



# ECONOMICS COMMENTATOR

South Dakota State University

No. 511

September 22, 2009



## South Dakota Grain Elevators: Manage Characteristics and Impact of Ethanol

by

Yonas Hamda, Research Associate<sup>1</sup>  
Bashir Qasmi, Associate Professor  
Scott Fausti, Professor

In this article, we present research findings of the 2008 grain elevator survey compiled for marketing year 2005/06. The focus of this article is on changes in management characteristics between 1994/95 and 2005/06 and impact of ethanol plants on grain elevator businesses in 2005/06. Specifically examined issues are as follows: elevator operator's education level, overall experience in the grain business, training in commodity futures, access to marketing information, risk management practices, pressing problems in the business and the impact of ethanol plant location on quantity of grains handled by country grain elevators in South Dakota.

### Education level and business experience

The education level of grain elevator managers in South Dakota has increased. In 2005/06, the proportion of high school educated managers dropped to 31%, from 52% in 1994/95. Meanwhile, the proportion of college graduated managers increased from 26% to 33%. More education has been witnessed in all crop reporting districts except the Northeast region where the percentage with only high school education increased from 53% in 1994/95 to 60% in 2005/06. The Southeast region, which includes the Sioux Falls metropolitan area, has shown the largest increase in the share of college graduated managers from 26% in 1994/95 to 64% in 2005/06.

The overall experience level of managers in grain merchandising has increased considerably, reflecting low turnover in the industry. In 2005/06, 58% of elevator managers in South Dakota had over 20 years of experience in the grain business, compared with 48% in 1994/95. The North Central and East Central regions of South Dakota have seen a decline in the proportion of managers with over 20 years of experience.

### Risk management practices

Commodity market behavior is unpredictable and requires up-to-date knowledge and access to information to manage risk. In 2005/06, 79% of managers and 63% of employees attended grain price risk management seminars or short courses within the preceding three years. Employees' attendance has significantly increased from less than 40% in 1994/95 to over 60% in 2005/06. Almost, all grain elevators in the state had access to electronic grain marketing information in 1994/95 and 2005/06. Access to printed grain marketing information is still important for over 60% of the elevators in 2005/06.

The responsibility of planning and implementing risk management strategies differs based on the business structure of an elevator. As expected, grain elevators that are owned by cooperatives or corporations depend more on board members or corporate personnel for planning and implementing risk management strategies. Elevators that are independently owned rely more on elevator managers for planning and implementing risk management strategies.

In 2005/06, the most widely used method to manage grain price risk by South Dakota elevators was hedging through the use of commodity futures followed by forward sale contracts (Table 1).

<sup>1</sup> Contact first author at [Yonas.hamda@sdstate.edu](mailto:Yonas.hamda@sdstate.edu) or 605-688-4141.

Hedging with futures was used by almost all elevators that handled corn, soybeans, spring wheat and winter wheat (99%, 96%, 95% and 98% of these crops respectively). Although forward contracts were used by at least a third of surveyed elevators in 2005/06, this method covered a relatively small portion of corn, soybeans, spring wheat, and winter wheat.

**Table 1. Methods of risk management strategies, South Dakota, 2005/06**

	Corn	Soybeans	Spring Wheat	Winter Wheat
No. of responding elevators	75	52	65	52
Volume of grain handled (mil bu)	128.3	34.4	38.1	23.6
<b>No of elevators w/ strategies</b>				
1) Commodity futures	99%	96%	95%	98%
2) Forward sale contracts	48%	62%	37%	46%
3) Other	2%	4%	3%	0%
<b>Volume of grain under strategies</b>				
1) Commodity futures	91%	83%	92%	95%
2) Forward sale contracts	9%	17%	8%	5%
3) Other	0%	0%	0%	0%

### Pressing issues

Surveyed elevators were asked to list the most pressing issues affecting their business regarding transportation, grain quality and grading, labor, storage, and capital. Their answers revealed generally similar concerns throughout South Dakota regarding transportation and quality and grading, but different priorities regarding labor availability, storage space, and access to capital (Table 2). In the area of transportation, the availability of rail service and cars was considered the number one pressing problem. Regarding quality and grading of grains, the availability of quick and reliable sampling and testing methods, tools and skilled personnel were the dominant problems throughout the state. Shortage of skilled labor, especially during harvest time, was reported to be a prominent problem for elevators located west of the Missouri River. Elevators in the North Central region reported problems in finding storage space and access to capital for operation expansion.

