Grain Marketing Tools: A Survey of Illinois Grain Elevators

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Introduction

America' grain handling system is a dynamic industry faced with a growing list of challenges. In this complex grain handling system, country elevators are at the furthest upstream point in the grain marketing channel. These firms typically represent the initial point of product sale by grain producers. They purchase, condition, and store grain and then market grain to a variety of processing and exporting firms. Issues such as identity preservation and changes in the market structure due to the increased demand for corn as an ethanol feedstock are part of the challenges faced by firms in this industry.

As with most sectors of the agriculture economy, the U. S. country grain elevator industry has experienced considerable consolidation and concentration. By the same token, the country elevator's customer base (grain producers and landlords) has also changed rather dramatically as grain production takes place on larger and fewer farms. The profitability of operating a country elevator is directly related to the volume of grain the country elevator purchases over the course of a marketing year (Baumel, 1997). Because the basic services offered by country elevators are very similar (purchasing, conditioning and storing grain), country elevators attempt to differentiate themselves from their competition by offering customers a variety of cash grain marketing tools. These tools range from the basic cash forward contracts to minimum price contracts to the so called "new generation grain marketing contracts".

The primary objective of this study was to determine the marketing contracts grain elevator firms offer their customers and the extent to which these contracts are used by the elevator's customers. A mail survey was sent to the members of the Grain and Feed Association of Illinois. The members of this Organization represent the management of approximately 95% of the country grain elevators in Illinois. The results of this study are compared to a similar study conducted by researchers at the University of Illinois in 1994. In addition, marketing contracts offered are compared to the firm's storage capacity and business organization. As a state, Illinois ranks as the second largest producer of corn and the number one producer of soybeans. The types of marketing contracts offered by Illinois country elevators are likely to reflect the contracts offered by country elevators across the Midwest.

This paper also identifies some of the structural characteristics of Illinois grain elevators such as storage capacity, business organization, number of operational sites, size of customer base, and volume of crop receipts.

Methodology

In November of 2006, a mail survey was sent to 250 members of the Grain and Feed Association of Illinois. Approximately 95 percent of all country grain elevator companies in Illinois are members of this organization. As an incentive for participation, all elevator managers returning a completed survey were promised a copy of the final report. A follow-up reminder and survey were sent to non-responding elevator managers three weeks after the initial survey was mailed. One hundred and sixty usable surveys were returned for a response rate of 64%.

The grain elevator managers were queried about the size and scope of their firms' operation, their business organization, and the types of marketing tools they offer to their customers. A chisquare procedure was used to determine statistically significant relationships between the elevator company characteristics and marketing tools offered to customers.

Characteristic of Responding Grain Elevators

Consolidation has certainly occurred in Illinois' grain elevator industry. The membership of Grain and Feed Association of Illinois declined from 425 members in 1994 to 250 members in 2006. As the number of elevator companies declined almost 41%, their average storage capacity more than doubled.

As would be expected in surveying grain elevator managers in Illinois, the majority of their grain receipts were corn and soybeans. The managers indicated that corn accounted for 73% of the volume of grain handled, soybeans accounted for 24% of grain volume, and the remainder was made up of a combination of wheat, oats, and grain sorghum.

Elevator Storage Capacity

The average capacity of all the responding Association members was slightly less than 4.6 million bushels. As a point of comparison, the 1994 study conducted by Guither and Hambleton indicated that average capacity state wide was 2.2 million bushels. Thirty-four percent indicated storage capacity of two million bushels or less, 38% indicated capacity between two million and five million, while 28% had capacity to store more than five million bushels.

Elevators organized as cooperatives averaged over 5.5 million bushels of storage capacity, while elevators organized as sole proprietorships, partnerships, corporations, and limited liability companies had average storage capacity of 3.6 million bushels.

Business Organization

Grain elevators organized as cooperatives accounted for 47% of the elevator companies responding to the survey. Thirty-eight percent were organized as corporations and the remaining 15% indicated sole proprietorship, partnership, S corporations of limited liability company as their business organization.

Customer Base

Twenty-three percent of the responding elevator managers indicated that their firm served less than 100 customers. Twenty-eight percent indicated a customer base between 101 and 200 and 15% indicated a customer base between 201 and 300. The remaining 33 % of the grain elevators had customer numbers in excess of 300.

The dynamics of customer numbers change significantly when large and small elevators are examined. Nearly one half of the grain elevators with less than two million bushels of storage capacity had less than 100 customers, while none of the elevators with storage capacity of greater than five million bushels had a customer base that small. Forty percent of the large grain elevators (more than five million bushels) had customer base in excess of 600, while on 2% of the smaller elevators had a customer base of that magnitude.

