½	.33	.31½	.48
Profit from Basis Hedge	.44½	(.29½)	.40½	(.08)	(.28½)	(.15)

[1]In 1976 a May futures was sold because no carrying charge existed between the July and May futures.

[2]Basis gain is the amount the basis narrowed between harvest and when the futures contract was lifted. The futures contract was lifted when the difference between cash and futures prices was at its narrowest margin.

[3]Marketing costs include: storage cost, opportunity cost, brokerage fees, interest costs on margin deposits and margin calls for sales under the strategy that forward priced or hedged the grain at harvest (11).

farmers should evaluate their situation and develop a market plan which maximizes income consistent with their risk acceptance level.

Over the 6-year period of 1972 through 1977, no strategy consistently out-performed the others. In fact, a strategy which proved to be the most profitable one year might prove the least profitable the following year. Further, a strategy which proved profitable for corn did not necessarily prove profitable for soybeans, even during the same year.

Generally, but not always, either short or long-term storage proved profitable for both commodities. However, long-term storage was subject to significant price risk. Forward pricing with futures contracts generally increased the net returns for corn, and hedging a stored crop usually increased net returns while reducing risk substantially.

The greatest return was generated by altering marketing strategies each year to reflect current conditions.

Specifically, for the corn and soybean marketing years 1972 through 1977, the most profitable strategy yielded about a 15% greater net income compared to the least profitable. Through using a variable marketing strategy and selecting the strategy

Table 8. Basis Table: Local Cash Corn Price Relationship to the
Chicago July Futures, 1972-1977.

Time/Year	1972	1973	1974[1]	1975	1976	1977
First Week of November	-.45	-.58	-.65	-.60	-.30	-.69
Last Week of January	-.25	-.76	-.51	-.48	-.14	-.42
Mid Week of March	-.38	-.66	-.40	-.36	-.16	-.59
Last Week of April	-.38	-.39	-.12	-.32	-.06	-.24
Last Week of June	-.45	-.58	NA	-.50	-.14	-.69
Basis Gain[2]	.20	.19	.53	.28	.24	.45
Marketing Costs[3]	.07½	.20½	.25½	.21	.21½	.18
Return from Basis Hedge	.12½	(.01½)	.27½	.07	.02½	.27

[1]In 1974 a May futures was sold because no carrying charge existed between the July and May futures.

[2]Basis gain is the amount of the basis narrowed between harvest and when the futures contract was lifted.

[3]Marketing costs include: storage cost, opportunity cost, brokerage fees, interest costs on margin deposits and margin calls for sales under the strategy that forward priced or hedged the grain at harvest (11).

which proved most profitable each year, the net return could be increased 18% over using the most profitable single strategy (Table 9).

Strategies are important, but no one strategy is successful every year. The marketing plan adopted may vary from year to year and from crop to crop in

Table 9. Strategy Comparison for 1972 through 1977 Marketing Years.

	Soybeans	Corn
Poorest Strategy	$5.10	$1.95
Average Results	5.40	2.08
Best Strategy	5.91½	2.21
Variable Strategy*	6.81	2.68

*The variable strategy combined the best results from each individual year.

the same year. If a producer is to use various marketing strategies successfully, he must evaluate the total supply of that grain and substitute grains, the expected use, and the amount of ending stocks after supply and use are determined. An increasing carry-over indicates lower prices and a decreasing carry-over indicates rising prices.

Normally during a year of decreased production, prices peak early, and large production usually pays a producer to forward price or store for basis gain.

Recommendations

These results suggest that farmers can increase their profitability by adopting an effective corn and soybean marketing program. The first step is to carefully evaluate personal needs and the amount of risk you are willing to assume.

The second step is to constantly remain well informed by monitoring the market information available--information such as production, carry-over, demand, and public programs. One factor useful in interpreting this information is the futures markets with the local basis used to localize the futures price. The third step to profitable marketing is to modify marketing strategies in response to changes in information.

Finally, remain flexible; perhaps you will even change strategies within a marketing year as fundamental conditions change.

APPENDIX

Other Studies Evaluating Marketing Alternatives

Lutgen searched for a marketing alternative that consistently increased income from soybeans.[9] After evaluating seven cash and futures marketing strategies with price data from Nebraska from the 1971 through 1976 crop years, he concluded that no alternative consistently generated a higher income because of fluctuations in prices during the crop year. Furthermore, over the years, little difference in income resulted from various marketing strategies. Thus, regardless of the strategy chosen, a producer's income would not change significantly over the long run. However, a flexible marketing strategy that chose the best alternative each year yielded a much higher income. This demonstrated that understanding and using all information available may result in a substantial increase in income.

Wisner evaluated the past success of seven marketing strategies and forecasted their future success using historical corn and soybean prices for Central Iowa from 1959 through 1975.[7] He found that short-term storage (2 to 3 months) for corn and soybeans was generally profitable, storage until summer was profitable approximately half of the time, and storage until the next crop year was rarely profitable. Although long-term storage (8 to 10 months) was not normally profitable, the average potential price for long-term storage was higher because of substantial price increases during storage in some years.

Bolen, Baker, and Hinton evaluated twelve corn and soybean marketing strategies using the estimated production from a 600 acre farm, corn prices from 1965 through 1974 for Central Illinois, and commercial storage rates.[10] They found that marketing strategies which yielded higher prices had greater price risk. And that strategies with low price risk generally yielded lower than average prices.

Wirak used historical wheat prices for the Pacific Northwest to evaluate marketing strategies including the use of the basis.[1] He stated that producers should understand what causes the basis to strengthen and weaken and be able to anticipate the timing and direction of basis movements with accuracy. Then producers should establish a basis gain objective before selling futures contracts and lift the hedge when the objective is achieved.

Wisner examined Central Iowa cash soybean prices from 1971 through 1975 to find which day had the highest and lowest price during the week.[11] He discovered that 34.9% of the week's highs occurred on Friday, while 36.5% of the week's lows occurred on Monday. Tuesday had the lowest percentage of high prices and Thursday had the lowest percentage of low prices.

The monthly variations in the cash prices of both soybeans and corn were examined by Shirk.[12] She found that the prices for both commodities were normally lower after harvest and soybean prices were usually highest during April, May, June, and July, while corn prices were usually highest during July, August, and September. However, there were exceptions to the pattern, and occasionally prices peaked at or before harvest and declined thereafter.

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