

Cash-Futures Price Relationships Guides to Grain Marketing

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Grain markets in recent years have been highly volatile, making price forecasting increasingly difficult. Some of this price volatility is due to the increased export demand for grain. The United States now sells sizeable percentages of its major grains and soybeans to foreign buyers. Export demand is, however, highly variable, and the price effect of a large buyer entering or leaving the market can be substantial. Diverse weather conditions here and abroad also cause unpredictable grain prices.

Price variability is a complex problem for grain farmers as well as marketing firms such as country elevators. Marketing decisions involving when to sell and when to store are increasingly important. This increased price variability affects farmers in three ways: (1) They cannot be sure of recovering production costs when grain is ready for sale; (2) the value of grain in storage is subject to wide fluctuation; (3) the cost of feed to livestock producers is uncertain, and their profit margins are jeopardized.

Farmers have been taking a closer look at risk management practices and are examining alternative methods of grain marketing and pricing. Futures markets provide tools for risk management and pricing; therefore, more farmers should learn to use them in marketing grain.

This study analyzes the relationship between cash and futures prices over the three crop years 1972-73 through 1974-75 for corn, soybeans, and wheat at selected country locations in Minnesota. A study of the basis, the relationships between cash and futures prices, is important because it is a highly serviceable guide to decisionmaking in the storage or sale of grain. There are explanations of futures markets' use in pricing grain in storage, under production, or for purchase as livestock feed.

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FUTURES MARKETS AND PRICES

A futures market is a market in which contracts for future delivery are traded. Prices of futures contracts are determined by auction in a trading pit; the trading is conducted only at designated times and takes place under rules and regulations of a grain exchange. All terms of futures contracts, except the price, are standardized by the exchange. A futures contract calls for delivery of a specified quantity and quality of grain at a specified place or places in some designated month in the future. These contracts are binding, and their integrity is preserved under the rules and regulations of the exchange.

This study uses futures prices of corn, wheat, and soybeans. Corn and wheat futures are traded for September, December, March, May, and July. Soybean futures are traded for September, November, January, March, May, July, and August. The corn and soybean futures studied are traded on the Chicago Board of Trade, while the wheat futures are those of the Minneapolis Grain Exchange which has a spring wheat futures contract. Most of the wheat raised in the Upper Midwest is spring wheat.

An example of trading in a spring wheat futures contract at the Minneapolis Grain Exchange follows:

AUGUST 5, 1976

Trader A

Buys 5,000 bushels of December wheat at \$3.78.

Trader B

Sells 5,000 bushels of December wheat at \$3.78.

Trader A has entered into a contract to take delivery of 5,000 bushels of wheat in December and will pay \$3.78 per bushel. Trader B has entered into a contract to deliver 5,000 bushels of wheat in December and will receive \$3.78 per bushel. After the trade, each trader must deposit about \$2,000, as margin money, with the commission merchant through whom he makes the trade to guarantee contract performance.

If both traders leave their contracts open until the delivery month, the seller (Trader B) may deliver at any

time during December, and it is up to the buyer (Trader A) to accept delivery and pay for the wheat. If the seller decides to deliver on the contract, a warehouse receipt is delivered representing 5,000 bushels of No. 2 Northern Spring Wheat, 13.5 percent protein, stored in a public terminal elevator at Minneapolis or Duluth that has been declared regular by the Minneapolis Grain Exchange. An alternate grade or protein content spring wheat may also be delivered at designated premiums or discounts.

Very few futures contracts are settled by delivery as just described. They are usually settled by offsetting purchases or sales of futures contracts sometime before the delivery month (illustration follows).

SEPTEMBER 10

Trader A

Sells 5,000 bushels of December wheat at \$3.60.

Trader B

Buys 5,000 bushels of December wheat at \$3.60.

Trader A loses 18¢/bu. and \$900 on the contract.

Trader B gains 18¢/bu. and \$900 on the contract.

Each of these traders has satisfied the obligation regarding delivery after offsetting trades are made. Traders A and B need not make offsetting trades by dealing with each other. Each may make an offsetting trade at any time after the original contract was made by dealing with another trader. This is possible since the Clearing House, an internal organization of the exchange, is an intermediary in all futures contracts.

While very few futures contracts are settled by actual delivery, the privilege of making or taking delivery is important because it is the delivery mechanism that equates cash and futures prices in the delivery month at the delivery point. The futures price becomes the cash price in the delivery month, and the delivery mechanism assures this equality. It is significant that futures contracts are not often used for the actual purchase or sale of grain. Rather, they are used for forward pricing of grain and hedging.

There is a widespread view that futures markets are primarily speculative markets and should be ignored by

producers and marketing firms not interested in speculation. This is not true because grain futures markets depend on commercial use for hedging and forward pricing for existence. The increased volume of trade on futures markets in recent years reflects increased hedging business prompted by greater price risks associated with carrying grain inventories. Private firms and producers now carry all the grain inventories since the U.S. Government has disposed of its stocks.

This study deals with the commercial use of futures markets by farmers and marketing firms for forward pricing and hedging. Before futures markets are used as a marketing tool, however, it is necessary to understand cash-futures price relationships.

CASH-FUTURES PRICE RELATIONSHIPS

Understanding the relationship between cash and futures prices is the most important element in the effective use of futures markets for forward pricing and hedging. Changes in the relationship between cash and futures prices over the marketing year are more predictable than changes in the price level of cash grain.

The difference between the futures price and the cash price is the cash basis or basis. Changes in the basis can be forecast because the cash and futures price must be nearly equal in the delivery month at the delivery point. For locations other than the delivery point, a similar relationship exists, but the cash price will be lower than the futures price reflecting transportation costs to the delivery point. The cash price at the outside location will not always reflect full transportation costs to the delivery point if the local supply and demand situation differs from that at the delivery point.

When cash prices are at wide discounts to futures prices, the basis is weak. When the difference between cash and futures prices is small, the basis is strong. A movement in the basis from a weak position to a strong one is a strengthening of the basis, while the reverse is a weakening of the basis.

The relationship between cash and futures prices represents a price of storage. When cash prices are at wide discounts to futures prices, there is a positive storage price. This is the time to store cash grain and hedge it through the sale of futures contracts to earn returns on storage. As the delivery month approaches, cash prices strengthen relative to futures prices. The gross return earned on the storage is equal to the amount by which the basis strengthens.

A market in which storage prices are positive is referred to as a carrying charge market (illustrated for corn on the left side of table 1). Note that on October 15 the cash price for corn is \$2.30/bu. The near future (De-

cember) is \$2.36, while each successive distant future is priced higher, ending with September at \$2.80. A carrying charge market often occurs in years of large crops when supplies are abundant; the market provides an incentive for marketing firms to purchase and store cash grain and hedge it by selling futures to "earn the carrying charge."

An example of "earning the carrying charge" on a storage hedge in this carrying charge market follows.

	Cash	Futures	Basis
Oct. 15 Buy 10,000 bu. corn	2.30	Sell 10,000 bu. July futures	2.74 .44
July 15 Sell 10,000 bu. corn	2.20	Buy 10,000 bu. July futures	2.20 0
Loss10	Gain54 .44

Note that on October 15 the grain merchant purchased 10,000 bushels of cash corn and hedged it through the sale of 10,000 bushels of July futures. The cash price is 44¢ under July futures. On July 15 the corn is sold and the hedge lifted through the purchase of July futures. Even though prices had declined, the merchant's net gain was 44¢ per bushel, or the amount by which the basis strengthened. The basis strengthened

Table 1. Illustrations of a carrying charge market and an inverted market in corn

	Carrying charge market (Positive returns to storage)	Inverted market (Negative returns to storage)
	October 15	October 15
Cash price	2.30	2.60
December future	2.30	2.55
March future	2.48	2.50
May future	2.60	2.45
July future	2.74	2.40
September future	2.80	2.35
	Occurs in years when supplies are abundant	Occurs in years when supplies are short
	Purchase cash grain, hedge it by selling futures to earn a carrying charge	Usually better to sell for current delivery rather than store for future delivery

from 44¢ under to zero. This movement and rate of return could be predicted on October 15 when the storage hedge was placed because the cash and futures prices come together in the delivery month at the delivery point. It did not matter what happened to the price level: returns to storage were earned through a change in the basis.

This example illustrates the existence of storage hedging opportunities in a carrying charge market. When supplies are large and cash prices are depressed relative to futures prices, storage prices are high. Farmers can take advantage of these high storage prices by storing corn and selling futures.

When grain supplies are short relative to demand, cash-futures price relationships reflect negative prices of storage. In such periods, the demand for the cash grain for current delivery pulls cash prices to premiums over prices for future delivery. Markets are then inverted or inverse carrying charges prevail (see righthand column, table 1). The market is paying \$2.60/bushel for current delivery on October 15, while corn for delivery in July is priced at \$2.40/bushel. This is equivalent to a negative price for storage. So, when markets reflect inverse carrying charges, it is usually better to sell for current delivery than to store for future delivery.

USING THE BASIS AND FUTURES MARKETS

In this study, the basis for corn and soybeans was calculated at Marshall, in southwestern Minnesota, and at Stewartville, in southeastern Minnesota: the basis for wheat was calculated at climax, on northwestern Minnesota (appendix tables A1 through A5). Cash bids to farmers from country elevators at each of these locations on one day each week were subtracted from the future price to obtain the basis for each of the futures months.

Since the information contained in the remainder of this publication is taken from tables A1 through A5, explanation is necessary. Table 2 comes from table A1 and has the essential features of the appendix tables. Table 2 shows Marshall cash bids to farmers, Chicago Board of Trade July futures prices, and the July basis for corn from October 4, 1974 to July 31, 1975. The table reads horizontally. The date is in month/day/year format, and all prices are in dollars per bushel. The July basis on any day is equal to the July futures price minus the cash price. It has no plus (+) or minus (-) sign if the cash price is less than the future price. If the cash price exceeded the future price, then there is a minus sign in front of the basis.

Table 2. Marshall cash bids to farmers, Chicago Board of Trade July future price and July cash basis, corn, October 2, 1974-July 31, 1975.

Date	Marshall cash bid	Chicago July future price	July basis	Date	Marshall cash bid	Chicago July future price	July basis
10/2/74	3.48	3.96	.48	3/6/75	2.52	2.84	.32
10/9/74	3.34	3.95	.61	3/13/75	2.57	2.86	.29
10/16/74	3.39	3.97	.58	3/20/75	2.56	2.82	.26
10/23/74	3.29	3.91	.62	3/27/75	2.73	2.94	.21
10/30/74	3.26	3.93	.67	4/3/75	2.68	2.94	.26
11/6/74	3.37	3.94	.57	4/10/75	2.53	2.86	.33
11/13/74	3.26	3.87	.61	4/17/75	2.63	2.86	.23
11/20/74	3.09	3.71	.62	4/24/75	2.67	2.86	.19
11/27/74	3.17	3.75	.58	5/1/75	2.53	2.75	.22
12/5/74	3.23	3.78	.55	5/8/75	2.55	2.72	.17
12/12/74	3.19	3.67	.48	5/15/75	2.62	2.71	.09
12/19/74	3.13	3.56	.43	5/22/75	2.65	2.76	.11
12/26/74	2.89	3.30	.41	5/29/75	2.55	2.68	.13
1/3/75	3.01	3.43	.42	6/5/75	2.57	2.75	.18
1/10/75	3.01	3.40	.39	6/12/75	2.58	2.77	.21
1/17/75	2.68	3.21	.53	6/19/75	2.65	2.84	.19
1/24/75	2.72	3.22	.50	6/26/75	2.60	2.83	.23
1/31/75	2.73	3.14	.41	7/3/75	2.59	2.80	.21
2/7/75	2.77	3.16	.39	7/10/75	2.60	2.83	.23
2/14/75	2.79	3.12	.33	7/17/75	2.57	3.01	.44
2/21/75	2.50	2.84	.34	7/24/75	2.71	NT*	—
2/28/75	2.30	2.64	.34	7/31/75	2.85	NT*	—

*No trading.

Figure 1 graphs the July basis for corn at Marshall for 1974-75 (table 2). In its construction, the July futures price on any day is taken to be zero, and the basis is plotted to the proper number of cents below the zero mark. As an example, on October 30, 1974, the July basis at Marshall was 67¢ (table 2). Hence, the cash price was 67¢ less than the futures price on that day. Thus, in figure 1 the basis is plotted 67¢ below the zero mark. The figure then represents the movement of the cash price relative to the futures price.

Once information on the basis is obtained, the question follows: "How does the basis behave during a marketing year?" Earlier it was shown that in a carrying charge market, cash prices are depressed relative to futures prices. This type of market is typical at harvest when large quantities of corn are coming on the market and elevator and transportation facilities are being used to near capacity levels. These factors tend to depress cash prices. A weak basis should be expected in the fall of the year; the difference between cash and futures prices is large in the near month and larger still in distant months. The futures market offers premiums in

the distant months to encourage storage of grain. This suggests that the basis is representative of the storage price the market is willing to pay. Later in the year when elevator and transportation facilities are not so pressed and stocks of corn in marketing channels decline, the market becomes unwilling to pay for storage, and the difference between cash and futures prices becomes less: the basis strengthens (figure 1). Typically, the basis is wide during harvest, with a gradual strengthening of the basis as the marketing year progresses.

The Basis for Corn

Figure 2 shows the average July basis for the three crop years: 1972-73, 1973-74, and 1974-75. The average basis is weakest in the fall and expectedly strengthens in spring. During harvest, the average basis is in the 50¢-55¢ range. Beginning in late November, the average basis strengthens until late December or early January when it reaches the 40¢-45¢ range. The average basis remains at this level until sometime in March when it again begins to strengthen, finally reaching a minimum

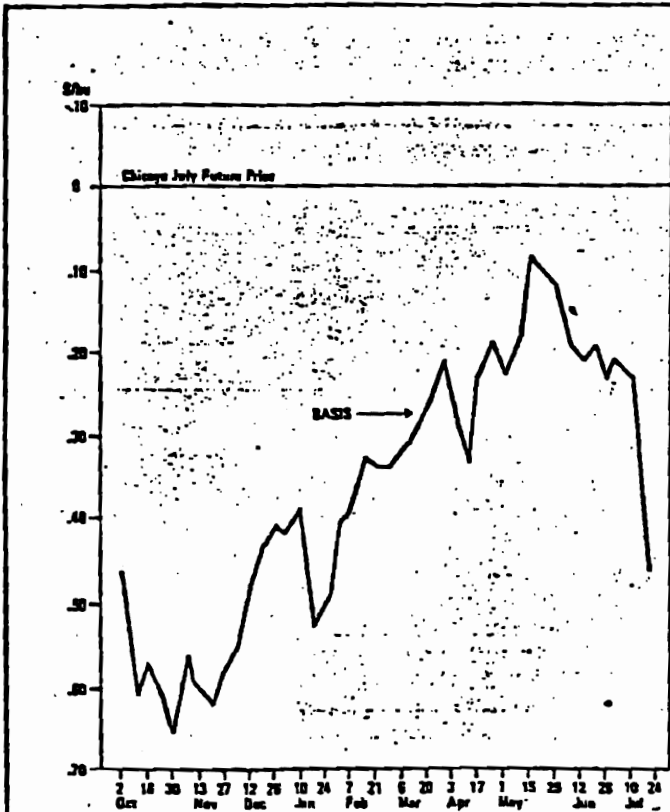


Figure 1. Weekly July basis for corn at Marshall, Minnesota, 1974-75

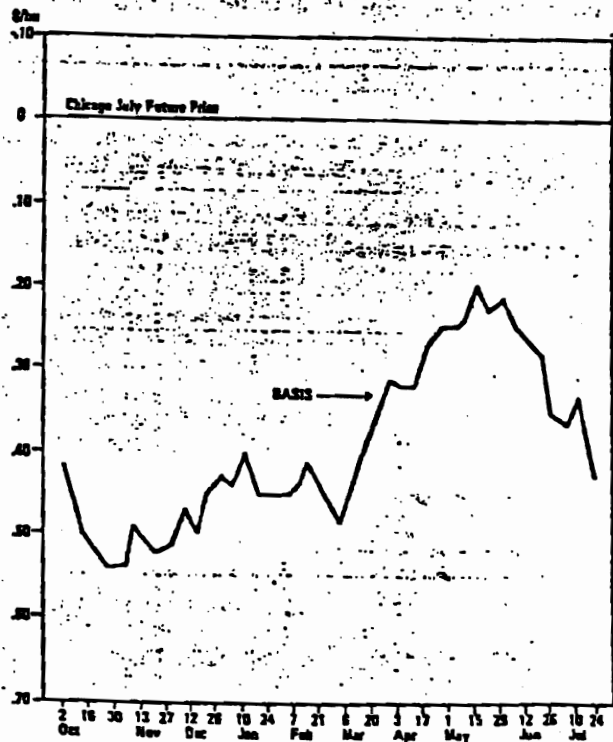


Figure 2. Weekly July basis for corn at Marshall, Minnesota, 1972-73 average

in mid-May at the 20¢-25¢ level. After May, the average basis once again weakens until July when it is at the 35¢-40¢ level.

