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Grain Elevator Industry Revisited

by

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Introduction

Information on grain movement through country elevators and destinations are essential for evaluating and improving the operation of the grain marketing system. A grain marketing patterns study for South Dakota was completed in 1997 (Qasmi and McDaniel). Since then, the grain handling industry has undergone a substantial change in the United States as well as in South Dakota.

Ethanol production in the U.S. increased from 1.7 billion gallons in 2001 to 6.5 billion gallons in 2007. It is projected to reach 11.9 billion gallons by crop year 2010-11 (FAPRI, p83). Presently more than 98% of all ethanol in the U.S. is produced from corn. During crop year 2007-08, corn used for ethanol production was estimated to be 24.4% and 68.7% of domestic disappearance of corn in the United States and in South Dakota, respectively (Qasmi et al).

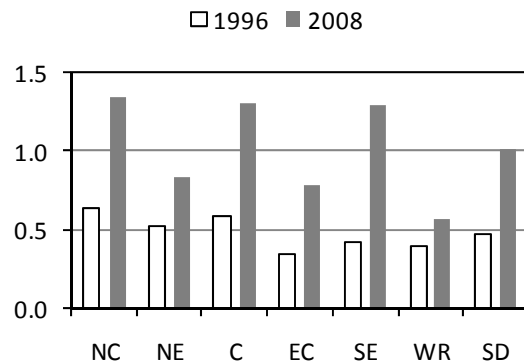
We collected primary data for this research through a mail survey of country grain elevator operators in South Dakota using a variant of the method proposed by Salant and Dillman (1994). The survey sought information on grain handled during the crop years 2004-05 and 2005-06 and was completed during 2007 and 2008. The responses in completed surveys were tabulated and analyzed by region. To arrive at the total quantity handled by all elevators in South Dakota, the quantity of the grain handled by the non-responding elevators were estimated by assuming that grain mix and capacity utilization for these elevators are similar to the responding elevators in the region. The results of the study will be reported in a forthcoming Research Report on changes in grain marketing patterns

and impacts of the dramatic increase in ethanol production. This article presents main findings related to: 1) changes in the grain handling industry and 2) changes in destinations and buyers of South Dakota grain. Impacts of increasing corn based ethanol production on the grain marketing patterns will be discussed in an upcoming issue of the Economic Commentator.

Industry Changes

The grain handling industry in South Dakota has been consolidating over time leading to fewer and larger elevators. Between 1996 and 2008, the total number of operating grain elevators in the state decreased from 275 to 225, a decrease of 18%, while average storage capacity increased from 0.47 to 1.02 million bushels, an increase of 134% (Figure 1). Average storage capacity increases were relatively large in the North Central, Central and Southeast regions.

Figure 1. Average storage capacity (mil. bu.)



During crop year 2005-06, South Dakota grain elevators handled 248, 120, 63, and 56 million bushels of corn, soybeans, spring wheat, and winter wheat, respectively (Table 1). North Central, Northeast, Central and Southeast regions reported handling more corn during crop year 05-06 compared to 94-95. With the exception of the West River region, all regions reported handling more soybeans during the year 05-06 compared to the year 94-95. Except in the North Central region, elevators reported handling more spring wheat during the year 05-06 compared to the year 94-95. Elevators in the Northeast region reported a substantial increase (200%) in the winter wheat handled during the year 05-06 compared to the year 94-95.

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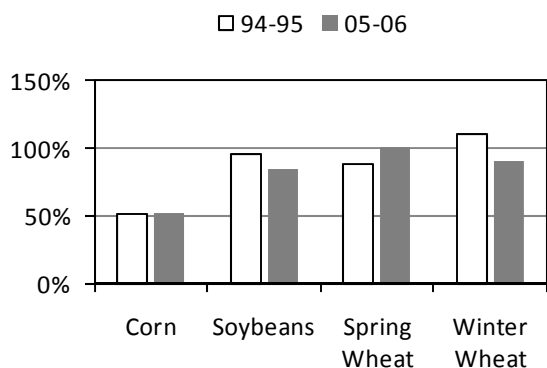
Table 1. Estimated Quantities of Grain Handled by South Dakota Elevators, 1994-95 and 2005-06

