OKLAHOMA COOPERATIVE EXTENSION SERVICE AGEC-593

Price risk management: What to expect

Proof that Oklahoma Wheat Producers Do a Good Job of Marketing

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This is the fifth in a series of five fact sheets on price risk management. This paper is the result of the statements: "Producers do a poor job of marketing." and "Most producers sell in the bottom third of the market." We felt that it was time to either find evidence supporting the statements or provide evidence that would help put the statements to rest. Specific objectives were to estimate: (1) How the average price received by producers compares to an average market price, (2) what the average price received would be if all wheat had been sold at harvest.

Data

For the period June 1992 through May 2001, prices were collected from three elevators in Oklahoma. Data included for each purchase were the date, price, and bushels. Daily price quotes for the three locations reported by the Oklahoma Crop Reporting Service, Oklahoma Department of Agriculture, Food, and Forestry were also collected.

Elevator South, located in southern Oklahoma, received an average of 1.2 million bushels per year and averaged 1,572 purchases per year (763 bushels average per purchase). Elevator Central, located in west-central Oklahoma, received an average of 1.25 million bushels per year and averaged 789 purchases per year (1,584 bushels average per purchase). Elevator North, located in northern Oklahoma, received an average of 2.3 million bushels per year and averaged 837 transactions per year (2,748 bushels average per purchase).

Market Price

Daily cash prices for each location were adjusted for storage and interest. Storage cost was the actual daily storage rate charged by the elevator and the interest rate was the prime interest plus two percent calculated on a daily basis.

Daily Market Price Average

Averaging daily cash prices show the average price a producer would have received if an equal amount of wheat had been sold every market day of the marketing-year (June through May) or every day over the nine-year period (Table 1). The nine-year average price was $3.04 for elevator South, $2.96 for elevator Central, and $3.03 for elevator North. If one bushel of wheat had been sold each marketing day in each location, producers in southern Oklahoma would have received 8 cents per bushel more than producers in central Oklahoma and 1 cent per bushel more than producers in Northern Oklahoma.

Selling All Wheat at Harvest

Another price benchmark is selling all wheat on a single day during the marketing year (Table 1). Harvest is normally complete by June 10 in southern Oklahoma, June 15 in central Oklahoma, and June 25 in northern Oklahoma. For the nine-year period 1992 through 2001 on the nearest business day to June 10, if producers had sold all wheat on the nearest business day to June 10 (South), June 15 (Central) or June 25 (North), the average price per bushel received over the nine-year period would have been $3.24 (South), $3.09 (Central), and $3.20 (North).

Producers in southern Oklahoma would have received 15 cents more than producers in central Oklahoma and four cents more than producers in northern Oklahoma.

Selling at Harvest versus One Bushel per Day

Compared to selling at harvest or every business day of the year, selling at harvest is 20 cents better ($3.24 vs. $3.04) in southern Oklahoma, 13 cents better ($3.09 vs. $2.96) in central Oklahoma, and 17 cents better ($3.20 vs. $3.03) in northern Oklahoma.

Actual Prices Received by Producers

Elevators South, Central, and North provided records that included every purchase of wheat for the nine-year period from June 1992 through May 2001. The average annual price was calculated by multiplying the price paid minus storage and interest costs by the number of bushels purchased and then dividing the amount paid for all purchases (income) for the year by total bushels bought (Table 1).

Note that the average price paid by elevator South was higher than the price paid by either elevator Central or North and that the price paid by elevator North was higher than the prices paid by elevator Central (Table 1). The price difference paid at each elevator may be a function of harvest timing, distance to terminal markets, and local competition.

The nine-year average price received by South was $3.22 compared to $3.05 for Central, and $3.11 for North.

Table 1. Nine-Year Average Market Price Offered and Actual Price Received.

Average Price	Elevator		
	South	Central	North
Daily[a]	$3.04	$2.96	$3.03
Harvest[b]	$3.24	$3.09	$3.20
Farmer[c]	$3.22	$3.05	$3.11

Note: Prices were adjusted for actual storage cost and interest cost (prime rate plus 2 percent).

[a] Average price from selling one bushel each marketing day.

[b] Nine-year average price from selling all wheat at harvest (South—June 10, Central—June 15 and North—June 25).

[c] Actual average price received by producers.

Producers selling to South received 17 cents more per bushel than producers selling to Central, and 11 cents more than producers selling to North.

Producer's Prices Received versus Market Prices

The data show that the price ($3.22) received by the producers selling to South beat daily average price ($3.04) by 18 cents per bushel (Table 1). If the producers had sold all the wheat at harvest ($3.24), they would have received an additional two cents per bushel.

Over the nine-year period, producers selling wheat to Central ($3.05) beat the daily average price ($2.96) by nine cents per bushel (Table 1). By selling all the wheat at harvest ($3.09), Central producers would have increased the price received by four cents per bushel.

The nine-year average price ($3.11) received by producers selling wheat to North was eight cents per bushel higher ($3.03) than if an equal amount of wheat had been sold every business day (Table 1). If all the wheat had been sold at harvest ($3.20), the price received would have been increased by nine cents per bushel.

Producer Prices Received versus Daily Market Price by Year

Producers that sold to South beat the daily average price in six out of the nine years (Table 2). They received higher prices for the 1992 and 1996 through 2000 wheat crops. The prices received for the 1993 through 1995 wheat crops were below the daily average. However for the nine-year period, producers selling wheat to South beat the daily average by 18 cents per bushel.