Figures 1, 3, and 4, respectively, show basis charts for the individual years 1974-75, 1972-73, and 1973-74. Information in these figures is from table A1. Note that the basis in each individual marketing year follows the same general trend as the average, although it differs yearly. In 1974-75, figure 1, the typical narrowing of the basis from a weak position in the fall to a stronger one in the spring is obvious. In figure 4, 1973-74, the basis starts in a weak position in fall and remains weak until March when it begins to strengthen. Figure 3, 1972-73, is the least perfect example: the basis strengthens early, then weakens slightly to the 30¢ level where it remains until late June and July.

In all of the charts, a strengthening in the basis occurs sometime between the fall low and December or January. In 1973-74, the strengthening is small and comes early in November, then weakens. In 1972-73 and 1974-75, the basis strengthens about 20¢-25¢ per bushel from November-January.

The basis seems to be the strongest in May or early June in all years except 1972-73, but even then the May-June level was within 5¢ of the actual minimum. Late June and early July characteristically bring a weakening of the basis. The strengthening of the basis in July 1973 was due to an extreme corn shortage and a rapid rise in price to draw any unsold corn into marketing channels.

Pricing Corn in Storage

These basis movements can be used in marketing decisionmaking. Suppose a farmer near Marshall, Minnesota in fall 1974 is harvesting corn. He knows that on the average the basis will be in the 50¢-55¢ range at its weakest point during harvest. Each day he calculates the basis by subtracting the local elevator bid price from the closing price of the Chicago Board of Trade July corn future. On October 30 he notes the basis is 67¢, much wider than average (figure 1). The market is offering a large incentive to store grain. This provides the opportunity to earn higher returns for storage than are usual through hedging. On the average, the strongest point of

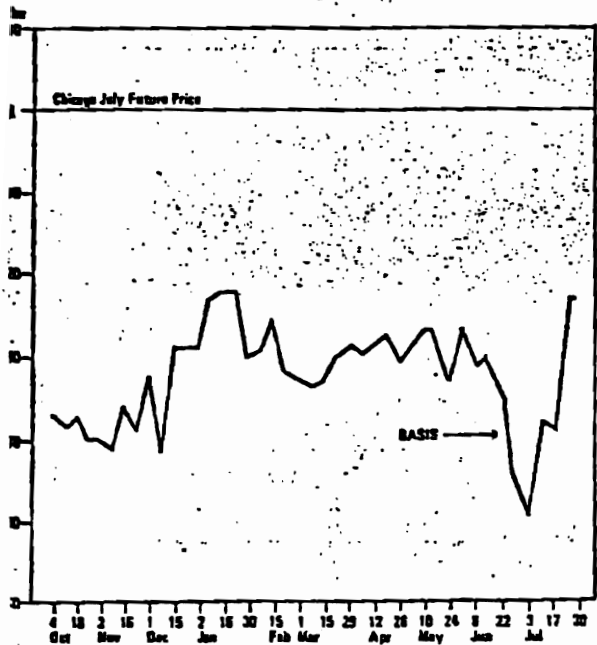


Figure 3. Weekly July basis for corn at Marshall, Minnesota, 1972-73

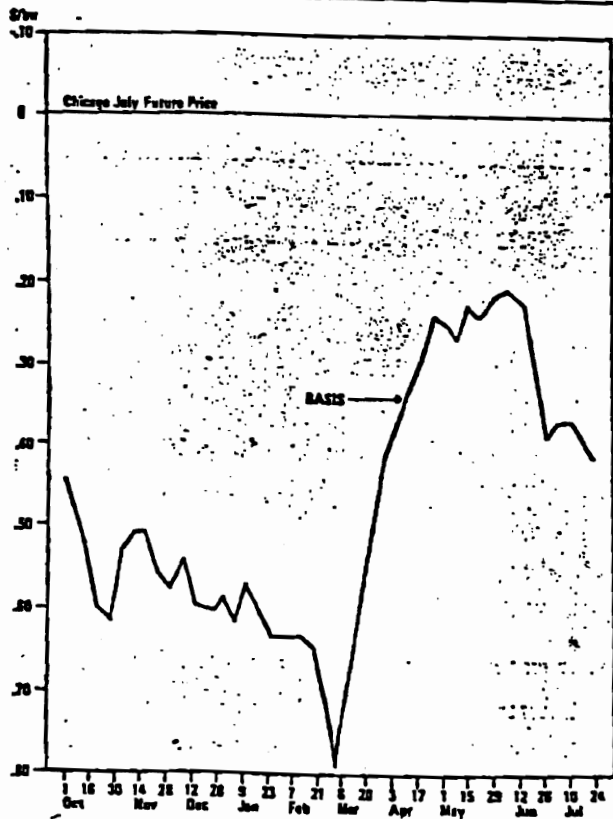


Figure 4. Weekly July basis for corn at Marshall, Minnesota, 1973-74

the basis comes in May when it is in the 20¢-25¢ range. Since the basis is at 67¢ now and is expected to strengthen to the 20¢-25¢ range, the price the market offers for storage is near 45¢ per bushel.

On October 30, the July future price is \$3.93 per bushel. Since the closing basis is expected to be near 25¢ in May, subtracting this from \$3.93 yields \$3.68 as an estimate of the price to be received for corn at Marshall in May. Suppose the farmer feels this is a fair price and sells a July future to hedge corn. The corn is placed in storage. Now returns are earned only when the basis narrows. Thus, lifting the hedge when the basis is strongest will increase returns. Therefore the hedge should be lifted and the corn sold sometime in May: further storage would erode profits. On May 1 the basis is 22¢. This is near 25¢, as expected. The farmer can lift the hedge then or wait a little longer hoping for further strengthening of the basis. Suppose he decides to hold the grain a little longer. On May 15 the basis is 9¢, much stronger than expected. He decides to take advantage of this greater than normal strengthening of the basis and lift the hedge. The results follow:

Cash	Futures	Basis	
Oct. 30, 1974 Store corn	\$3.26	Sell July future \$3.93	.67
May 15, 1975 Sell cash corn	\$2.62	Buy July future \$2.71	.09
	Gain	1.22	Change .58

Selling the corn at the local elevator returns \$2.62/bushel. The gain in the futures market is \$1.22/bushel. Thus, the net realized price is \$2.62 + \$1.22 = \$3.84 per bushel. \$3.84 per bushel is exactly 58¢ more than the \$3.26 which could have been received at harvest. This 58¢ is the price received for storing the corn until May 15 and is exactly equal to the change in the basis. The price received, \$3.84, is greater than the price expected, \$3.68, because the basis is 16¢ stronger per bushel than anticipated.

It is interesting to compare the \$3.84 per bushel received through hedging with the price which would have been received had the corn been stored and not hedged. Table A1 shows the price at the local elevator fell and after mid-January 1975 and never again, until August, broke the \$3 level. The farmer would have re-

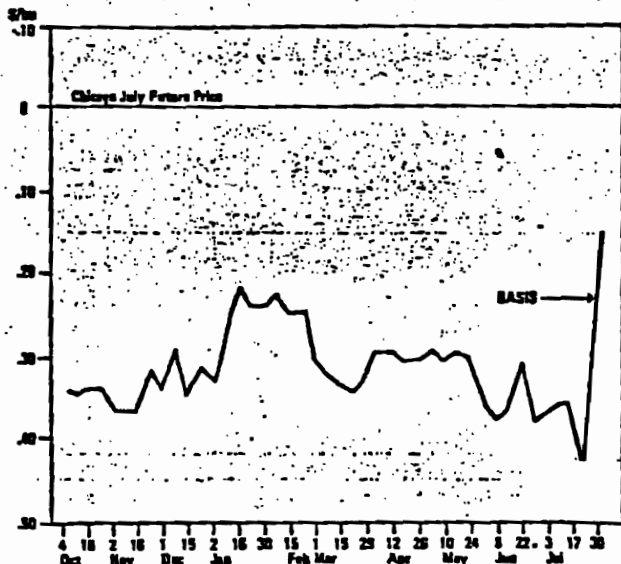


Figure 5. Weekly July basis for corn at Stewartville, Minnesota, 1972-73

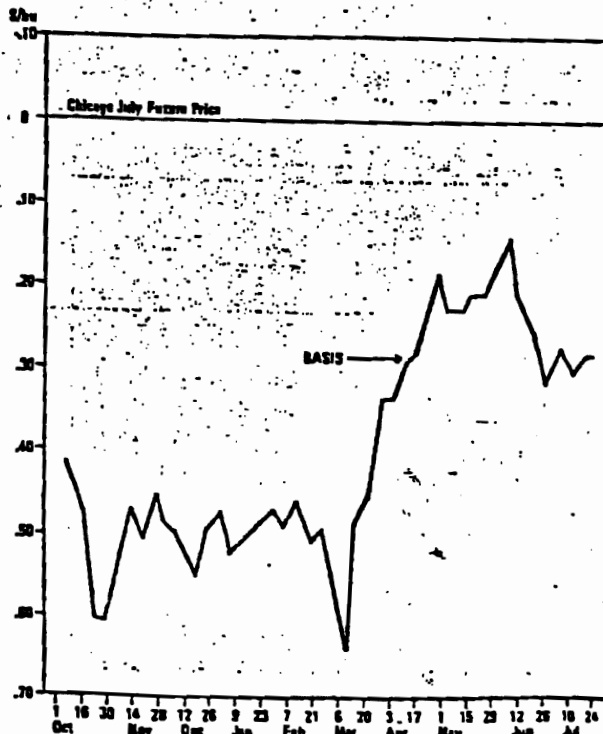


Figure 6. Weekly July basis for corn at Stewartville, Minnesota, 1973-74

ceived less for the corn if he had not hedged. If it had been held until May 15, he would have received \$2.62 for the corn, \$1.22 less than by hedging. This is 64¢ less than the \$3.26 which could have been received had he sold the corn on October 30 and never stored it at all. This is equivalent to paying 64¢ per bushel for the privilege of storing the corn. This does not consider the expenses incurred, cost of storage, and lost interest on the money obtained had the corn been sold October 30.

Figures 5, 6, 7, and 8 show the July basis at Stewartville, Minnesota for 1972-73, 1973-74, 1974-75, and the 1972-75 average, respectively. These were constructed from information in table A2.

Figure 8 shows that the average July basis at Stewartville follows the same weak-at-harvest and strong-in-spring pattern discussed earlier. The basis starts out in the fall at the 45¢-52¢ range and then strengthens until January after which it remains in the 34¢-43¢ range until March. Then it starts to strengthen again and by mid-May reaches its strongest point near the 20¢ mark. After May the basis weakens until July.

The basis in each of the marketing years (figures 5, 6, and 7) follows a pattern similar to the average although the basis pattern in each of the years is slightly different. The 1974-75 year, figure 7, follows a classic basis movement. It starts out weaker and peaks stronger than the average. There is a strengthening after harvest followed by a month in the 45¢-50¢ range. The final strengthening of the basis started earlier in this year than in the average. Figure 6 shows the basis for the 1973-74 marketing year behaved differently, strengthening early, then weakening into March when a pronounced strengthening again occurred.

The 1972-73 marketing year, figure 5, is the most unusual of the three. The basis strengthened in late December and in early January reached its strongest point. The basis then weakened until early March when there was a slight strengthening. After March the basis stabilized until late May when it again weakened.

The July basis at Marshall can be compared with the July basis in Stewartville for each of the marketing years. This is accomplished by a visual comparison of figures

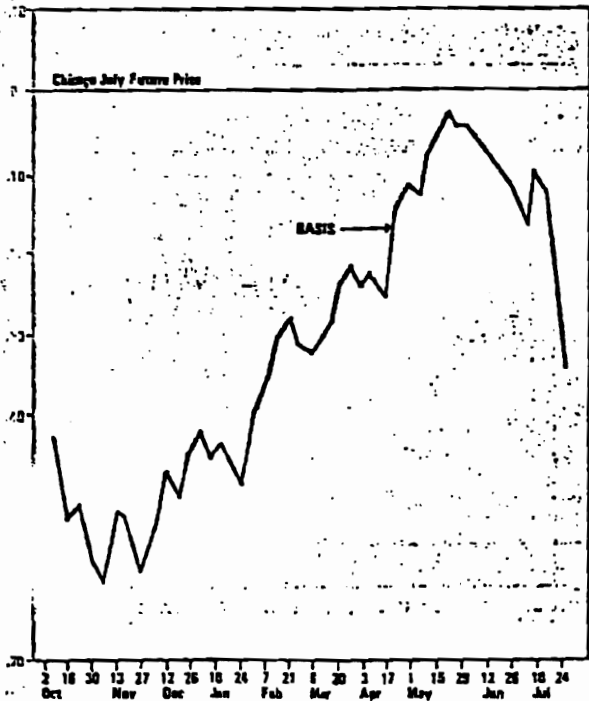


Figure 7. Weekly July basis for corn at Stewartville, Minnesota, 1974-75

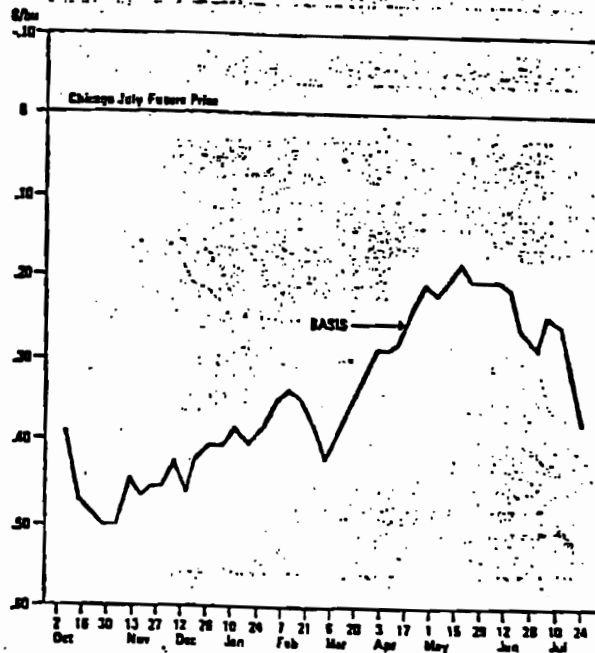


Figure 8. Weekly July basis for corn at Stewartville, Minnesota, 1972-75 average

1, 2, and 3 with figures 5, 6, and 7. There is a striking similarity in the pattern of the basis at the two locations. Figure 9 shows the average basis for both Marshall and Stewartville; the pattern is very similar although Marshall's basis seems to be wider than Stewartville's by a few cents per bushel. This reflects higher transportation costs in shipping corn from Marshall to terminal markets.

The similarity between the two in pattern of the basis seems to imply that both Marshall and Stewartville are in the same general market for corn. The bid prices the elevators offer to farmers are closely related, so the bid prices received by the elevators from terminal markets must also be nearly the same.

Forward Pricing of Livestock Feed

Another way in which futures markets are useful in a farming business is to price grain used as a livestock feed before purchase. Suppose in November 1973 a farmer is feeding cattle in Stewartville and knows that his corn will last until some time in May at present feeding rates. He wants to lock in a favorable purchase

price for corn to avoid the risk of a price increase between November and May. The futures market offers this opportunity.

In May, the July basis averages about 20¢ (figure 8). An estimate of the local price in May can be obtained by subtracting 20¢ from the July future price.

On November 7, 1973, the July future price was \$2.43. This implies an estimated local price of \$2.23 in May. Suppose the farmer feels this is a fair price, allowing a profit on the cattle feeding operation. To lock in this price he purchases a July future contract in corn. Later, on May 1, 1974, corn is purchased locally, and the futures contract is sold to lift the hedge. The following table details transactions.