Region	Corn		Soybeans		Spring Wheat		Winter Wheat	
	94-95	05-06	94-95	05-06	94-95	05-06	94-95	05-06
North Central	25.9	48.6	13.4	27.1	26.0	18.8	6.4	5.1
Northeast	37.8	45.1	17.3	22.1	10.3	24.6	0.9	2.6
Central	8.9	29.3	1.5	8.9	4.2	6.1	13.0	11.3
East Central	50.4	41.5	19.5	32.8	0.5	1.2	1.4	0.7
Southeast	47.2	81.0	28.7	29.1	0.8	0.9	4.8	7.7
West River ¹	4.3	2.6	0.3	0.2	6.5	11.6	23.6	28.5
South Dakota	174.6	248.0	80.6	120.1	48.2	63.2	50.2	55.8

¹Includes Northwest, West Central, Southwest, and South Central regions.

Shares of grain handled by South Dakota elevators during the year 05-06 as a percent of the total grain available in the state are reported in figure 2. Farm level storage and inshipments may explain some of the disparity in shares through time. Compared with year 94-95, the elevators' market share in the year 05-06 increased for spring wheat, decreased for winter wheat and soybeans, and stayed unchanged for corn. On farm feed use likely accounts for some of the remaining share of corn not handled by grain elevators. Dooley (2006) for Indiana and Yu and Hart (2009) for Iowa estimated elevators market share for corn would decrease as more corn would be hauled by trucks, bypassing grain elevators.

Figure 2. Market Share of Elevators



Destination and buyer types

Figure 3 shows changes in types of buyers for selected grains. The three most important destinations for South Dakota corn in the year 05-06 were local destinations within 30 miles at 54%, Pacific North West terminals at 35%, and other in-state destinations at 10% of flows. Responding elevators reported selling 43% of their corn to ethanol producers in the year 05-06 compared to only 5% in the year 94-95. In contrast, during the year 05-06, corn sales by elevators to Terminals were reported at 35% (down from 51% in 94-95). South Dakota corn flows showed a slight shift away from Pacific North West terminals for export to in-state destinations for ethanol

production. These findings are in line with the projections by Wilson et al.

During the year 05-06, the two most important destinations for South Dakota soybeans were Pacific North West terminals (accounting for 45% in 05-06 and 39% 94-95), and the Sioux City area (15% in 05-06 and 26% in 94-95). During the year 05-06, South Dakota soybeans destined to in-state locations accounted for 22% of flows (up from 9% in 94-95), while soybeans destined for Minneapolis accounted for 10% (as in 94-95). During the year 05-06, the Terminals accounted for 52% of soybeans shipped by South Dakota elevators (slightly up from 49% in 95-96), and the processors claimed 41% of the soybeans shipped by elevators (up from 38% in 95-96).

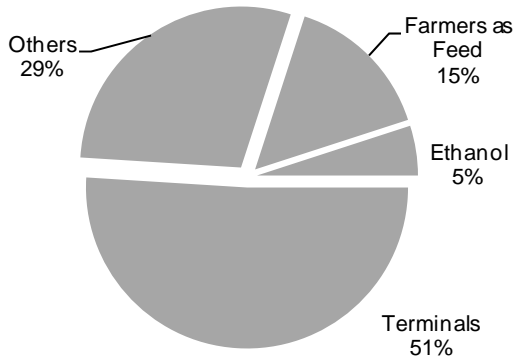
Minneapolis is the most important destination for spring wheat as well as winter wheat in the year 05-06 and 94-95. Spring wheat destined for Minneapolis accounted for 82% of flows in 05-06 and 88% in 94-95. The largest buyer of spring wheat, Minneapolis spot market and Minneapolis area grain dealers jointly claimed 75% of the spring wheat in 05-06 and 51% in 94-95. Similarly, winter wheat destined for Minneapolis accounted for 50% in 05-06 and 60% in 94-95. Minneapolis spot market and Minneapolis area grain dealers jointly took 40% of the winter wheat flows in 05-06 and 43% in 94-95. It seems that South Dakota grain elevators are relying less on selling wheat directly to processors.

Summary

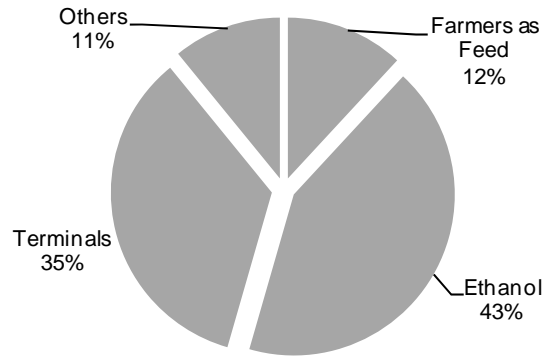
The increase in ethanol production in the United States has led to increased corn production and substantially increased the share of corn destined for ethanol plants. The results presented in this article are primarily from a survey of grain elevators in South Dakota completed in early 2008 and compared to results from a similar survey completed in 1996.