**Table 2. Pressing issues with grain elevators business, South Dakota, 2008**

<b>Transportation</b>	
Availability of rail service/cars	58%
Transportation/fuel cost	36%
High freight cost	26%
<b>Quality and Grading</b>	
Sample & test inconsistencies	49%
Discount issues	19%
Microtoxines/Aflatoxin	16%
<b>Other Problems</b>	
Labor availability	29%
Storage space	25%
Access to capital	22%

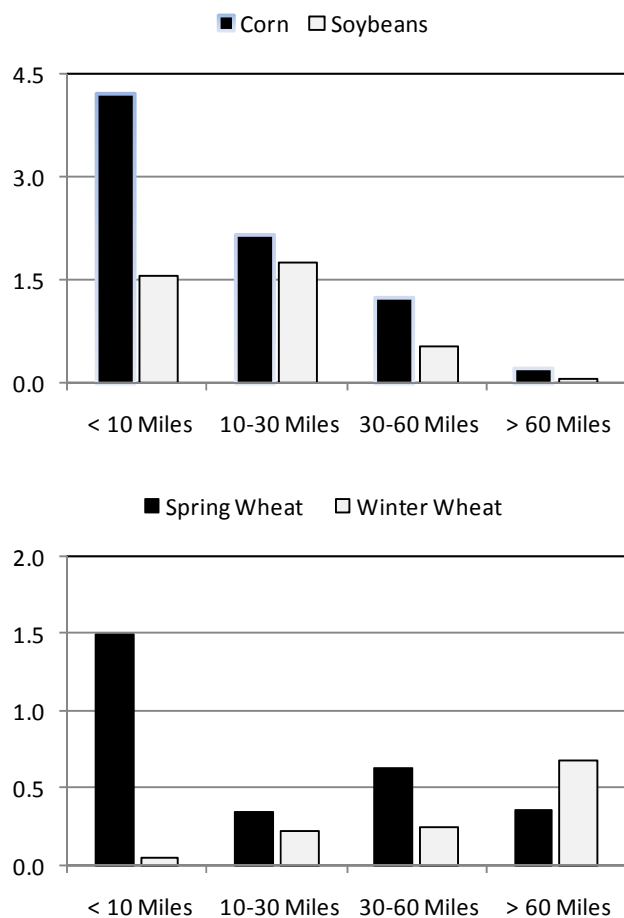
### Ethanol impact

The rapid expansion of ethanol production in South Dakota raised a number of questions concerning the impact of ethanol on South Dakota's grain handling industry. How do ethanol plants impact country elevators volume of corn especially for those located close to an ethanol plant? Do ethanol plants compete with country elevators or complement country elevators' corn business? Answers to these questions will depend on many factors including: size of the elevator, availability of rail service to the elevator, the size of a rail car loading facility at the elevator, corn production density in the area, distance of the elevator from ethanol plants, and the size of closest ethanol plant.

Information on the quantity of different crops handled by elevators, elevators capacity, rail service, and rail loading facility capacity combined with driving distance to the nearest ethanol plant does provide some insight. South Dakota elevators located close to an ethanol plant, on average, have higher capacities, are more likely to be on a rail line, and have larger loading facilities. For the marketing year 2005/06, the quantity of different grains handled by the elevators located at various driving distances (from the nearest ethanol plant) is shown in Figure 1. The average quantity of corn handled by elevators decreased as the driving distance to the nearest ethanol plant increased. This spatial pattern was unique for corn. In the case of

soybeans, the average quantity handled per elevator was highest for elevators located at 10-30 miles of driving distance from the nearest ethanol plant. In the case of spring wheat and winter wheat, there was no consistent spatial pattern.