Cash	Futures	Basis	
Nov. 7	Buy July future	\$2.43	.47
May 1 Buy corn	Sell July future	\$2.72	.23
	Gain	\$.29	Change .24

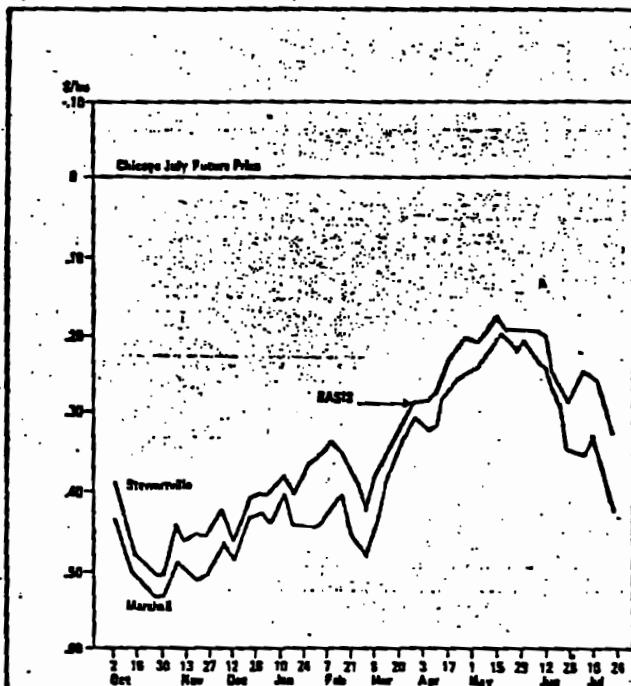


Figure 9. Weekly July basis for corn at Marshall and Stewartville, Minnesota, 1972-75 average

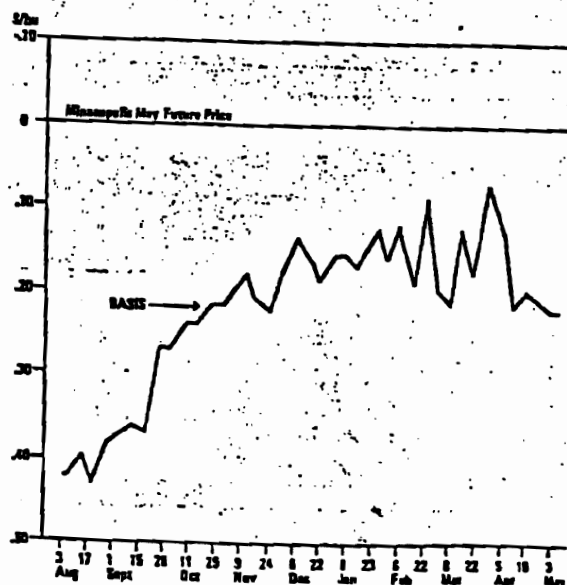


Figure 10. Weekly May basis for wheat, 13% protein, at Clu Minnesota, 1972-73

The net price paid for the corn was \$2.20, the local buying price of \$2.49 less the 29¢ gain in the futures market. This is 3¢ less than the estimated buying price. This discrepancy can be explained by the change in the basis. The ending basis was 3¢ weaker than expected. A gain is made in a buying hedge when the basis weakens or does not strengthen as much as anticipated. This is the exact opposite of a selling hedge when gains are made on the strengthening of the basis. This distinction is an important one to remember.

The Basis for Wheat

Wheat is another valuable crop to many Minnesota farmers. The basis to future months for spring wheat, 13 percent protein, at Climax in northwestern Minnesota was calculated between August 1972 and December 1975. The futures market quotations used in these calculations were from the Minneapolis Grain Exchange (table A3).

The May basis for wheat in 1972-73, 1973-74, 1974-75, and the average May basis for 1972-75 is shown in figures 10, 11, 12, and 13, respectively. Figure 13 shows

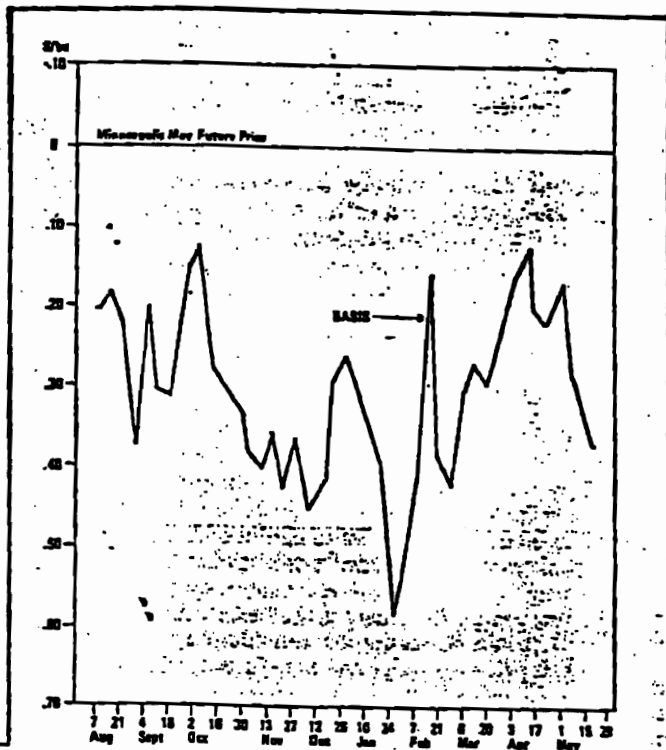


Figure 12. Weekly May basis for wheat, 13% protein, at Climax, Minnesota, 1974-75

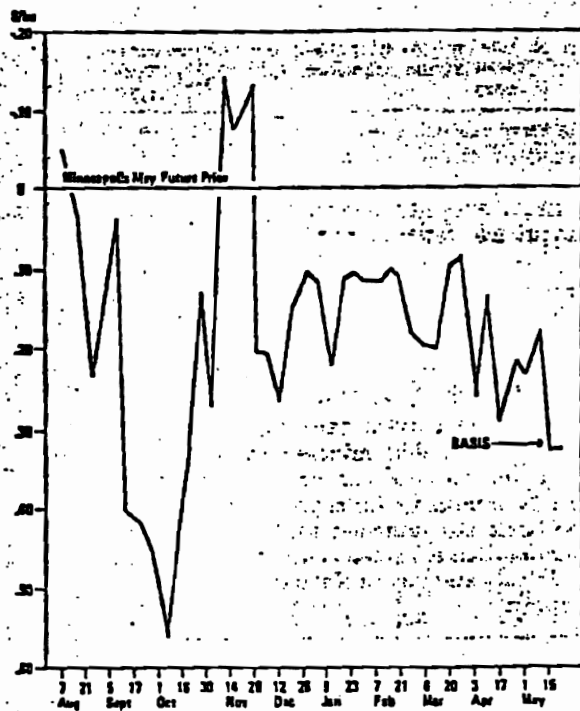


Figure 11. Weekly May basis for wheat, 13% protein, at Climax, Minnesota, 1973-74

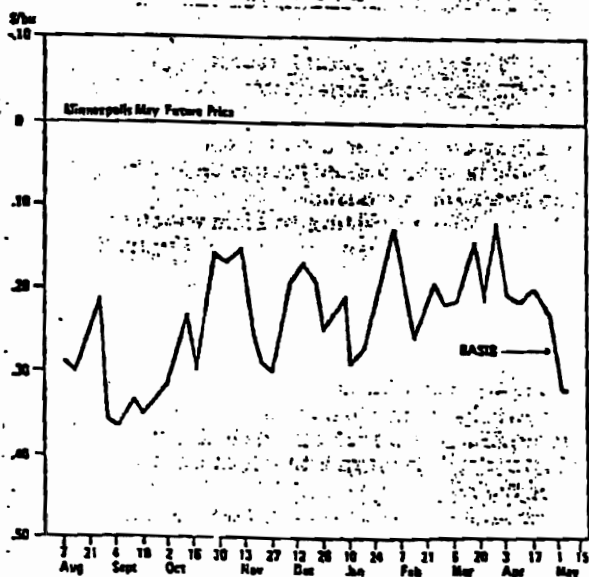


Figure 13. Weekly May basis for wheat, 13% protein, at Climax, Minnesota, 1972-75 average

that the average May basis in wheat behaves more erratically than the basis for corn examined previously. There seems to be a general strengthening trend from September-mid-April with a weakening in May. The basis, however, fluctuates considerably around this trend line.

In comparing the average with the individual crop years, it is not as easy to discern clear patterns as it was in corn. There does seem to be, however, a strengthening in October, another in late December, and yet another in March that carries through each of the marketing years.

The strongest point of the basis is not easy to predict since the basis is variable. However, in all years a storage hedge placed in late August or early September and lifted in mid-April would have returned 15¢-20¢ per bushel for storage services.

Pricing Wheat Under Storage

The July basis for wheat in fall is in the 30¢-35¢ range, while in April it is in the 15¢-20¢ range (figure 13). For unusual opportunities to earn a storage price, look for weaker or stronger basis points than these typical opening and closing ranges. An example is the 1973-74 marketing year. On October 1 the basis was 56¢. By November 7 it had strengthened considerably; in fact, the local cash price exceeded the May future price leaving a basis of -14¢. The results of a storage hedge placed on October 1 and lifted November 7 follow.

Cash	Futures	Basis
Oct. 1, 1973 Store wheat \$3.86	Sell May future \$4.42	.56
Nov. 7, 1973 Sell wheat \$3.97	Buy May future \$3.83	-.14
	Gain	\$.59 Change .70

On October 1 the anticipated net price was \$4.42 - 15¢ = \$4.27. The actual result was \$3.97 + .59¢ = \$4.56. The additional 29¢ received comes from the unexpected strengthening of the basis.

If the wheat had been sold on October 1, the price received would have been \$3.86 per bushel, but hedging brought an extra 70¢ per bushel.

There is one other marketing problem which has not yet been considered: pricing crops under production.

Pricing Grain in Advance of Production

The object in pricing crops under production is to lock in a price in advance of harvest which will cover production costs and allow a fair profit. To do this requires a knowledge of the closing basis. The beginning basis is unimportant. Subtracting the closing basis from the futures price will yield an estimate of the price to be received for the crop.

Figure 14 shows the closing basis for November soybeans at Stewartville in 1972, 1973, 1974, and 1975. The futures contract used is that of the Chicago Board of Trade. No average was calculated because extreme fluctuations in the soybean market during 1973 caused severe changes in the basis which would bias the average downward.

From figure 14, it is evident that the closing basis for the November future varies from year-to-year. However,

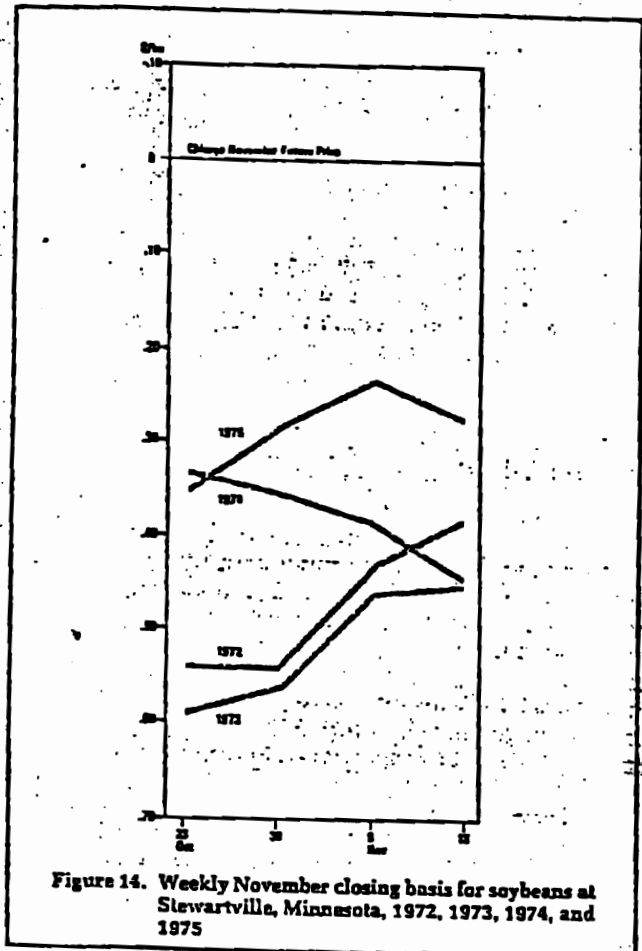


Figure 14. Weekly November closing basis for soybeans at Stewartville, Minnesota, 1972, 1973, 1974, and 1975

an estimate of 40¢-45¢ appears reasonable. In three of the four years the basis was in the 40¢-45¢ range in the first two weeks of November. This information is needed to price a crop under production using futures.

Suppose a farmer was at Stewartville in July 1975 with a growing crop of soybeans. On July 31 the November future is selling for \$5.86. Subtracting the estimated closing basis of 45¢ yields an expected local price of \$5.41 per bushel in November. A November future contract is sold to lock in this price.

The farmer then harvests the soybeans in the fall and watches the basis to determine a favorable time to sell the crop. If the basis is 45¢ or less, the farmer will receive \$5.41 or more for his soybeans. On November 6, 1975, the basis strengthened to 23¢, a much greater strengthening than expected. The farmer then sells the soybeans locally and buys a November soybeans future; results follow.

Cash	Futures	Basis
July 31	Sell November futures \$5.86	
Nov. 6, Sell soybeans \$4.72	Buy November futures 4.95	.23
	Gain	\$.91

The price received is \$4.72 + \$.91 = \$5.63. This is 22¢ more than expected because of the additional strengthening of the basis.

If the price had not been locked in, the farmer would have received only \$4.72 on November 6. The futures market offered the opportunity to lock in a much more favorable price before the crop was harvested.

SUMMARY AND CONCLUSIONS

Cash-futures price relationships are useful guides to successful grain marketing. Changes in the basis, the difference between cash and futures prices on any given day, are more predictable over a marketing year than changes in the level of cash prices alone. Changes in the basis over time can be forecast because the cash price becomes the futures price in the delivery month.

The basis represents a price of storage. When cash prices are at wide discounts to futures prices, positive storage prices prevail. The market is calling for grain to be stored and is willing to pay a price for storage. This is the time to store cash grain and hedge it through the sale of futures to earn returns on storage. Look for such opportunities in years of a large crop.

When crops are small and supplies are short, cash prices often rise to premiums over futures prices. The market is calling for grain now and is buying it out of storage. Inverse carrying charges or negative storage prices then prevail and it is usually better to sell for current delivery than to store for future delivery.

In addition to pricing grain under storage, farmers may also use futures markets to price livestock feed in advance of actual purchase or in pricing grain in advance of production. But, before farmers can successful-

ly use futures markets in such marketing decisionmaking, they must study local basis or the relationship between the cash price the local elevator is offering and futures prices over time. They must learn how to prepare and use basis tables and figures.

In this publication, basis tables are prepared for corn and soybeans at two country elevators in southern Minnesota for the three crop years 1972-73, 1973-74, and 1974-75. Basis tables and figures for these crop years are also prepared for wheat at one country elevator in northwestern Minnesota.

The July basis for corn at Marshall and Stewartville showed a remarkable similarity in all crop years. While the July corn basis differed in each of the three crop years, typical basis movements were evident, moving from a weak position at harvest to the strongest position the following May. In every year, returns to storage hedging of corn could have been earned from November-May. But in some years larger potential returns to storage were available than others.

The May basis for wheat in northwestern Minnesota also showed a typical strengthening pattern from harvest to the following spring. However, the wheat basis was more variable than the corn basis.

The soybean basis seems to be more variable and changes are more difficult to forecast than for corn and wheat.

Farmers and country elevator operators who study and understand cash-futures price relationships will find them highly useful guides to grain marketing decisionmaking.