Figure 3. Buyers of South Dakota Grain in 1994-95 and 2005-06

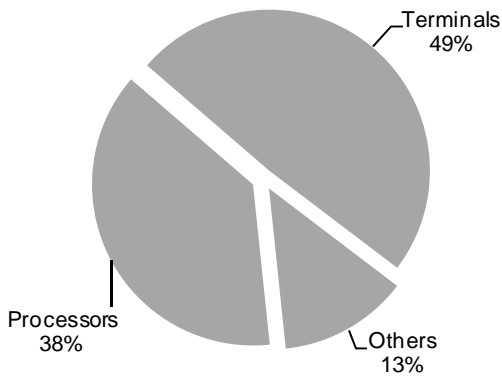
Corn Buyers in 94-95



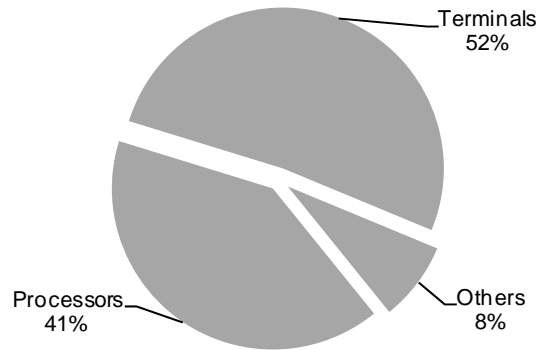
Corn Buyers in 05-06



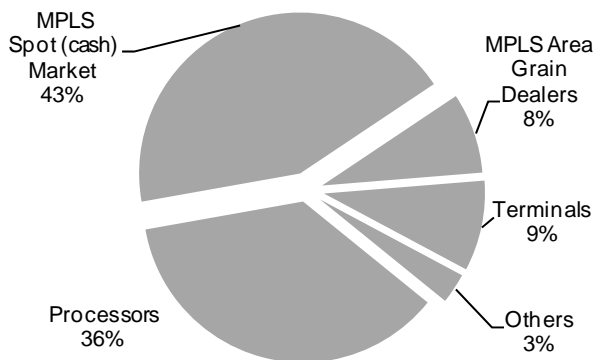
Soybeans Buyers in 94-95



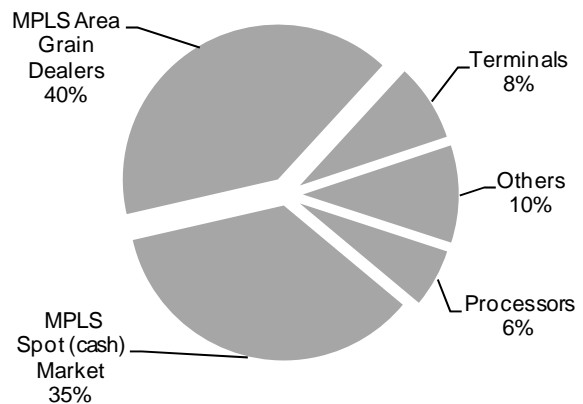
Soybeans Buyers in 05-06



Spring Wheat Buyers in 94-95



Spring Wheat Buyers in 05-06



South Dakota grain elevators handled greater quantities of wheat, corn, and soybeans in 2005-06 compared to the quantities handled in 1994-95. Contrary to the estimates projected by Dooley for

Indiana and Yu and Hart for Iowa, the elevators' market share for corn did not decrease in South Dakota. During the period, the elevators' market share increased for spring wheat, but decreased for winter wheat and soybeans.

South Dakota corn flows showed a slight shift away from terminals (for exports) to ethanol production (in South Dakota). A slightly larger share of soybeans handled by elevators is flowing to processors and terminals. South Dakota elevators are relying less on direct sales to processors, and more on Minneapolis area grain dealers and the Minneapolis spot market for spring wheat sales. Similarly they are relying less on direct sales to processors, and more on the Minneapolis spot market for winter wheat sales.

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