**Figure 1. Average quantity of grains handled by elevators in relation to distance to ethanol plants, South Dakota, 2005/06 (mil.bu.)**



The relationship between 1) distances to the nearest ethanol plant, 2) size of rail loading facilities and 3) grain storage capacity to the quantity of grains handled by elevators was analyzed using spearman correlation. Both corn and soybeans were negatively correlated with the distance to the nearest ethanol plant, and positively correlated with the size of rail car loading facility and the grain storage capacity, indicating that elevators located closer to an ethanol plant handle more corn as well as soybeans. Spring wheat and winter wheat were positively correlated with the distance indicating that elevators located

further away from ethanol plants handle more wheat. This is not unexpected as ethanol plants are located in corn growing areas. Spring wheat and winter wheat were both positively correlated with the rail and the capacity confirming that elevators with a larger capacity and a larger rail cars loading facility handle more wheat.

These data provide an indication that, in South Dakota, there is perhaps a complementary relationship between the ethanol plants and the corn handling elevators. At a minimum, one can conclude that the establishment of ethanol plants did not adversely impact the quantity of corn handled by elevators located near ethanol plants. These finding are contrary to those reported by Dooley for Indiana, and Yu and Hart for Iowa.

### Summary

In conclusion, elevator managers' education and experience levels have improved throughout South Dakota. Most elevators in the state have access to an electronic grain marketing network. Marketing information in print media is still important for a majority of elevators. In order to understand commodity markets better, more managers and employees are receiving training in commodity futures. As expected, risk management strategies are designed and implemented by boards/headquarters in the case of coop and corporate-owned elevators. Small and independently owned elevators depend more on elevator managers to plan and execute risk management strategies.

Country elevators throughout South Dakota have reported availability of rail cars and inconsistencies in quality and grading of grain to be their most pressing issues. In addition, the availability of labor, storage space, and access to capital have been identified as major problems in some parts of the state. The average quantity of corn handled by the elevators consistently decreases with an increase in the driving distance from the nearest ethanol plant. In contrast to findings for Indiana and Iowa, ethanol plants in South Dakota did not adversely affect the quantity of corn handled by country elevators located close to the ethanol plants.

**References**

Dooley, Frank. 2006. "The effect of Ethanol on Grain Transportation and Storage" Purdue University Extension publication on Bio Energy ID-329. <http://www.ces.purdue.edu/extmedia/ID/ID-329.pdf>. Accessed on September 10, 2009.

Qasmi, Bashir, Yonas Hamda and Scott Fausti. "Grain Marketing Patters in South Dakota: Methods of Purchase, Sale, Grain destinations, Modes of Transportation and Ethanol Impact." South Dakota State University. Economics Research Report. Forthcoming.

Yu, Tun-Hsiang (Edward) and Chad Hart. 2009 "Impact of Biofuel Industry Expansion on Grain Utilization and Distribution: Preliminary Results of Iowa Grain and Biofuel Survey." Selected paper prepared for presentation at the Southern Agricultural Economics Association Annual Meeting, Atlanta, Georgia. January 31- February 3, 2009.

\*\*\*\*\*  
**ECONOMICS COMMENTATOR**  
\*\*\*\*\*

Department of Economics  
South Dakota State University  
Box 504 Scobey Hall  
Brookings, SD 57007-0895  
Phone: 605-688-4141  
Fax: 605-688-6386  
E-Mail: Penny\_Stover@sdstate.edu  
120 copies of this newsletter were produced at a cost of less than \$100

**SOUTH DAKOTA STATE UNIVERSITY**  
Economics Department  
Box 504  
Brookings, SD 57007-0895  
Change Service Requested