Appendix

Table A1. Marshall cash bids to farmers, Chicago Board of Trade futures prices and cash basis to future months, corn

Date	Marshall cash bid	Chicago future price					Basis				
		Dec	Mar	May	July	Sept	Dec	Mar	May	July	Sept
4/6/72	1.05	1.29	1.34	1.25	1.29	1.30	.24	.29	.20	.24	.25
4/13/72	1.05	1.30	1.35	1.26	1.30	1.31	.25	.30	.21	.25	.26
4/20/72	1.05	1.29	1.33	1.24	1.28	1.29	.24	.28	.19	.23	.24
4/27/72	1.06	1.28	1.33	1.22	1.26	1.28	.22	.27	.16	.20	.22
5/4/72	1.07	1.27	1.31	1.22	1.26	1.28	.20	.24	.15	.19	.21
5/11/72	1.08	1.28	1.32	1.23	1.27	1.29	.20	.24	.15	.19	.21
5/18/72	1.08	1.27	1.32	1.24	1.27	1.29	.19	.24	.16	.19	.21
5/25/72	1.09	1.27	1.32	NT*	1.27	1.29	.18	.23	-†	.18	.20
6/1/72	1.07	1.25	1.30	1.33	1.26	1.27	.18	.23	.26	.19	.20
6/8/72	1.06	1.25	1.30	1.32	1.24	1.26	.18	.24	.26	.18	.20
6/15/72	1.05	1.21	1.26	1.29	1.21	1.23	.16	.21	.24	.16	.18
6/22/72	1.05	1.22	1.26	1.30	1.20	1.23	.17	.21	.25	.15	.18
6/29/72	1.04	1.21	1.26	1.29	1.19	1.22	.17	.22	.25	.15	.18
7/6/72	1.08	1.28	1.32	1.35	1.23	1.26	.20	.24	.27	.15	.18
7/13/72	1.08	1.27	1.31	1.34	1.25	1.26	.19	.23	.26	.17	.18
7/20/72	1.08	1.26	1.30	1.33	1.24	1.26	.18	.22	.25	.16	.18
7/27/72	1.05	1.24	1.28	1.31	NT*	1.25	.19	.23	.26	—	.20
8/3/72	1.08	1.27	1.32	1.34	1.36	1.28	.19	.24	.26	.28	.20
8/10/72	1.05	1.27	1.32	1.34	1.37	1.27	.22	.27	.29	.32	.22
8/17/72	1.06	1.27	1.32	1.35	1.37	1.27	.21	.26	.29	.31	.21
8/24/72	1.09	1.31	1.36	1.39	1.42	1.30	.22	.27	.30	.33	.21
9/1/72	1.08	1.36	1.42	1.44	1.46	1.34	.28	.34	.36	.38	.26
9/8/72	1.07	1.37	1.42	1.45	1.47	1.36	.30	.35	.38	.40	.29
9/15/72	1.11	1.43	1.48	1.51	1.54	1.41	.32	.37	.40	.43	.30
9/21/72	1.12	1.43	1.48	1.51	1.54	NT*	.31	.36	.39	.42	—
9/28/72	1.13	1.41	1.47	1.50	1.51	NT*	.28	.34	.37	.38	—
10/4/72	1.09	1.36	1.42	1.44	1.46	1.42	.27	.33	.35	.37	.33
10/11/72	1.10	1.37	1.43	1.46	1.48	1.44	.27	.33	.36	.38	.34
10/18/72	1.07	1.34	1.40	1.43	1.44	1.43	.27	.33	.36	.37	.36

Table A1 (continued).

Date	Marshall cash bid	Chicago future price									
		Dec	Mar	May	July	Sept	Dec	Mar	Basis May	July	Sept
10/25/72	1.06	1.34	1.40	1.44	1.46	1.43	.28	.34	.38	.40	.37
11/2/72	1.06	1.36	1.42	1.45	1.46	1.44	.30	.36	.39	.40	.38
11/9/72	1.04	1.35	1.40	1.43	1.45	1.43	.31	.36	.39	.41	.39
11/16/72	1.08	1.39	1.42	1.45	1.45	1.43	.31	.34	.37	.37	.35
11/24/72	1.08	1.37	1.41	1.45	1.47	1.45	.29	.33	.37	.39	.37
12/1/72	1.21	1.44	1.49	1.51	1.53	1.50	.23	.28	.30	.32	.29
12/8/72	1.24	1.60	1.63	1.65	1.65	1.62	.36	.39	.41	.41	.38
12/15/72	1.26	1.59	1.59	1.56	1.55	1.51	.33	.33	.30	.29	.25
12/22/72	1.20	NT*	1.54	1.51	1.49	1.48	—	.34	.31	.29	.26
1/2/73	1.20	1.43	1.52	1.50	1.49	1.46	.23	.32	.30	.29	.26
1/9/73	1.23	1.38	1.56	1.50	1.46	1.42	.15	.33	.27	.23	.19
1/16/73	1.22	1.36	1.58	1.50	1.44	1.40	.14	.36	.28	.22	.18
1/23/73	1.22	1.38	1.60	1.50	1.44	1.40	.16	.38	.28	.22	.18
1/30/73	1.15	1.34	1.62	1.51	1.45	1.39	.19	.47	.36	.30	.24
2/6/73	1.17	1.34	1.56	1.51	1.46	1.40	.17	.39	.34	.29	.23
2/15/73	1.20	1.37	1.60	1.51	1.46	1.42	.17	.40	.31	.26	.22
2/22/73	1.28	1.46	1.73	1.66	1.60	1.54	.18	.45	.38	.32	.26
3/1/73	1.27	1.48	1.68	1.64	1.60	1.54	.21	.41	.37	.33	.27
3/8/73	1.23	1.47	1.68	1.61	1.57	1.53	.24	.45	.38	.34	.30
3/15/73	1.22	1.46	1.62	1.59	1.55	1.52	.24	.40	.37	.33	.30
3/22/73	1.29	1.49	NT*	1.62	1.59	1.55	.20	—	.33	.30	.26
3/29/73	1.25	1.48	NT*	1.56	1.54	1.51	.23	—	.31	.29	.26
4/5/73	1.27	1.51	1.54	1.59	1.57	1.54	.24	.27	.32	.30	.27
4/12/73	1.29	1.53	1.56	1.60	1.58	1.56	.24	.27	.31	.29	.27
4/19/73	1.31	1.58	1.61	1.60	1.59	1.60	.27	.27	.29	.28	.29
4/26/73	1.31	1.59	1.62	1.62	1.62	1.62	.28	.31	.31	.31	.31
5/3/73	1.42	1.68	1.70	1.77	1.71	1.70	.26	.28	.35	.29	.28
5/10/73	1.48	1.67	1.69	1.83	1.75	1.72	.19	.21	.35	.27	.24
5/17/73	1.50	1.67	1.68	1.92	1.77	1.72	.17	.18	.42	.27	.22
5/24/73	1.64	1.82	1.84	NT*	1.97	1.90	.18	.20	—	.33	.26
6/1/73	1.96	1.99	1.99	1.96	2.23	2.14	.03	.03	.00	.27	.18
6/8/73	1.90	2.03	2.02	1.98	2.21	2.12	.13	.12	.08	.31	.22
6/15/73	1.82	1.94	1.93	1.93	2.12	2.02	.12	.11	.11	.30	.20
6/22/73	2.05	2.02	2.01	1.98	2.40	2.22	-.03	-.04	-.07	.35	.17
6/27/73	1.80	1.95	1.95	1.94	2.24	2.09	.15	.15	.14	.44	.29
7/3/73	1.81	2.03	2.05	2.06	2.30	2.14	.22	.24	.25	.49	.33
7/10/73	1.78	1.93	1.95	2.00	2.14	1.99	.17	.19	.24	.38	.23
7/17/73	2.06	2.14	2.15	2.14	2.45	2.24	.08	.09	.08	.39	.18
7/23/73	2.15	2.44	2.42	2.40	2.38	2.57	.29	.27	.25	.23	.42
7/30/73	2.07	2.54	2.54	2.49	2.46	2.78	.47	.47	.42	.39	.71
8/7/73	2.45	2.89	2.87	2.85	2.81	3.01	.44	.42	.40	.36	.56
8/14/73	2.76	3.26	3.23	3.20	3.15	3.48	.50	.47	.44	.39	.72
8/21/73	2.28	2.90	2.88	2.83	2.81	3.02	.62	.60	.55	.53	.74
8/28/73	1.93	2.59	2.58	2.53	2.52	2.70	.66	.65	.60	.59	.77
9/5/73	1.75	2.30	2.34	2.37	2.36	2.30	.55	.59	.62	.61	.55
9/12/73	1.92	2.39	2.42	2.44	2.45	2.42	.47	.50	.52	.53	.50
9/17/73	2.18	2.60	2.64	2.64	2.64	2.62	.42	.46	.46	.46	.44
9/24/73	2.21	2.58	2.62	2.64	2.63	NT*	.37	.41	.43	.42	—
10/1/73	2.10	2.48	2.52	2.56	2.57	2.47	.38	.42	.46	.47	.37
10/9/73	2.12	2.56	2.60	2.63	2.64	2.54	.44	.48	.51	.52	.42
10/16/73	1.92	2.40	2.45	2.49	2.52	2.49	.48	.53	.57	.60	.57
10/23/73	1.90	2.40	2.45	2.49	2.52	2.50	.50	.55	.59	.62	.60
10/30/73	1.89	2.36	2.41	2.44	2.43	2.40	.47	.52	.55	.54	.51
11/7/73	1.92	2.34	2.38	2.42	2.43	2.39	.42	.46	.50	.51	.47
11/14/73	2.12	2.56	2.60	2.62	2.63	2.56	.44	.48	.50	.51	.44
11/21/73	2.27	2.77	2.79	2.83	2.83	2.76	.50	.52	.56	.56	.49
11/28/73	2.14	2.64	2.68	2.70	2.72	2.66	.50	.54	.56	.58	.52
12/5/73	2.10	2.55	2.63	2.64	2.65	2.60	.45	.53	.54	.55	.50
12/12/73	2.16	2.65	2.70	2.72	2.75	2.68	.49	.54	.56	.59	.52
12/19/73	2.17	NT*	2.71	2.74	2.77	2.72	—	.54	.57	.60	.55
12/26/73	2.13	NT*	2.67	2.70	2.72	2.64	—	.54	.57	.59	.51
1/2/74	2.17	2.53	2.74	2.77	2.79	2.72	.36	.57	.60	.62	.55
1/9/74	2.25	2.58	2.77	2.80	2.82	2.76	.33	.52	.55	.57	.51
1/16/74	2.32	2.72	2.89	2.92	2.93	2.88	.40	.57	.60	.61	.56
1/23/74	2.23	2.62	2.81	2.84	2.86	2.78	.39	.58	.61	.63	.55
1/30/74	2.41	2.71	2.98	3.02	3.04	2.96	.30	.57	.61	.63	.55

Table A1 (continued).

Date	Marshall cash bid	Chicago future price							Basis May	July	Sept
		Dec	Mar	May	July	Sept	Dec	Mar			
2/7/74	2.39	2.72	2.97	3.01	3.02	2.97	.33	.58	.62	.63	.58
2/14/74	2.51	2.80	3.09	3.14	3.15	3.09	.29	.58	.63	.64	.58
2/21/74	2.60	3.02	3.21	3.27	3.30	3.24	.42	.61	.67	.70	.64
2/27/74	2.57	3.10	3.26	3.33	3.36	3.29	.53	.69	.76	.79	.72
3/6/74	2.43	2.84	3.04	3.09	3.13	3.04	.41	.61	.66	.70	.61
3/13/74	2.49	2.84	2.99	3.04	3.08	3.03	.35	.50	.55	.59	.54
3/20/74	2.51	2.73	2.98	2.98	3.01	2.94	.22	.47	.47	.50	.43
3/27/74	2.40	2.57	NT*	2.82	2.83	2.72	.17	-†	.42	.43	.32
4/3/74	2.29	2.48	2.52	2.68	2.68	2.60	.19	.23	.39	.39	.31
4/10/74	2.35	2.49	2.53	2.67	2.68	2.62	.14	.18	.32	.33	.27
4/17/74	2.35	2.45	2.49	2.61	2.64	2.57	.10	.14	.26	.29	.22
4/24/74	2.48	2.52	2.56	2.72	2.72	2.66	.04	.08	.24	.24	.18
5/1/74	2.47	2.46	2.50	2.72	2.72	2.64	-.01	.03	.25	.25	.17
5/8/74	2.31	2.34	2.39	2.58	2.58	2.48	.03	.08	.27	.27	.17
5/15/74	2.44	2.40	2.46	2.70	2.67	2.57	-.04	.02	.26	.23	.13
5/22/74	2.38	2.39	2.44	NT*	2.62	2.53	.01	.06	-†	.24	.15
5/29/74	2.48	2.48	2.52	NT*	2.70	2.62	0	.04	-†	.22	.14
6/5/74	2.52	2.41	2.46	2.50	2.73	2.59	-.11	-.06	-.02	.21	.07
6/12/74	2.57	2.43	2.49	2.52	2.80	2.63	-.14	-.08	-.05	.23	.06
6/19/74	2.60	2.55	2.60	2.64	2.90	2.74	-.05	0	.04	.30	.14
6/26/74	2.62	2.78	2.84	2.88	3.01	2.92	.16	.22	.26	.39	.30
7/3/74	2.69	2.89	2.95	2.98	3.06	3.00	.20	.26	.29	.37	.31
7/10/74	2.71	2.83	2.87	2.89	3.08	2.98	.12	.16	.18	.37	.27
7/17/74	2.87	3.00	3.04	3.04	3.29	3.14	.13	.17	.17	.42	.27
7/24/74	3.06	3.37	3.41	3.42	NT*	3.43	.31	.35	.36	-†	.37
7/31/74	3.43	3.67	3.71	3.72	NT*	3.80	.24	.28	.29	-†	.37
8/7/74	3.28	3.59	3.62	3.62	3.62	3.70	.31	.34	.34	.34	.42
8/14/74	3.26	3.57	3.62	3.59	3.60	3.64	.31	.36	.33	.34	.38
8/21/74	3.24	3.46	3.52	3.55	3.55	3.52	.22	.28	.31	.31	.28
8/28/74	3.25	3.49	3.56	3.58	3.58	3.54	.24	.31	.33	.33	.29
9/4/74	2.96	3.26	3.34	3.38	3.40	3.26	.30	.38	.42	.44	.30
9/11/74	3.25	3.50	3.58	3.61	3.62	3.50	.25	.33	.36	.37	.25
9/18/74	3.07	3.39	3.48	3.54	3.58	3.34	.32	.41	.47	.51	.27
9/25/74	3.26	3.58	3.65	3.70	3.72	NT*	.32	.39	.44	.46	-†
10/2/74	3.48	3.85	3.92	3.97	3.96	3.76	.37	.44	.49	.48	.28
10/9/74	3.34	3.79	3.90	3.95	3.95	3.72	.45	.56	.61	.61	.38
10/16/74	3.39	3.86	3.94	3.97	3.97	3.78	.47	.55	.58	.58	.39
10/23/74	3.29	3.78	3.86	3.89	3.91	3.76	.49	.57	.60	.62	.47
10/30/74	3.26	3.75	3.86	3.91	3.93	3.84	.49	.60	.65	.67	.58
11/6/74	3.37	3.79	3.89	3.93	3.94	3.81	.42	.52	.56	.57	.44
11/13/74	3.26	3.74	3.82	3.86	3.87	3.74	.48	.56	.60	.61	.48
11/20/74	3.09	3.56	3.66	3.70	3.71	3.60	.47	.57	.61	.62	.51
11/27/74	3.17	3.59	3.70	3.74	3.75	3.61	.42	.53	.57	.58	.44
12/5/74	3.23	3.66	3.75	3.78	3.78	3.61	.43	.52	.55	.55	.38
12/12/74	3.19	3.59	3.65	3.68	3.67	3.48	.40	.46	.49	.48	.29
12/19/74	3.13	3.53	3.57	3.58	3.56	3.34	.40	.44	.45	.43	.21
12/26/74	2.89	NT*	3.34	3.35	3.30	3.08	-†	.45	.46	.41	.19
1/3/75	3.01	2.92	3.43	3.45	3.43	3.22	-.09	.42	.44	.42	.21
1/10/75	3.01	2.90	3.41	3.42	3.40	3.20	-.11	.40	.41	.39	.19
1/17/75	2.68	2.74	3.20	3.22	3.21	3.04	.06	.52	.54	.53	.36
1/24/75	2.72	2.84	3.18	3.21	3.22	3.06	.12	.46	.49	.50	.34
1/31/75	2.73	2.82	3.11	3.14	3.14	3.00	.09	.38	.41	.41	.27
2/7/75	2.77	2.85	3.13	3.16	3.16	3.01	.08	.36	.39	.39	.24
2/14/75	2.79	2.81	3.10	3.12	3.12	2.97	.02	.31	.33	.33	.18
2/21/75	2.50	2.60	2.80	2.84	2.84	2.74	.10	.30	.34	.34	.24
2/28/75	2.30	2.43	2.58	2.62	2.64	2.56	.13	.28	.32	.34	.26
3/6/75	2.52	2.58	2.80	2.83	2.84	2.73	.06	.28	.31	.32	.21
3/13/75	2.57	2.58	2.87	2.86	2.86	2.73	.01	.30	.29	.29	.16
3/20/75	2.56	2.56	2.62	2.84	2.82	2.73	0	.06	.28	.26	.17
3/27/75	2.73	2.68	2.74	2.94	2.94	2.84	-.05	.01	.21	.21	.11
4/3/75	2.68	2.68	2.73	2.94	2.94	2.83	0	.05	.26	.26	.15
4/10/75	2.53	2.64	2.70	2.86	2.86	2.78	.11	.17	.33	.33	.25
4/17/75	2.63	2.60	2.66	2.86	2.86	2.76	-.03	.03	.23	.23	.13
4/24/75	2.67	2.60	2.66	2.86	2.86	2.77	-.07	-.01	.19	.19	.10
5/1/75	2.53	2.46	2.52	2.76	2.75	2.64	-.07	-.01	.23	.22	.11
5/8/75	2.55	2.44	2.50	2.74	2.72	2.59	-.11	-.05	.19	.17	.04

Table A1 (continued).