The survey also indicated that the majority of grain elevators in Illinois operate from multiple sites. Only 35% of the respondents indicated an operation from a single location, 48% indicated they operated from two to three sites.

Offer and Use of Marketing Tools: 2006 Compared to 1994

The percentage of elevators offering various marketing contracts and the estimated percentage of customers using those tools are indicated in Table 1. The forward cash contract remains the most popular marketing tool offered by country elevators and is the contract most commonly used by elevator customers. Basis contracts and delayed pricing contracts which allow grain producers to deliver grain but defer establishing the actual sale price are offered by over 90% of the elevators responding. Although these contracts are commonly offered, producer and landlord use remains rather modest with elevator managers estimating the 22% of their customers using delayed pricing contracts and 8% using basis contracts. As can be noted, the percentage of elevators offering basis contracts, hedge-to-arrive contracts, and minimum price contracts increased from 1994 to 2006. Cash contracts with a buy back option and multiple year contracts have declined.

Table 1: Grain Marketing Tools* - 2006 Compared to 1994.

Contract Type	2006	1994	Change
Forward Cash Contract			
Offered	98%	98%	0%
Used	69%	57%	+12%
Cash Contract with Buy Back			
Offered	26%	32%	-6%
Used	12%	17%	-5%
Basis Contract			
Offered	92%	87%	+5%
Used	8%	8%	0%
Delayed Pricing Contract			
Offered	90%	94%	-4%
Used	22%	32%	-10%
Hedge-to-Arrive			
Offered	82%	69%	+13%
Used	14%	7%	+7%
Multiple Year Contract			
Offered	34%	73%	-39%
Used	10%	8%	+2%
Minimum Price Contract			
Offered	64%	17%	+47%
Used	5%	3%	+2%
Premium Offer Contract			
Offered	26%	27%	-1%
Used	6%	8%	-2%
***see Appendix for definitions of Grain Marketing Tools**			

Marketing Tools Offered by Elevator Size

Table 2 compares the offering of marketing contracts by elevator size. Forward cash contracts are offered by nearly all of the elevators regardless of size. Deferred pricing arrangements such as basis and delayed pricing contracts were offered by nearly all of the large elevators; however, elevators with five million bushels of capacity or less offer these contracts at somewhat lower levels. In most cases, larger elevators (more than five million bushels) were more likely to offer somewhat more complex marketing contracts such as hedge-to-arrive, minimum price, and premium offer. Only the offering of the hedge-to-arrive and the premium offer contracts were statistically different when examined across elevator size. While the larger elevators offer these contracts, their use by customers remains at low levels.

Table 2: Grain Marketing Tools* - Comparison by Elevator Storage Capacity

Contract Type	Large > 5 million bushels	Medium 2-5 million bushels	Small < 2 million bushels
Forward Cash Contract			
Offered	98%	100%	96%
Used	71%	66%	70%
Cash Contract with Buy Back			
Offered	30%	19%	29%
Used	12%	14%	11%
Basis Contract			
Offered	98%	93%	88%
Used	10%	5%	10%
Delayed Pricing Contract			
Offered	98%	89%	84%
Used	23%	18%	22%
Hedge-to-Arrive**			
Offered	100%	75%	73%
Used	19%	12%	11%
Multiple Year Contract			
Offered	41%	32%	28%
Used	9%	11%	7%
Minimum Price Contract			
Offered	73%	67%	58%
Used	6%	4%	5%
Premium Offer Contract**			
Offered	43%	16%	20%
Used	5%	3%	7%
see Appendix for definitions of Grain Marketing Tools** * Significant at the .05 level**			

Table 3 shows the marketing contracts offered by grain elevators organized as cooperatives and non-cooperatives. The type of business organization appears to have little impact on extent to which elevators offer their customers marketing tools.

Table 3: Grain Marketing Tools* - Business Organization

Contract Type	Cooperatives	Non-Cooperatives	Difference
Forward Cash Contract			
Offered	99%	96%	+3%
Used	69%	69%	0%
Cash Contract with Buy Back			
Offered	23%	28%	-5%
Used	14%	10%	+4%
Basis Contract			
Offered	94%	91%	+3%
Used	5%	11%	-6%
Delayed Pricing Contract			
Offered	94%	87%	+7%
Used	21%	24%	-3%
Hedge-to-Arrive			
Offered	86%	81%	+5%
Used	14%	14%	0%
Multiple Year Contract			
Offered	30%	38%	-8%
Used	9%	10%	-1%
Minimum Price Contract			
Offered	70%	64%	+6%
Used	5%	5%	0%
Premium Offer Contract			
Offered	28%	23%	+5%
Used	3%	8%	-5%
***see Appendix for definitions of Grain Marketing Tools**			