Producers that sold to Central beat the daily average price in eight out of the nine years. Only in 1995 was the daily average price higher than the average producer price. Over the nine-year period, the price received was nine cents higher than if wheat had been sold evenly every marketing day of the year.

Producers that sold to North beat the daily average price in eight out of the nine years. Only in 1995 was the daily average price higher than the average producer price. Over the nine-year period, the price received was eight cents higher than if wheat had been sold evenly every marketing day of the year.

Timing of Wheat Sales

Price information shown in Table 1 indicates that producers at all three elevators would have increased the average price received if they sold wheat at harvest each year. South producers would have increased the price two cents, Central producers four cents, and North producers nine cents.

Records show that producers delivering to South normally harvest and sell about six percent of their wheat in late May. To remain consistent with elevators Central and North, the "new-crop" wheat harvested and sold in May is shown as sold in June.

Producers selling to South normally sell 60 percent of the wheat by July 1 and 69 percent by August 1. Over the nine-year period, there is only a two-cent difference between selling all the wheat on June 10 each year and the price producers actually received. This is probably because Southern producers tend to sell most wheat "across the scales" and only 19 percent of the wheat is sold after January 1.

Producers selling wheat to Central sell only nine percent in June and 15 percent by the end of July. Nearly 40 percent of the wheat is sold in November and December. Still, there is only a four-cent difference between the average price received and the price received by producers. Thirty-two percent of Central's wheat was sold after January 1.

Producers selling wheat to North sold seven percent in June and had sold fifteen percent by August 1. Thirty-one percent of the wheat was sold in September and 30 percent was sold after January 1.

Conclusions

The average price received by producers at all three elevators was greater than the average price offered by the market. Thus the statement that "most producers sell in the bottom one-third of the market" was not supported by this study. The data indicated that 75 to 80 percent of the wheat was sold in the upper two-thirds of the market and about two-thirds of the wheat was sold in the top half of the market.

Three marketing methods were evaluated. First was selling all the wheat at harvest. Second was selling the wheat equally every day throughout the marketing year. And third was how producers actually sold the wheat.

Of the three options evaluated, the method that produced the highest price at all three elevators was to sell wheat at harvest. Southern producers that sold most of their wheat at harvest had the highest average price relative to selling

Table 2. Average Price Received by Farmers and Average Market Price.

	Elevator					
	South		Central		North	
Crop Year	Farmer[a]	OK[b]	Farmer[a]	OK[b]	Farmer[a]	OK[b]
1992	$ 3.11	$ 2.82	$ 3.00	$ 2.81	$ 2.93	$ 2.82
1993	$ 2.71	$ 2.79	$ 2.78	$ 2.75	$ 2.86	$ 2.81
1994	$ 3.13	$ 3.18	$ 3.20	$ 3.17	$ 3.28	$ 3.26
1995	$ 4.12	$ 4.80	$ 4.48	$ 4.68	$ 4.66	$ 4.78
1996	$ 5.36	$ 4.12	$ 4.25	$ 3.94	$ 4.25	$ 4.12
1997	$ 3.35	$ 2.97	$ 2.92	$ 2.86	$ 3.19	$ 2.91
1998	$ 2.54	$ 2.25	$ 2.37	$ 2.18	$ 2.33	$ 2.21
1999	$ 2.18	$ 1.99	$ 2.06	$ 1.92	$ 2.00	$ 1.98
2000	$ 2.52	$ 2.46	$ 2.43	$ 2.36	$ 2.48	$ 2.41
Average	$ 3.22	$ 3.04	$ 3.05	$ 2.96	$ 3.11	$ 3.03

[a] Average price per year was calculated by dividing crop year income adjusted for storage (~2.5¢/bu./mo.) and interest costs (prime rate + 2% times June 20 wheat price) by crop year bushels purchased.

[b] The average annual price was calculated by averaging the daily posted price for each business day of the marketing year and adjusted for storage and interest costs.

equally throughout the year or selling all wheat at harvest. Southern producers probably had the highest relative return because they sold most of their wheat at harvest.

Not shown in this fact sheet but indicated by the price data was that wheat that was sold after the first of the year produced a lower price than wheat sold closer to harvest.

Storage cost and interest cost averaged about five cents per bushel per month (two and a half cents storage and two and a half cents interest). Producers that have on-farm storage or access to lower interest money (less than the prime rate plus two percent) could have increased the average price received by holding wheat into the October through November time period.

Oklahoma wheat producers appear to be doing a relatively efficient job of marketing their wheat. The biggest problem may be that some producers tend to store wheat too long. After storage and interest was subtracted on some wheat, the net price was negative.

The data also indicated that the price received for wheat sold after January 1 tended to be less than for wheat sold between harvest and December 31.

Table 3. Nine-Year Average of Percent Wheat Sold by Month (June 1992-May 2001).

	Elevator		
Month	South	Central	North
June	54%	9%	7%
July	9%	6%	8%
August	3%	6%	6%
September	2%	4%	31%
October	3%	4%	5%
November	2%	25%	5%
December	3%	14%	6%
January	3%	6%	6%
February	2%	6%	12%
March	8%	8%	5%
April	2%	5%	3%
May	10%	7%	4%

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Issued in furtherance of Cooperative Extension work, acts of May 8 and June 30, 1914, in cooperation with the U.S. Department of Agriculture, Robert E. Whitson, Director of Cooperative Extension Service, Oklahoma State University, Stillwater, Oklahoma. This publication is printed and issued by Oklahoma State University as authorized by the Vice President, Dean, and Director of the Division of Agricultural Sciences and Natural Resources and has been prepared and distributed at a cost of 20 cents per copy. 0404 JA