Date	Marshall cash bid	Chicago futures prices						Basis			
		Dec	Mar	May	July	Sept	Dec	Mar	May	July	Sept
5/15/75	2.62	2.44	2.50	2.75	2.71	2.59	-.18	-.12	.13	.09	-.03
5/22/75	2.65	2.50	2.56	NT*	2.76	2.64	-.15	-.09	-†	.11	-.01
5/29/75	2.55	2.40	2.45	NT*	2.68	2.53	-.15	-.10	-†	.13	-.02
6/5/75	2.57	2.37	2.43	2.46	2.75	2.52	-.20	-.14	-.11	.18	-.05
6/12/75	2.56	2.38	2.44	2.48	2.77	2.54	-.18	-.12	-.08	.21	-.02
6/19/75	2.65	2.48	2.54	2.58	2.84	2.66	-.17	-.11	-.07	.19	.01
6/26/75	2.60	2.42	2.49	2.53	2.83	2.59	-.18	-.11	-.07	.23	-.01
7/3/75	2.59	2.43	2.50	2.55	2.80	2.58	-.16	-.09	-.03	.21	-.01
7/10/75	2.60	2.55	2.62	2.66	2.83	2.65	-.05	.02	.06	.23	.05
7/17/75	2.57	2.62	2.70	2.74	3.01	2.72	.05	.13	.17	.44	.15
7/24/75	2.71	2.65	2.72	2.74	NT*	2.78	-.06	.01	.03	-†	.07
7/31/75	2.85	2.78	2.84	2.88	NT*	2.87	-.07	-.01	.03	-†	.02
8/7/75	3.00	3.04	3.12	3.16	3.17	3.13	.04	.12	.16	.17	.13
8/14/75	3.00	3.17	3.26	3.31	3.31	3.18	.17	.26	.31	.31	.18
8/21/75	3.00	3.22	3.29	3.32	3.33	3.22	.22	.29	.32	.33	.22
8/29/75	2.75	3.02	3.10	3.14	3.14	3.02	.27	.35	.39	.39	.27
9/4/75	2.75	2.96	3.05	3.08	3.03	3.02	.21	.30	.33	.28	.27
9/11/75	2.69	2.90	2.98	3.00	3.00	2.98	.21	.29	.31	.31	.29
9/17/75	2.88	3.16	3.22	3.24	3.24	3.22	.28	.34	.36	.36	.34
9/24/75	2.69	3.03	3.11	3.13	3.13	NT*	.34	.42	.44	.44	-†
10/1/75	2.66	3.06	3.14	3.17	3.16	3.04	.40	.48	.51	.50	.38
10/8/75	2.60	3.00	3.06	3.11	3.10	2.98	.40	.46	.51	.50	.38
10/14/75	2.57	2.96	3.03	3.06	3.07	2.98	.39	.46	.49	.50	.41
10/23/75	2.45	2.83	2.92	2.95	2.96	2.89	.38	.47	.50	.51	.44
10/30/75	2.43	2.81	2.90	2.94	2.96	2.90	.38	.47	.51	.53	.47
11/6/75	2.38	2.75	2.82	2.86	2.88	2.78	.37	.44	.48	.50	.40
11/13/75	2.29	2.65	2.72	2.76	2.78	2.70	.36	.43	.47	.49	.41
11/20/75	2.32	2.61	2.68	2.72	2.74	2.66	.29	.36	.40	.42	.34

*No trading.
†Indicates the basis could not be calculated because of no trading or no bid.

Table A2. Stewartville cash bids to farmers, Chicago Board of Trade futures prices and cash basis to future months, corn

Date	Stewartville cash bids	Chicago futures prices					Basis				
		Dec	Mar	May	July	Sept	Dec	Mar	May	July	Sept
6/1/72	1.08	1.25	1.30	1.33	1.26	1.27	.17	.22	.25	.18	.19
6/8/72	1.07	1.25	1.30	1.32	1.24	1.26	.18	.23	.25	.17	.19
6/15/72	1.06	1.21	1.26	1.29	1.21	1.23	.15	.20	.23	.15	.17
6/22/72	1.06	1.22	1.26	1.30	1.20	1.23	.16	.20	.24	.14	.17
6/29/72	1.05	1.21	1.26	1.29	1.19	1.22	.16	.21	.24	.14	.17
7/6/72	1.09	1.28	1.32	1.35	1.23	1.26	.19	.23	.26	.14	.17
7/13/72	1.11	1.27	1.31	1.34	1.25	1.26	.16	.20	.23	.14	.15
7/20/72	1.10	1.26	1.30	1.33	1.24	1.26	.16	.20	.23	.14	.16
7/27/72	1.08	1.24	1.28	1.31	NT*	1.25	.16	.20	.23	-†	.17
8/3/72	1.10	1.27	1.32	1.34	1.36	1.28	.17	.22	.24	.26	.18
8/10/72	1.08	1.27	1.32	1.34	1.37	1.27	.19	.24	.26	.29	.19
8/17/72	1.09	1.27	1.32	1.35	1.37	1.27	.18	.23	.26	.28	.18
8/24/72	1.11	1.31	1.36	1.39	1.42	1.30	.20	.25	.28	.31	.19
9/1/72	1.13	1.36	1.42	1.44	1.46	1.34	.23	.29	.31	.33	.21
9/8/72	1.11	1.37	1.42	1.45	1.47	1.36	.26	.31	.34	.36	.25
9/15/72	1.16	1.43	1.48	1.51	1.54	1.41	.27	.32	.35	.38	.25
9/21/72	1.15	1.43	1.48	1.51	1.54	NT*	.28	.33	.36	.39	-†
9/28/72	1.15	1.41	1.47	1.50	1.51	NT*	.26	.32	.35	.36	-†
10/4/72	1.11	1.36	1.42	1.44	1.46	1.42	.25	.31	.33	.35	.31
10/11/72	1.14	1.37	1.43	1.46	1.48	1.44	.23	.29	.32	.34	.30
10/18/72	1.10	1.34	1.40	1.43	1.44	1.43	.24	.30	.33	.34	.33
10/25/72	1.09	1.34	1.40	1.44	1.46	1.43	.25	.31	.35	.37	.34
11/2/72	1.09	1.36	1.42	1.45	1.46	1.44	.27	.33	.36	.37	.35
11/9/72	1.08	1.35	1.40	1.43	1.45	1.43	.27	.32	.35	.37	.35
11/16/72	1.13	1.39	1.42	1.45	1.45	1.43	.26	.29	.32	.32	.30
11/24/72	1.13	1.37	1.41	1.45	1.47	1.45	.24	.28	.32	.34	.32
12/1/72	1.24	1.44	1.49	1.51	1.53	1.50	.20	.25	.27	.29	.26
12/8/72	1.30	1.60	1.63	1.65	1.65	1.62	.30	.33	.35	.35	.32
12/15/72	1.23	1.59	1.59	1.56	1.55	1.51	.36	.36	.33	.32	.28
12/22/72	1.16	N.T.*	1.54	1.51	1.49	1.46	-†	.38	.35	.33	.30

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Table A2. (Continued)

Date	Stewartville cash bids	Chicago futures prices					Basis				
		Dec	Mar	May	July	Sept	Dec	Mar	May	July	Sept
1/2/73	1.23	1.43	1.52	1.50	1.49	1.46	.20	.29	.27	.26	.23
1/9/73	1.24	1.38	1.56	1.50	1.46	1.42	.14	.32	.26	.22	.18
1/16/73	1.20	1.36	1.58	1.50	1.44	1.40	.16	.38	.30	.24	.20
1/23/73	1.20	1.38	1.60	1.50	1.44	1.40	.18	.40	.30	.24	.20
1/30/73	1.22	1.34	1.62	1.51	1.45	1.39	.12	.40	.29	.23	.17
2/6/73	1.21	1.34	1.56	1.51	1.46	1.40	.13	.35	.30	.25	.19
2/15/73	1.21	1.37	1.60	1.51	1.46	1.42	.16	.39	.30	.25	.21
2/22/73	1.29	1.46	1.73	1.66	1.60	1.54	.17	.44	.37	.31	.25
3/1/73	1.27	1.48	1.68	1.64	1.60	1.54	.21	.41	.37	.33	.27
3/8/73	1.23	1.47	1.68	1.61	1.57	1.53	.24	.45	.38	.34	.30
3/15/73	1.20	1.46	1.62	1.59	1.55	1.52	.26	.42	.39	.35	.32
3/22/73	1.26	1.49	NT*	1.62	1.59	1.55	.23	-†	.36	.33	.29
3/29/73	1.24	1.48	NT*	1.56	1.54	1.51	.24	-†	.32	.30	.27
4/5/73	1.27	1.51	1.54	1.59	1.57	1.54	.24	.27	.32	.30	.27
4/12/73	1.27	1.53	1.56	1.60	1.58	1.56	.26	.29	.33	.31	.29
4/19/73	1.28	1.58	1.61	1.60	1.59	1.60	.30	.33	.32	.31	.32
4/26/73	1.32	1.59	1.62	1.62	1.62	1.62	.27	.30	.30	.30	.30
5/3/73	1.40	1.68	1.70	1.77	1.71	1.70	.28	.30	.37	.31	.30
5/10/73	1.45	1.67	1.69	1.83	1.75	1.72	.22	.24	.38	.30	.27
5/17/73	1.46	1.67	1.68	1.92	1.77	1.72	.21	.22	.46	.31	.26
5/24/73	1.62	1.82	1.84	NT*	1.97	1.90	.20	.23	-†	.35	.28
6/1/73	1.85	1.99	1.99	1.96	2.23	2.14	.14	.14	.11	.38	.29
6/8/73	1.84	2.03	2.02	1.98	2.21	2.12	.19	.18	.14	.37	.28
6/15/73	1.81	1.94	1.93	1.93	2.12	2.02	.13	.12	.12	.31	.21
6/22/73	2.02	2.02	2.01	1.98	2.40	2.22	0	-.01	-.04	.38	.20
6/27/73	1.87	1.95	1.95	1.94	2.24	2.09	.08	.08	.07	.37	.22
7/3/73	1.94	2.03	2.05	2.06	2.30	2.14	.09	.11	.12	.36	.20
7/10/73	1.78	1.93	1.95	2.00	2.14	1.99	.15	.17	.22	.36	.21
7/17/73	2.02	2.14	2.15	2.14	2.45	2.24	.12	.13	.12	.43	.22
7/23/73	2.20	2.44	2.42	2.40	2.38	2.57	.24	.22	.20	.18	.37
7/30/73	2.03	2.54	2.54	2.49	2.46	2.78	.51	.51	.46	.43	.75
8/7/73	2.42	2.89	2.87	2.85	2.81	3.01	.47	.45	.43	.39	.59
8/14/73	2.62	3.26	3.23	3.20	3.15	3.48	.64	.61	.58	.53	.86
8/21/73	2.35	2.90	2.88	2.83	2.81	3.02	.55	.53	.48	.46	.67
8/28/73	1.98	2.59	2.58	2.53	2.52	2.70	.61	.60	.55	.54	.72
9/5/73	1.75	2.30	2.34	2.37	2.36	2.30	.55	.59	.62	.61	.55
9/12/73	1.90	2.39	2.42	2.44	2.45	2.42	.49	.52	.54	.55	.52
9/17/73	2.16	2.60	2.64	2.64	2.64	2.62	.44	.48	.48	.48	.46
9/24/73	2.22	2.58	2.62	2.64	2.63	NT*	.36	.40	.42	.41	-†
10/1/73	2.15	2.48	2.52	2.56	2.57	2.47	.33	.37	.41	.42	.32
10/9/73	2.16	2.56	2.60	2.63	2.64	2.54	.40	.44	.47	.48	.38
10/16/73	1.91	2.40	2.45	2.49	2.52	2.49	.49	.54	.58	.61	.58
10/23/73	1.91	2.40	2.45	2.49	2.52	2.50	.49	.54	.58	.61	.59
10/30/73	1.90	2.36	2.41	2.44	2.43	2.40	.46	.51	.54	.53	.50
11/7/73	1.96	2.34	2.38	2.42	2.43	2.39	.38	.42	.46	.47	.43
11/14/73	2.12	2.56	2.60	2.62	2.63	2.56	.44	.48	.50	.51	.44
11/21/73	2.37	2.77	2.79	2.83	2.83	2.76	.40	.42	.46	.46	.39
11/28/73	2.22	2.64	2.68	2.70	2.72	2.66	.42	.46	.48	.50	.44
12/5/73	2.13	2.55	2.63	2.64	2.65	2.60	.42	.50	.51	.52	.47
12/12/73	2.19	2.65	2.70	2.72	2.75	2.68	.46	.51	.53	.56	.49
12/19/73	2.27	NT*	2.71	2.74	2.77	2.72	-†	.44	.47	.50	.45
12/26/73	2.24	NT*	2.67	2.70	2.72	2.64	-†	.43	.46	.48	.40
1/3/74	2.26	2.53	2.74	2.77	2.79	2.72	.27	.48	.51	.53	.46
1/9/74	2.31	2.58	2.77	2.80	2.82	2.76	.27	.46	.49	.51	.45
1/16/74	2.44	2.72	2.89	2.92	2.93	2.88	.28	.45	.48	.49	.44
1/23/74	2.39	2.62	2.81	2.84	2.86	2.78	.23	.42	.45	.47	.39
1/30/74	2.54	2.71	2.98	3.02	3.04	2.96	.17	.44	.48	.50	.42
2/7/74	2.56	2.72	2.97	3.01	3.02	2.97	.16	.41	.45	.46	.41
2/14/74	2.64	2.80	3.09	3.14	3.15	3.09	.16	.45	.50	.51	.45
2/21/74	2.80	3.02	3.21	3.27	3.30	3.24	.22	.41	.47	.50	.44
2/27/74	2.74	3.10	3.26	3.33	3.36	3.29	.36	.52	.59	.62	.55
3/6/74	2.59	2.84	3.04	3.09	3.13	3.04	.25	.45	.50	.54	.45
3/13/74	2.60	2.84	2.99	3.04	3.08	3.03	.24	.39	.44	.48	.43
3/20/74	2.58	2.73	2.98	2.98	3.01	2.94	.15	.40	.40	.43	.36
3/27/74	2.50	2.57	NT*	2.82	2.83	2.72	.07	-†	.32	.33	.22
4/3/74	2.35	2.48	2.52	2.68	2.68	2.60	.13	.17	.33	.33	.25

Table A2. (Continued)