Summary

The survey of Illinois Grain and Feed Association members indicated a substantial change in the structure of the grain elevator industry in Illinois over the past 12 years. The average storage capacity of elevators has more than doubled from 2.16 million bushels in 1994 to 4.6 million bushels in 2006. The number of firms (members of the Grain and Feed Association of Illinois) in the industry has declined from 425 in 1994 to 250 in 2006, a decrease of more than 40%. The number of customers (producers and landlords) per elevator also declined, with an average customer base of 350 per elevator in 1994 compared to an average base of less than 300 in 2006.

The survey also indicated that there have been rather modest changes in the level and use of cash grain marketing tools offered by the industry. However, comparing the marketing contracts offered by elevator size (small elevators of less than two million bushel capacity versus large elevators with more than five million bushels capacity) does show significant differences in the variety of contracts offered. The survey indicated that large elevators were more likely to offer their customers such marketing contracts such as delayed price, hedge-to-arrive, minimum price, and premium offer. The type of business organization, cooperatives vs. non-cooperatives appears to be little impact on the types of marketing contracts offered.

The use of various marketing tools by producers remains little changed over the past twelve years. Studies indicate that producers are more likely to concentrate on costs, planting intensity, tillage operations, and yields to enhance profits than on price (Nivens, Kastens and Dhuyvetter, 2002). However other studies indicate that spreading sales over the marketing year can contribute to the financial success of grain producers (Mirshra, El-Osta and Johnson), thus the use of forward cash contracts by nearly 70% of elevator customers can be explained.

References

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Appendix: Definitions of Grain Marketing Tools (Guither and Hambleton, 1995)

Forward cash contract: An agreement that establishes price, location of delivery, and time of delivery for grain to be delivered at a later date. The contract may be made before harvest.

Delayed price contract: An agreement that transfers the title to grain to the buyer at the time of delivery but does not establish price. The date of pricing is at the option of the seller, within the period agreed to in the contract. A delayed price contract fixes the schedule of service charges and allows the seller to speculate on the cash price.

Basis Contract: An agreement establishing that the price paid for grain to the seller will be the price of a specified futures contract on the day of the seller's choosing, minus the basis that existed at the time of the contract. A basis contract fixes the basis and allows the seller to speculate on the futures price.

Minimum price contract: An agreement in which the buyer establishes a minimum price by buying put options on a quantity of grain. Minimum price is offered to a seller through a cash contract. If prices go up, the option is allowed to expire, and the buyer pays the seller a higher price. If the price goes down, the buyer pays the minimum price agreed to in the contract and offsets losses by cashing in on the higher premium for the put option.

In a second type of minimum price contract, the buyer buys a call option and contracts a sale using the current price with a seller. If prices go up, the buyer cashes in on the higher premium for the call option and passes the higher price onto the seller as agreed to in the contract.

Hedge-to-arrive contract (also known as futures-only contract): An agreement specifying the time of delivery for grain and the futures price on which the seller's price will be based. The futures price, established at the time of contract, is the current price of the appropriate futures contract. The seller then chooses the date, before expiration of the contract, on which to establish the basis portion of this price. A hedge-to-arrive contract allows the seller to speculate on basis improvement without trading in the futures market directly.

Cash contract with buy-back: A variation of the forward cash contract in which the seller locks in a cash price for later delivery but has the right to buy back the contract if prices decline. The time of the contract establishes the initial price. If a buy-back occurs, the gain to the seller is added to a later sale to that buyer. The buyer sells futures contracts at the time of the initial contract. If prices decline, the buyer buys the futures and passes the profit back to the producer.

Premium offer contract: A variation of the forward cash contract in which the buyer pays a premium for grain sold contingent upon the seller's making a firm offer of an equal number of bushels at a specific (higher) futures price. If the futures reach that price, the seller automatically sells the grain, using the basis that day for the appropriate shipment period. The seller makes no additional sales if the futures fail to reach that price. The buyer sells call options at the strike price equal to the offer price of the seller. The amount of the premium on the option determines the premium to the seller for the initial sale.

Multiple-year contract: A variation of the forward cash contract in which the seller is allowed to change the time of delivery, even into the next marketing year. The time of the contract establishes the initial price and the buyer hedges by selling futures contracts. The seller changes the time of delivery, the elevator moves the hedge to a later contract and adjusts the price to the seller by the amount of the premium or the discount incurred in rolling the hedge.