Date	Stewartville cash bids	Chicago futures prices					Basis		↑ July	Sept	
		Dec	Mar	May	July	Sept	Dec	Mar			
4/10/74	2.39	2.49	2.53	2.67	2.68	2.62	.10	.14	.28	.29	.23
4/17/74	2.37	2.45	2.49	2.61	2.64	2.57	.08	.12	.24	.27	.20
4/24/74	2.53	2.52	2.56	2.72	2.72	2.66	-.01	.03	.19	.19	.13
5/1/74	2.49	2.46	2.50	2.72	2.72	2.64	-.03	.01	.23	.23	.15
5/8/74	2.35	2.34	2.39	2.58	2.58	2.48	-.01	.04	.23	.23	.13
5/15/74	2.46	2.40	2.46	2.70	2.67	2.57	-.06	0	.24	.21	.11
5/22/74	2.41	2.39	2.44	NT*	2.62	2.53	-.02	.03	-†	.21	.12
5/29/74	2.52	2.48	2.52	NT*	2.70	2.62	-.04	0	-†	.18	.10
6/5/74	2.59	2.41	2.46	2.50	2.73	2.59	-.18	-.13	-.09	.14	0
6/12/74	2.58	2.43	2.49	2.52	2.80	2.63	-.15	-.09	-.06	.22	.05
6/19/74	2.64	2.55	2.60	2.64	2.90	2.74	-.09	-.04	0	.26	.10
6/26/74	2.69	2.78	2.84	2.88	3.01	2.92	.09	.15	.19	.32	.23
7/3/74	2.78	2.89	2.95	2.98	3.06	3.00	.11	.17	.20	.28	.22
7/10/74	2.77	2.83	2.87	2.89	3.08	2.98	.06	.10	.12	.31	.21
7/17/74	3.00	3.00	3.04	3.04	3.29	3.14	0	.04	.04	.29	.14
7/24/74	3.13	3.37	3.41	3.42	NT*	3.43	.24	.28	.29	-†	.30
7/31/74	3.48	3.67	3.71	3.72	NT*	3.80	.19	.23	.24	-†	.32
8/7/74	3.36	3.59	3.62	3.62	3.62	3.70	.23	.26	.26	.26	.34
8/14/74	3.37	3.57	3.62	3.59	3.60	3.64	.20	.25	.22	.23	.27
8/21/74	3.25	3.46	3.52	3.55	3.55	3.52	.21	.27	.30	.30	.27
8/28/74	3.28	3.49	3.56	3.58	3.58	3.54	.21	.28	.30	.30	.26
9/4/74	3.00	3.26	3.34	3.38	3.40	3.26	.26	.34	.38	.40	.26
9/11/74	3.32	3.50	3.58	3.61	3.62	3.50	.18	.26	.29	.30	.18
9/18/74	3.15	3.39	3.48	3.54	3.58	3.34	.24	.33	.39	.43	.19
9/25/74	3.32	3.58	3.65	3.70	3.72	NT*	.26	.33	.38	.40	-†
10/2/74	3.53	3.85	3.92	3.97	3.96	3.76	.32	.39	.44	.43	.23
10/9/74	3.41	3.79	3.90	3.95	3.95	3.72	.38	.49	.54	.54	.31
10/16/74	3.46	3.86	3.94	3.97	3.97	3.78	.40	.48	.51	.51	.32
10/23/74	3.34	3.78	3.86	3.89	3.91	3.76	.44	.52	.55	.57	.42
10/30/74	3.31	3.75	3.86	3.91	3.93	3.84	.44	.55	.60	.62	.53
11/6/74	3.42	3.79	3.89	3.93	3.94	3.81	.37	.47	.51	.52	.39
11/13/74	3.34	3.74	3.82	3.86	3.87	3.74	.40	.48	.52	.53	.40
11/20/74	3.12	3.56	3.66	3.70	3.71	3.60	.44	.54	.58	.59	.48
11/27/74	3.21	3.59	3.70	3.74	3.75	3.61	.38	.49	.53	.54	.40
12/5/74	3.31	3.66	3.75	3.78	3.78	3.61	.35	.44	.47	.47	.30
12/12/74	3.17	3.59	3.65	3.68	3.67	3.48	.42	.48	.51	.50	.31
12/19/74	3.11	3.53	3.57	3.58	3.56	3.34	.42	.46	.47	.45	.23
12/26/74	2.88	NT*	3.34	3.35	3.30	3.08	-†	.46	.47	.42	.20
1/3/75	2.98	2.92	3.43	3.45	3.43	3.22	-.06	.45	.47	.45	.24
1/10/75	2.96	2.90	3.41	3.42	3.40	3.20	-.06	.45	.46	.44	.24
1/17/75	2.72	2.74	3.20	3.22	3.21	3.04	.02	.48	.50	.49	.32
1/24/75	2.80	2.84	3.18	3.21	3.22	3.06	.04	.38	.41	.42	.26
1/31/75	2.78	2.82	3.11	3.14	3.14	3.00	.04	.33	.36	.36	.22
2/7/75	2.85	2.85	3.13	3.16	3.16	3.01	0	.28	.31	.31	.16
2/14/75	2.83	2.81	3.10	3.12	3.12	2.97	-.02	.27	.29	.29	.14
2/21/75	2.52	2.60	2.80	2.84	2.84	2.74	.08	.28	.32	.32	.22
2/28/75	2.31	2.43	2.58	2.62	2.64	2.56	.12	.27	.31	.33	.25
3/6/75	2.54	2.58	2.80	2.83	2.84	2.73	.04	.26	.29	.30	.19
3/13/75	2.61	2.58	2.87	2.86	2.86	2.73	-.03	.26	.25	.25	.12
3/20/75	2.60	2.56	2.62	2.84	2.82	2.73	-.04	.02	.24	.22	.13
3/27/75	2.70	2.68	2.74	2.94	2.94	2.84	-.02	.04	.24	.24	.14
4/3/75	2.71	2.68	2.73	2.94	2.94	2.83	-.03	.02	.23	.23	.12
4/10/75	2.61	2.64	2.70	2.86	2.86	2.78	.03	.09	.25	.25	.17
4/17/75	2.71	2.60	2.66	2.86	2.86	2.76	-.11	-.05	.15	.15	.05
4/24/75	2.74	2.60	2.66	2.86	2.86	2.77	-.14	-.08	.12	.12	.03
5/1/75	2.62	2.46	2.52	2.76	2.75	2.64	-.16	-.10	.14	.13	.02
5/8/75	2.66	2.44	2.50	2.74	2.72	2.59	-.22	-.16	.08	.06	-.07
5/15/75	2.68	2.44	2.50	2.75	2.71	2.59	-.24	-.18	.07	.03	-.09
5/22/75	2.71	2.50	2.56	NT*	2.76	2.64	-.21	-.15	-†	.05	-.07
5/29/75	2.63	2.40	2.45	NT*	2.68	2.53	-.23	-.18	-†	.05	-.10
6/5/75	2.67	2.37	2.43	2.46	2.75	2.52	-.30	-.24	-.21	.08	-.15
6/12/75	2.67	2.38	2.44	2.48	2.77	2.54	-.29	-.23	-.19	.10	-.13
6/19/75	2.71	2.48	2.54	2.58	2.84	2.66	-.23	-.17	-.13	.13	-.05
6/26/75	2.66	2.42	2.49	2.53	2.83	2.59	-.24	-.17	-.13	.17	-.07
7/3/75	2.70	2.43	2.50	2.56	2.80	2.58	-.27	-.20	-.14	.10	-.12
7/10/75	2.71	2.55	2.62	2.66	2.83	2.65	-.16	-.09	-.05	.12	-.06

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Table A2. (Continued)

Date	Stewartville cash bids	Chicago futures prices.					Basis				
		Dec	Mar	May	July	Sept	Dec	Mar	May	July	Sept
7/17/75	2.66	2.62	2.70	2.74	3.01	2.72	-.04	.04	.08	.35	.06
7/24/75	2.79	2.65	2.72	2.74	NT*	2.78	-.14	-.07	-.05	-†	-.01
7/31/75	2.75	2.78	2.84	2.88	NT*	2.87	.03	.09	.13	-†	-.12
8/7/75	2.92	3.04	3.12	3.16	3.17	3.13	.12	.20	.24	.25	.21
8/14/75	2.97	3.17	3.26	3.31	3.31	3.18	.20	.29	.34	.34	.21
8/21/75	3.00	3.22	3.29	3.32	3.33	3.22	.22	.29	.32	.33	.22
8/29/75	2.85	3.02	3.10	3.14	3.14	3.02	.17	.25	.29	.29	.17
9/4/75	2.79	2.96	3.05	3.08	3.03	3.02	.17	.26	.29	.24	.23
9/11/75	2.74	2.90	2.98	3.00	3.00	2.98	.16	.24	.26	.26	.24
9/17/75	2.94	3.16	3.22	3.24	3.24	3.22	.22	.28	.30	.30	.28
9/24/75	2.74	3.03	3.11	3.13	3.13	NT*	.29	.37	.39	.39	-†
10/1/75	2.71	3.06	3.14	3.17	3.16	3.04	.35	.43	.46	.45	.33
10/8/75	2.63	3.00	3.06	3.11	3.10	2.98	.37	.43	.48	.47	.35
10/14/75	2.60	2.96	3.03	3.08	3.07	2.98	.36	.43	.46	.47	.38
10/23/75	2.41	2.83	2.92	2.95	2.96	2.89	.42	.51	.54	.55	.48
10/30/75	2.48	2.81	2.90	2.94	2.96	2.90	.33	.42	.46	.48	.42
11/6/75	2.38	2.75	2.82	2.86	2.88	2.78	.37	.44	.48	.50	.40
11/13/75	2.28	2.85	2.72	2.76	2.78	2.70	.37	.44	.48	.50	.42
11/20/75	2.26	2.61	2.68	2.72	2.74	2.66	.35	.42	.46	.48	.40

*No trading.
†Indicates the basis could not be calculated because of no trading or no bid.

Table A3. Climax cash bids to farmers, 13 percent protein wheat, Minneapolis Grain Exchange futures prices and cash basis to future months

Date	Climax cash bid	Mpls. futures prices					Basis				
		Sept	Dec	Mar	May	July	Sept	Dec	Mar	May	July
8/3/72	1.50	1.74	1.78	NT*	NT*	NT*	.24	.28	-†	-†	-†
8/10/72	1.55	1.82	1.88	1.92	NT*	NT*	.27	.33	.37	-†	-†
8/17/72	1.54	1.84	1.91	1.95	1.96	NT*	.30	.37	.41	.42	-†
8/24/72	1.60	1.87	1.94	2.00	2.00	NT*	.27	.34	.40	.40	-†
9/1/72	1.67	1.95	2.01	2.07	2.10	2.11	.28	.34	.40	.43	.44
9/8/72	1.70	1.92	2.00	2.06	2.08	2.09	.22	.30	.36	.38	.39
9/15/72	1.88	2.10	2.19	2.24	2.25	2.18	.22	.31	.36	.37	.30
9/21/72	1.84	NT*	2.14	2.19	2.20	2.17	-†	.30	.35	.36	.33
9/28/72	1.81	NT*	2.08	2.14	2.18	2.11	-†	.27	.33	.37	.30
10/4/72	1.83	1.98	2.01	2.06	2.10	2.08	.15	.18	.23	.27	.25
10/11/72	1.89	2.00	2.09	2.12	2.18	2.13	.11	.20	.23	.27	.24
10/18/72	1.92	2.03	2.11	2.16	2.16	2.16	.11	.19	.24	.24	.24
10/25/72	1.90	2.00	2.06	2.11	2.14	2.11	.10	.16	.21	.24	.21
11/2/72	1.90	1.99	2.06	2.10	2.12	2.07	.09	.16	.20	.22	.17
11/9/72	1.92	1.97	2.08	2.12	2.14	2.07	.05	.16	.20	.22	.15
11/16/72	1.93	1.99	2.08	2.11	2.13	2.10	.06	.15	.18	.20	.17
11/24/72	1.97	1.90	2.14	2.14	2.15	2.09	-.07	.17	.17	.18	.12
12/1/72	2.04	2.08	2.28	2.26	2.25	2.19	.04	.24	.22	.21	.15
12/8/72	2.15	2.26	2.36	2.38	2.38	2.33	.11	.21	.23	.23	.18
12/15/72	2.20	2.27	2.45	2.41	2.38	2.35	.07	.25	.21	.18	.15
12/22/72	2.20	2.23	NT*	2.42	2.34	2.30	.03	-†	.22	.14	.10
1/2/73	2.17	2.24	NT*	2.38	2.33	2.31	.07	-†	.21	.16	.14
1/9/73	2.15	2.27	NT*	2.39	2.34	2.30	.12	-†	.24	.19	.15
1/16/73	2.19	2.24	NT*	2.39	2.35	2.32	.05	-†	.20	.16	.13
1/23/73	2.12	2.20	NT*	2.33	2.28	2.24	.08	-†	.21	.16	.12
1/30/73	2.06	2.18	NT*	2.27	2.23	2.20	.12	-†	.21	.17	.14
2/6/73	2.04	2.07	NT*	2.21	2.16	2.12	.03	-†	.17	.12	.08
2/15/73	1.91	2.01	NT*	2.13	2.07	2.02	.10	-†	.22	.16	.11
2/22/73	2.09	2.17	2.19	2.28	2.21	2.18	.08	.10	.19	.12	.09
3/1/73	1.96	2.10	2.13	2.21	2.15	2.11	.14	.17	.25	.19	.15
3/8/73	2.11	2.12	2.15	2.28	2.19	2.14	.01	.04	.17	.08	.03
3/15/73	1.89	1.99	2.04	2.17	2.08	2.00	.10	.15	.28	.19	.11
3/22/73	1.84	1.98	1.96	NT*	2.06	1.98	.14	.12	-†	.22	.14
3/29/73	1.94	1.94	1.97	NT*	2.05	1.97	0	.03	-†	.11	.03
4/5/73	1.98	2.02	2.06	NT*	2.16	2.04	.04	.08	-†	.18	.06
4/12/73	2.09	2.06	2.07	NT*	2.17	2.07	-.03	-.02	-†	.08	-.02
4/19/73	2.14	2.12	2.14	NT*	2.26	2.14	-.02	0	-†	.12	0
4/26/73	2.09	2.23	2.24	NT*	2.30	2.24	.14	.15	-†	.21	.15
5/3/73	2.07	2.22	2.21	NT*	2.27	2.22	.15	.14	-†	.20	.15
5/10/73	2.06	2.21	2.21	NT*	2.27	2.21	.15	.15	-†	.21	.15

Table A3. (continued).

Date	Climax cash bid	Mpls. futures prices						Basis			†	July
		Sept	Dec	Mar	May	July	Sept	Dec	Mar	May		
5/17/73	2.17	2.33	2.33	NT*	2.39	2.33	.16	.16	-†	.22	.16	
5/24/73	2.40	2.61	2.62	2.64	NT*	2.61	.21	.22	.24	-†	.21	
6/1/73	2.35	2.58	2.56	2.58	NT*	2.61	.23	.21	.23	-†	.26	
6/8/73	2.33	2.58	2.53	2.54	NT*	2.63	.25	.20	.21	-†	.30	
6/15/73	2.41	2.57	2.51	2.53	NT*	2.61	.16	.10	.12	-†	.20	
6/22/73	2.29	2.54	2.49	2.51	NT*	2.61	.25	.20	.22	-†	.32	
6/27/73	2.28	2.52	2.50	2.53	NT*	2.57	.24	.22	.25	-†	.29	
7/3/73	2.43	2.69	2.66	2.69	NT*	2.78	.26	.23	.26	-†	.35	
7/10/73	2.25	2.52	2.46	2.50	2.56	2.66	.27	.21	.25	.31	.41	
7/17/73	2.53	2.75	2.63	2.66	2.68	2.96	.22	.10	.13	.15	.33	
7/23/73	2.82	3.04	2.92	2.96	2.97	NT*	.22	.10	.14	.15	-†	
7/30/73	3.16	3.44	3.24	3.26	3.22	NT*	.28	.08	.10	.06	-†	
8/7/73	3.90	4.24	4.04	4.03	3.87	3.62	.34	.14	.13	-.03	-.28	
8/14/73	4.30	4.93	4.73	4.63	4.33	3.90	.63	.43	.33	.03	-.40	
8/21/73	4.10	4.86	4.72	4.62	4.34	3.66	.76	.62	.52	.24	-.44	
8/28/73	4.20	4.50	4.45	4.34	4.08	3.19	.30	.25	.14	.12	-1.01	
9/5/73	4.20	4.23	4.26	4.25	4.24	3.53	.03	.06	.05	.04	-.67	
9/12/73	4.15	4.65	4.63	4.61	4.56	4.02	.50	.48	.46	.41	-.13	
9/17/73	4.48	4.98	4.98	4.98	4.90	4.25	.50	.50	.50	.42	-.23	
9/24/73	4.40	NT*	4.86	4.91	4.86	4.40	-†	.46	.51	.46	0	
10/1/73	3.86	NT*	4.49	4.49	4.42	3.85	-†	.63	.63	.56	-.01	
10/9/73	4.16	NT*	4.65	4.66	4.61	4.00	-†	.49	.50	.45	-.16	
10/16/73	3.60	NT*	3.94	3.97	3.96	3.70	-†	.34	.37	.36	.10	
10/23/73	4.06	3.60	4.30	4.28	4.19	3.90	-.46	.24	.22	.13	-.16	
10/30/73	3.52	3.20	3.84	3.82	3.80	3.42	-.32	.32	.30	.28	-.10	
11/7/73	3.97	3.32	4.21	4.01	3.83	3.71	-.65	.24	.04	-.14	-.26	
11/14/73	4.16	3.40	4.46	4.32	4.09	3.78	-.76	.30	.16	-.07	-.38	
11/21/73	4.10	3.50	4.27	4.20	3.97	3.80	-.60	.17	.10	-.13	-.30	
11/28/73	4.25	4.04	4.53	4.53	4.46	4.22	-.21	.28	.28	.21	-.03	
12/5/73	4.41	4.25	4.57	4.63	4.62	4.40	-.16	.26	.22	.21	-.01	
12/12/73	4.60	4.46	5.05	4.95	4.87	4.79	-.14	.45	.35	.27	.19	
12/19/73	4.68	4.67	NT*	4.91	4.84	4.82	-.01	-†	.23	.16	.14	
12/26/73	4.57	4.50	NT*	4.80	4.68	4.55	-.07	-†	.23	.11	-.02	
1/3/74	4.90	4.70	NT*	5.13	5.02	4.87	-.20	-†	.23	.12	-.03	
1/9/74	4.90	4.69	4.80	5.26	5.12	4.86	-.21	-.10	.36	.22	-.04	
1/16/74	5.10	4.85	4.85	5.36	5.22	5.07	-.25	-.25	.26	.12	-.03	
1/23/74	4.86	4.56	4.67	5.11	4.97	4.75	-.30	-.19	.25	.11	-.11	
1/30/74	5.10	4.80	4.84	5.39	5.22	5.05	-.30	-.26	.29	.12	-.05	
2/7/74	5.06	4.85	4.86	5.31	5.18	5.01	-.21	-.20	.25	.12	-.05	
2/14/74	5.46	5.15	5.20	5.71	5.56	5.33	-.31	-.26	.25	.10	-.13	
2/21/74	5.42	5.28	5.28	5.65	5.55	5.44	-.14	-.14	.23	.13	.02	
2/27/74	5.44	5.44	5.49	5.74	5.63	5.55	0	.05	.30	.19	.11	
3/6/74	5.02	5.02	5.02	5.35	5.22	5.13	0	0	.33	.20	.11	
3/13/74	5.00	4.99	5.00	5.35	5.20	5.07	-.01	0	.35	.20	.07	
3/20/74	4.63	4.40	4.45	4.92	4.73	4.51	-.23	-.18	.29	.10	-.12	
3/27/74	4.40	4.20	4.20	NT*	4.49	4.32	-.20	-.20	-†	.09	-.08	
4/3/74	3.91	4.09	4.13	NT*	4.18	4.12	.18	.22	-†	.27	.21	
4/10/74	4.06	4.08	4.11	NT*	4.20	4.10	.02	.05	-†	.14	.04	
4/17/74	3.90	4.13	4.14	NT*	4.20	4.15	.23	.24	-†	.30	.25	
4/24/74	3.88	4.09	4.12	NT*	4.10	4.10	.21	.24	-†	.22	.22	
5/1/74	3.57	3.80	3.81	NT*	3.81	3.79	.23	.24	-†	.24	.22	
5/8/74	3.60	3.71	3.75	NT*	3.79	3.70	.11	.15	-†	.19	.10	
5/15/74	3.92	3.83	3.84	NT*	4.29	3.92	-.09	-.08	-†	.37	0	
5/22/74	3.78	3.66	3.71	NT*	NT*	3.75	-.12	-.07	-†	-†	-.03	
5/29/74	4.27	3.83	3.89	NT*	NT*	4.02	-.44	-.38	-†	-†	-.25	
6/5/74	4.15	3.95	4.03	4.05	NT*	4.10	-.20	-.12	-.10	-†	-.05	
6/12/74	4.14	4.09	4.17	4.21	NT*	4.25	-.05	.03	.07	-†	.11	
6/19/74	4.45	4.44	4.49	4.52	NT*	4.62	-.01	.04	.07	-†	.17	
6/26/74	4.59	4.68	4.69	4.69	NT*	4.80	.09	.10	.10	-†	.21	
7/3/74	4.60	4.61	4.59	4.62	NT*	4.80	.01	-.01	.02	-†	.20	
7/10/74	4.59	4.64	4.58	4.64	NT*	4.79	.05	-.01	.05	-†	.20	
7/17/74	4.53	4.54	4.46	4.47	NT*	4.93	.01	-.07	-.06	-†	.40	
7/24/74	4.57	4.88	4.67	4.76	NT*	NT*	.31	.10	.19	-†	-†	
7/31/74	4.74	4.99	4.90	4.91	4.90	NT*	.25	.16	.17	-†	.16	
8/7/74	4.60	4.90	4.77	4.81	4.80	NT*	.30	.17	.21	-†	.20	
8/14/74	4.54	4.89	4.80	4.83	4.72	NT*	.35	.26	.29	-†	.18	

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Table A3. (continued).

Date	Climax cash bid	Mpls. futures prices					Basis				
		Sept	Dec	Mar	May	July	Sept	Dec	Mar	May	July
8/21/74	4.40	4.78	4.73	4.75	4.61	NT*	.38	.33	.35	.21	-†
8/28/74	4.26	4.57	4.64	4.70	4.64	NT*	.31	.38	.44	.38	-†
9/4/74	4.40	4.63	4.62	4.64	4.60	NT*	.23	.22	.24	.20	-†
9/11/74	4.43	4.78	4.73	4.77	4.73	NT*	.35	.30	.34	.30	-†
9/18/74	4.42	4.83	4.72	4.76	4.73	NT*	.41	.30	.34	.31	-†
9/25/74	4.62	4.83	4.87	4.83	4.80	NT*	-†	.25	.21	.18	-†
10/2/74	4.96	4.83	5.16	5.16	5.09	NT*	-†	.20	.20	.13	-†
10/9/74	5.08	4.83	5.34	5.37	5.35	NT*	-†	.28	.29	.27	-†
10/16/74	5.05	4.83	5.34	5.40	5.36	NT*	-†	.29	.35	.31	-†
10/23/74	5.24	5.15	5.50	5.58	5.57	NT*	-.09	.26	.34	.33	-†
10/30/74	5.24	5.10	5.52	5.59	5.62	NT*	-.14	.28	.35	.38	-†
11/6/74	5.28	5.15	5.56	5.66	5.69	5.55	-.13	.28	.38	.41	.27
11/13/74	5.30	5.15	5.52	5.59	5.66	5.49	-.15	.22	.29	.36	.19
11/20/74	5.11	4.80	5.46	5.53	5.53	5.23	-.31	.35	.42	.42	.12
11/27/74	5.11	4.87	5.40	5.47	5.48	5.23	-.24	.29	.36	.37	.12
12/5/74	4.99	4.87	5.30	5.41	5.44	5.20	-.12	.31	.42	.45	.21
12/12/74	4.88	4.70	5.16	5.29	5.29	5.00	-.18	.28	.41	.41	.12
12/19/74	4.88	4.48	5.24	5.22	5.16	4.80	-.40	.36	.34	.30	-.08
12/26/74	4.70	4.36	NT*	5.04	4.96	4.60	-.34	-†	.34	.26	-.10
1/3/75	4.69	4.42	4.50	5.07	4.99	4.62	-.27	-.19	.38	.30	-.07
1/10/75	4.32	4.26	4.30	4.72	4.66	4.44	-.06	-.02	.40	.34	.12
1/17/75	3.94	4.00	4.13	4.34	4.33	4.17	.06	.19	.40	.39	.23
1/24/75	3.85	4.12	4.15	4.44	4.42	4.31	.27	.30	.59	.57	.46
1/31/75	3.72	4.01	4.04	4.22	4.24	4.13	.29	.32	.50	.52	.41
2/7/75	3.98	4.12	4.10	4.40	4.38	4.29	.14	.12	.42	.40	.31
2/14/75	4.00	3.99	4.05	4.15	4.16	4.08	-.01	.05	.15	.16	.08
2/21/75	3.78	3.99	4.05	4.15	4.16	4.08	.21	.27	.37	.38	.30
2/28/75	3.47	3.75	3.84	3.87	3.89	3.81	.28	.37	.40	.42	.34
3/6/75	3.81	3.85	3.90	4.15	4.12	3.98	.04	.09	.34	.31	.17
3/13/75	3.78	3.81	3.90	4.17	4.06	3.93	.03	.12	.39	.28	.15
3/20/75	3.66	3.78	3.80	NT*	3.96	3.88	.12	.14	-†	.30	.22
3/27/75	3.90	3.93	3.98	NT*	4.12	4.03	.03	.08	-†	.22	.13
4/3/75	3.95	3.93	3.99	NT*	4.12	4.05	-.02	.04	-†	.17	.10
4/10/75	3.93	3.87	3.92	NT*	4.06	3.98	-.06	-.01	-†	.13	.05
4/17/75	3.85	3.78	3.82	NT*	4.06	3.92	-.07	-.03	-†	.21	.07
4/24/75	3.63	3.64	3.68	NT*	3.86	3.73	.01	.05	-†	.23	.10
5/1/75	3.67	3.52	3.56	NT*	3.84	3.65	-.15	-.11	-†	.17	-.02
5/8/75	3.65	3.48	3.49	NT*	3.94	3.60	-.17	-.16	-†	.29	-.05
5/15/75	3.50	3.46	3.48	NT*	3.97	3.63	-.14	-.12	-†	.37	.03
5/22/75	3.91	3.61	3.62	NT*	NT*	3.78	-.30	-.29	-†	-†	-.13
5/29/75	3.75	3.47	3.49	NT*	NT*	3.69	-.28	-.26	-†	-†	-.06
6/5/75	3.72	3.48	3.49	3.54	NT*	3.64	-.24	-.23	-.18	-†	-.08
6/12/75	3.60	3.45	3.46	3.54	NT*	3.59	-.15	-.14	-.06	-†	-.01
6/19/75	3.46	3.61	3.64	3.67	NT*	3.68	.15	.18	.21	-†	.22
6/26/75	3.53	3.65	3.66	3.69	NT*	3.81	.12	.13	.16	-†	.28
7/3/75	3.70	3.74	3.70	3.73	NT*	3.93	.04	0	.03	-†	.23
7/10/75	3.87	4.02	4.01	4.07	NT*	4.07	.15	.14	.20	-†	.20
7/17/75	3.88	4.24	4.20	4.27	NT*	4.32	.36	.32	.39	-†	.44
7/24/75	3.94	4.26	4.26	4.30	NT*	NT*	.32	.32	.36	-†	-†
7/31/75	3.84	4.25	4.26	4.31	NT*	NT*	.41	.42	.47	-†	-†
8/7/75	4.21	4.54	4.54	4.60	NT*	NT*	.33	.33	.39	-†	-†
8/14/75	4.30	4.64	4.68	4.74	NT*	NT*	.34	.38	.44	-†	-†
8/21/75	4.45	4.76	4.86	4.96	NT*	NT*	.31	.41	.51	-†	-†
8/29/75	4.06	4.44	4.52	4.63	NT*	NT*	.38	.46	.57	-†	-†
9/4/75	4.25	4.66	4.66	4.75	NT*	NT*	.41	.41	.50	-†	-†
9/11/75	4.22	4.49	4.56	4.64	4.73	NT*	.27	.34	.42	.51	-†
9/17/75	4.27	4.64	4.75	4.85	4.88	NT*	.37	.48	.58	.61	-†
9/24/75	4.30	NT*	4.60	4.72	4.73	NT*	-†	.30	.42	.43	-†
10/1/75	4.24	NT*	4.66	4.76	4.80	NT*	-†	.42	.52	.56	-†
10/8/75	4.13	NT*	4.53	4.65	4.68	NT*	-†	.40	.52	.55	-†
10/14/75	4.15	NT*	4.55	4.68	4.73	NT*	-†	.40	.53	.58	-†
10/23/75	4.01	NT*	4.39	4.48	4.54	NT*	-†	.38	.47	.53	-†
10/30/75	4.04	NT*	4.43	4.54	4.59	NT*	-†	.39	.50	.55	-†
11/6/75	3.80	NT*	4.22	4.34	4.40	NT*	-†	.42	.54	.60	-†
11/13/75	3.57	NT*	3.96	4.06	4.11	NT*	-†	.39	.49	.54	-†
11/20/75	3.53	NT*	3.90	3.99	4.05	NT*	-†	.37	.46	.52	-†

Table A3. (continued).

Date	Climax cash bid	Mpls. futures prices					Basis				
		Sept	Dec	Mar	May	July	Sept	Dec	Mar	May	July
11/28/75	3.70	NT*	4.04	4.12	4.14	NT*	-†	.34	.42	.44	-†
12/4/75	3.69	NT*	4.08	4.15	4.14	4.18	-†	.39	.46	.45	.49
12/11/75	3.54	NT*	3.94	4.00	4.00	4.01	-†	.40	.46	.46	.47
12/18/75	3.47	NT*	3.87	3.92	3.92	3.94	-†	.40	.45	.45	.47
12/24/75	3.44	NT*	NT*	3.88	3.86	3.88	-†	-†	.42	.42	.44

*No trading.
†Indicates the basis could not be calculated because of no trading or no bid.

Table A4. Stewartville cash bids to farmers, Chicago Board of Trade futures prices and cash basis to future months, soybeans

Date	Stewartville cash bid	Chicago futures prices							Basis						
		Aug	Sept	Nov	Jan	Mar	May	July	Aug	Sept	Nov	Jan	Mar	May	July
6/1/72	3.34	3.50	3.36	3.22	3.26	3.30	3.34	3.51	.18	.02	-.12	-.08	-.04	0	.17
6/8/72	3.35	3.52	3.38	3.26	3.30	3.34	3.37	3.53	.17	.03	-.09	-.05	-.01	.02	.18
6/15/72	3.29	3.45	3.34	3.22	3.26	3.30	3.34	3.47	.18	.05	-.07	-.03	.01	.05	.18
6/22/72	3.25	3.42	3.30	3.17	3.21	3.25	3.29	3.42	.17	.05	-.08	-.04	0	.04	.17
6/29/72	3.30	3.47	3.37	3.22	3.21	3.25	3.29	3.47	.17	.07	-.08	-.09	-.05	-.01	.17
7/6/72	3.40	3.55	3.43	3.25	3.29	3.34	3.38	3.56	.15	.03	-.15	-.11	-.06	-.02	.16
7/13/72	3.32	3.47	3.36	3.20	3.25	3.29	3.33	3.47	.15	.04	-.12	-.07	-.03	.01	.15
7/20/72	3.32	3.46	3.31	3.18	3.22	3.26	3.30	3.50	.14	-.01	-.14	-.10	-.06	-.02	.18
7/27/72	3.30	3.52	3.34	3.17	3.21	3.25	3.29	NT*	.22	.04	-.13	-.09	-.05	-.01	-†
8/3/72	3.29	3.54	3.38	3.24	3.28	3.33	3.36	3.38	.25	.09	-.05	-.01	.03	.07	.09
8/10/72	3.32	3.61	3.46	3.31	3.35	3.39	3.42	3.43	.29	.14	-.01	.03	.07	.10	.11
8/17/72	3.22	3.60	3.42	3.29	3.33	3.38	3.42	3.43	.38	.20	.07	.11	.16	.20	.21
8/24/72	3.15	NT*	3.46	3.35	3.40	3.44	3.44	3.48	-†	.31	.20	.25	.29	.29	.33
9/1/72	3.15	3.52	3.46	3.41	3.45	3.50	3.53	3.54	.37	.31	.26	.30	.35	.38	.39
9/8/72	3.10	3.48	3.46	3.37	3.42	3.47	3.50	3.52	.38	.36	.27	.32	.37	.40	.42
9/15/72	3.14	3.51	3.47	3.41	3.46	3.50	3.53	3.54	.37	.33	.27	.32	.36	.39	.40
9/21/72	3.10	3.49	NT*	3.38	3.43	3.48	3.51	3.53	.39	-†	.28	.33	.38	.41	.43
9/28/72	3.13	3.56	NT*	3.45	3.49	3.54	3.57	3.59	.43	-†	.32	.36	.41	.44	.46
10/4/72	3.12	3.50	3.39	3.41	3.45	3.50	3.53	3.54	.38	.27	.29	.33	.38	.41	.42
10/11/72	3.08	3.48	3.40	3.37	3.41	3.46	3.50	3.51	.40	.32	.29	.33	.38	.42	.43
10/18/72	3.07	3.45	3.36	3.37	3.40	3.43	3.46	3.48	.38	.29	.30	.33	.36	.39	.41
10/25/72	3.10	3.52	3.40	3.43	3.46	3.50	3.53	3.55	.42	.30	.33	.36	.40	.43	.45
11/2/72	3.23	3.59	3.46	3.58	3.58	3.60	3.62	3.63	.36	.23	.35	.35	.37	.39	.40
11/9/72	3.22	3.59	3.46	3.60	3.57	3.58	3.61	3.62	.37	.24	.38	.35	.36	.39	.40
11/16/72	3.33	3.68	3.54	3.77	3.70	3.69	3.70	3.71	.35	.21	.44	.37	.36	.37	.38
11/24/72	3.44	3.78	3.56	NT*	3.80	3.81	3.81	3.81	.34	.12	-†	.36	.37	.37	.37
12/1/72	3.54	3.86	3.63	3.44	3.87	3.88	3.89	3.89	.32	.09	-.10	.33	.34	.35	.35
12/8/72	3.81	4.18	3.91	3.69	4.18	4.22	4.22	4.22	.37	.10	-.12	.37	.41	.41	.41
12/15/72	3.88	4.07	3.70	3.43	4.36	4.28	4.18	4.11	.19	-.18	-.45	.48	.40	.30	.23
12/22/72	3.66	3.98	3.62	3.41	4.17	4.16	4.09	4.03	.32	-.04	-.25	.51	.50	.43	.37
1/2/73	3.86	4.04	3.75	3.52	4.26	4.24	4.16	4.10	.18	-.11	-.34	.40	.38	.30	.24
1/9/73	3.87	4.04	3.79	3.56	4.30	4.28	4.20	4.11	.17	-.08	-.31	.43	.41	.33	.24
1/16/73	4.03	4.10	3.81	3.57	4.50	4.45	4.31	4.17	.07	-.22	-.46	.47	.42	.28	.14
1/23/73	4.33	4.23	3.96	3.66	NT*	4.75	4.50	4.32	-.10	-.37	-.67	-†	.42	.17	-.01
1/30/73	4.62	4.33	4.00	3.62	NT*	4.93	4.66	4.47	-.29	-.62	-1.00	-†	.31	.04	-.15
2/6/73	4.95	4.74	4.36	3.84	3.81	5.28	5.05	4.88	-.21	-.59	-1.11	-1.14	.33	.10	-.07
2/15/73	5.64	5.30	4.66	4.12	4.08	5.93	5.68	5.45	-.34	-.98	-1.52	-1.56	.29	.04	-.19
2/22/73	6.04	5.41	4.71	4.12	4.10	6.38	6.00	5.62	-.63	-1.33	-1.92	-1.94	.34	-.04	-.42
3/1/73	6.22	5.62	4.78	4.21	4.18	6.61	6.24	5.88	-.60	-1.44	-2.01	-2.01	.39	.02	-.34
3/8/73	6.51	5.80	4.78	4.12	4.08	6.81	6.52	6.12	-.71	-1.73	-2.39	-2.43	.30	.01	-.39
3/15/73	5.77	5.48	4.59	4.08	4.06	6.56	6.18	5.76	-.29	-1.18	-1.69	-1.71	.79	.41	-.01
3/22/73	5.59	5.16	4.56	4.13	4.13	NT*	5.79	5.42	-.43	-1.03	-1.46	-1.46	-†	.20	-.17
3/29/73	5.05	4.82	4.34	3.99	4.02	NT*	5.40	5.12	-.23	-.71	-1.06	-1.03	-†	.35	.07
4/5/73	5.80	5.50	4.91	4.22	4.22	4.24	5.99	5.76	-.30	-.89	-1.58	-1.58	-†	.56	.19
4/12/73	6.00	5.66	4.88	4.20	4.20	4.21	6.32	5.94	-.34	-1.12	-1.80	-1.80	-1.79	.32	-.06
4/19/73	6.27	5.85	4.94	4.32	4.34	4.35	6.46	6.13	-.42	-1.33	-1.95	-1.93	-1.92	.19	-.14
4/26/73	6.70	6.23	5.25	4.58	4.58	4.58	6.84	6.48	-.47	-1.45	-2.12	-2.12	-2.12	.14	-.22
5/3/73	7.50	6.88	5.70	5.60	4.58	4.59	7.73	7.23	-.62	-1.80	-1.90	-2.92	-2.91	.23	-.27
5/10/73	8.23	7.66	6.28	4.97	4.95	NT*	9.07	8.06	-.57	-1.95	-3.26	-3.28	-†	.84	-.17
5/17/73	8.06	7.57	6.02	4.56	4.56	4.56	8.32	8.18	-.49	-2.04	-3.50	-3.50	-3.50	.26	.12
5/24/73	9.21	8.58	7.02	5.56	5.56	5:56	0	9.18	-.63	-2.19	-3.65	-3.65	-3.65	-9.21	-.03
6/1/73	11.00	10.34	8.66	6.38	6.20	6.12	6.06	11.33	-.66	-2.34	-4.62	-4.80	-4.88	-4.94	.33
6/8/73	9.00	9.94	8.13	5.95	5.80	5.70	5.67	10.17	.94	-.87	-3.05	-3.20	-3.30	-3.33	1.17
6/15/73	9.25	9.85	7.79	5.72	5.68	5.64	5.64	10.49	.60	-1.46	-3.53	-3.57	-3.61	-3.61	1.24
6/22/73	10.40	10.85	8.77	6.65	6.51	6.45	6.45	11.51	.45	-1.63	-3.75	-3.89	-3.89	-3.95	1.11

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Table 24 (Continued).

Date	Stewartville cash bid	Chicago futures prices							Basis						
		Aug	Sept	Nov	Jan	Mar	May	July	Aug	Sept	Nov	Jan	Mar	May	July
6/27/73	9.50	10.45	9.00	6.12	6.04	6.04	6.04	10.80	.95	-.50	-3.38	-3.46	-3.46	-3.46	1.30
7/3/73	NB±	9.25	7.80	5.96	5.89	5.87	5.85	8.70	-†	-†	-†	-†	-†	-†	-†
7/10/73	5.25	7.65	6.40	5.70	5.65	5.68	5.70	7.40	2.40	1.15	.45	.41	.43	.45	2.15
7/17/73	8.10	9.00	8.00	7.03	6.91	6.83	6.78	10.27	.90	-.10	-1.07	-1.19	-1.27	-1.32	2.17
7/23/73	9.80	10.60	9.60	7.63	7.44	7.41	7.30	NT*	.80	-.20	-2.17	-2.36	-2.39	-2.50	-†
7/30/73	7.08	10.20	9.00	7.72	7.54	7.54	7.42	NT*	3.12	1.92	.64	.46	.46	.34	-†
8/7/73	8.50	9.55	8.50	7.56	7.43	7.42	7.32	7.30	1.05	0	-.94	-1.07	-1.08	-1.18	-1.20
8/14/73	10.05	10.75	9.40	9.02	8.92	8.92	8.92	8.90	.70	-.65	-1.03	-1.13	-1.13	-1.13	-1.15
8/21/73	8.00	8.75	8.14	7.64	7.56	7.58	7.56	7.52	.75	.14	-.36	-.44	-.42	-.44	-.48
8/28/73	8.50	NT*	7.00	7.01	6.94	6.95	6.93	6.93	-†	.50	.51	.44	.45	.43	.43
9/5/73	5.95	6.50	6.51	6.61	6.60	6.62	6.68	6.71	.55	.56	.66	.65	.67	.73	.76
9/12/73	NB±	6.30	6.40	6.30	6.31	6.36	6.38	6.37	-†	-†	-†	-†	-†	-†	-†
9/17/73	5.85	6.46	6.42	6.30	6.34	6.42	6.46	6.48	.61	.57	.45	.49	.57	.61	.63
9/24/73	5.95	6.70	NT*	6.59	6.60	6.68	6.72	6.75	.75	-†	.64	.65	.73	.77	.80
10/1/73	5.75	6.43	6.30	6.34	6.36	6.40	6.44	6.44	.68	.55	.59	.61	.65	.69	.69
10/9/73	5.55	6.36	6.20	6.16	6.22	6.28	6.36	6.39	.81	.65	.61	.67	.73	.81	.84
10/16/73	5.05	5.98	5.80	5.89	5.89	5.95	5.98	8.00	.93	.75	.84	.84	.90	.93	.95
10/23/73	4.90	5.66	5.54	5.49	5.54	5.61	5.65	5.70	.76	.64	.59	.64	.71	.75	.80
10/30/73	4.76	5.36	5.30	5.32	5.29	5.36	5.38	5.40	.80	.54	.56	.53	.60	.62	.64
11/7/73	4.96	5.37	5.32	5.42	5.36	5.39	5.44	5.43	.41	.36	.46	.40	.43	.48	.47
11/14/73	5.05	5.50	5.42	5.50	5.46	5.49	5.49	5.52	.45	.37	.45	.41	.44	.44	.47
11/21/73	5.63	6.03	5.94	NT*	6.09	6.10	6.11	6.10	.40	.31	-†	.46	.47	.48	.47
11/28/73	5.62	6.03	5.94	NT*	6.09	6.10	6.11	6.10	.41	.32	-†	.47	.48	.49	.48
12/5/73	5.45	6.09	5.98	5.94	6.06	6.10	6.11	6.13	.64	.53	.49	.61	.65	.66	.68
12/12/73	5.67	6.26	6.21	6.13	6.20	6.25	6.28	6.31	.59	.54	.46	.53	.58	.61	.64
12/19/73	5.43	5.97	5.96	5.92	5.88	5.94	5.99	6.04	.54	.53	.49	.45	.51	.56	.61
12/26/73	5.37	5.95	5.92	5.87	5.83	5.90	5.94	5.99	.58	.55	.50	.46	.53	.57	.62
1/3/74	5.40	6.00	5.96	5.92	5.85	5.94	6.01	6.03	.60	.56	.52	.45	.54	.61	.63
1/9/74	5.35	6.16	6.11	6.04	5.99	6.06	6.11	6.16	.81	.76	.69	.64	.71	.76	.81
1/16/74	5.66	6.30	6.25	6.20	6.13	6.20	6.26	6.32	.64	.59	.54	.47	.54	.60	.66
1/23/74	5.68	6.36	6.29	6.22	NT*	6.24	6.28	6.34	.68	.61	.54	-†	.56	.60	.66
1/30/74	5.80	6.38	6.29	6.22	NT*	6.34	6.39	6.40	.58	.49	.42	-†	.54	.59	.60
2/7/74	5.76	6.42	6.29	6.22	6.24	6.36	6.40	6.44	.66	.53	.46	.48	.60	.64	.68
2/14/74	5.86	6.51	6.40	6.27	6.30	6.42	6.49	6.55	.65	.54	.51	.55	.67	.63	.69
2/21/74	5.95	6.61	6.44	6.32	6.36	6.50	6.59	6.64	.66	.49	.37	.41	.55	.64	.69
2/27/74	5.70	6.48	6.44	6.26	6.40	6.32	6.43	6.50	.78	.74	.56	.70	.62	.73	.80
3/6/74	5.70	6.44	6.28	6.26	6.28	6.30	6.38	6.44	.74	.58	.56	.58	.60	.68	.74
3/13/74	5.88	6.56	6.48	6.39	6.42	6.43	6.50	6.56	.88	.60	.51	.54	.55	.62	.68
3/20/74	5.78	6.37	6.30	6.18	6.23	6.34	6.32	6.37	.59	.52	.40	.45	.56	.54	.59
3/27/74	5.57	6.04	5.66	5.77	5.80	NT*	6.05	6.04	.47	.29	.20	.23	-†	.48	.47
4/3/74	5.40	5.76	5.64	5.54	5.57	5.60	5.88	5.82	.36	.24	.14	.17	.20	.48	.42
4/10/74	5.02	5.36	5.31	5.24	5.27	5.31	5.47	5.42	.34	.29	.22	.25	.29	.45	.40
4/17/74	5.14	5.45	5.43	5.33	5.36	5.38	5.55	5.52	.31	.29	.19	.22	.24	.41	.38
4/24/74	5.25	5.56	5.48	5.44	5.48	5.50	5.54	5.57	.31	.23	.19	.23	.25	.29	.32
5/1/74	5.10	5.44	5.43	5.39	5.34	5.37	5.40	5.44	.34	.33	.29	.24	.27	.30	.34
5/8/74	5.09	5.42	5.35	5.28	5.31	5.36	5.40	5.42	.33	.28	.19	.22	.27	.31	.33
5/15/74	5.17	5.53	5.50	5.41	5.46	5.50	5.45	5.52	.36	.33	.24	.29	.33	.28	.35
5/22/74	5.12	5.43	5.38	5.28	5.33	5.36	NT*	5.43	.31	.26	.16	.21	.24	-†	.31
5/29/74	5.27	5.61	5.54	5.38	5.42	5.47	NT*	5.60	.34	.27	.11	.15	.20	-†	.33
6/5/74	5.02	5.40	5.38	5.31	5.35	5.41	5.46	5.41	.38	.36	.29	.33	.39	.44	.39
6/12/74	5.09	5.44	5.42	5.36	5.40	5.45	5.48	5.46	.35	.33	.27	.31	.36	.39	.37
6/19/74	5.15	5.52	5.49	5.44	5.48	5.54	5.57	5.53	.37	.34	.29	.33	.39	.42	.38
6/26/74	5.36	5.79	5.84	5.80	5.84	5.91	5.94	5.78	.43	.48	.44	.48	.55	.58	.42
7/3/74	5.74	6.19	6.21	6.20	6.24	6.30	6.32	6.18	.45	.47	.46	.50	.55	.58	.44
7/10/74	5.79	6.22	6.21	6.19	6.22	6.29	6.32	6.24	.43	.42	.40	.43	.50	.53	.45
7/17/74	6.66	6.86	6.86	6.82	6.86	6.89	6.89	6.97	.20	.20	.16	.20	.23	.23	.31
7/24/74	7.33	7.85	7.86	7.85	7.88	7.88	7.87	NT*	.52	.53	.52	.55	.55	.54	-†
7/31/74	8.40	8.95	8.95	8.86	8.82	8.81	8.74	NT*	.55	.55	.46	.42	.41	.34	-†
8/7/74	7.96	8.44	8.42	8.44	8.46	8.47	8.49	8.46	.48	.46	.48	.50	.51	.53	.50
8/14/74	7.65	8.10	8.13	8.10	8.08	8.16	8.14	8.15	.45	.48	.45	.43	.51	.49	.50
8/21/74	6.88	7.22	7.26	7.28	7.30	7.38	7.40	7.45	.34	.38	.40	.42	.50	.52	.57
8/28/74	7.12	NT*	7.47	7.46	7.50	7.56	7.60	7.60	-†	.35	.34	.38	.44	.48	.48
9/4/74	6.76	7.37	7.14	7.18	7.24	7.30	7.38	7.40	.61	.38	.42	.48	.54	.62	.64
9/11/74	7.18	7.66	7.44	7.48	7.52	7.63	7.66	7.71	.48	.26	.30	.34	.45	.48	.53
9/18/74	6.96	7.68	7.36	7.38	7.48	7.58	7.67	7.71	.72	.40	.42	.52	.62	.71	.75
9/25/74	7.72	8.36	NT*	8.18	8.26	8.34	8.37	8.40	.64	-†	.46	.54	.62	.65	.68