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N. Klein

South Dakota State University

C. Tongkasame

South Dakota State University

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The changing face of the swine industry in South Dakota: reasons for exit from the industry

N. Klein and C. Tongkasame
Department of Economics

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Problem Identification

It is not a surprise to anyone that the swine industry has changed dramatically over the past ten years. Nation-wide we have seen the exit of many small producers, and the increasing importance - even dominance - of the large "mega-producers". The swine industry in South Dakota has seen a parallel change. From 1992 to 1997, South Dakota lost 61% of its swine producers. We have seen a shift in importance of the small versus the large producers. In 1997, the smallest size operations, those with 1-499 head, comprised 83 percent of the total number of hog operations in the United States, but produced only 15 percent of the total hog inventory. During the same year, 4 percent of total hog operation were large producers with more than 2,000 head; they produced 55 percent of the total hog inventory. In South Dakota, operations with less than 500 head had 49.5 percent of the total inventory in 1992 and only 30 percent of the inventory in 1997, (SD-ASS).

Objectives

All livestock producers' experience cycles of high and low prices. The objective of this study was to determine what, besides the obvious reason of low prices, has caused South Dakota producers to leave the swine industry. Along with this, we hoped to identify the characteristics of producers who have exited for various different reasons, and then to identify which attributes would have the greatest impact on a producer's decision to re-enter the swine industry. If we can identify characteristics of producers who have left for different reasons, we may be better able to form policies and educational programs to help producers who want to be in the swine industry, as well as those who may want to re-enter.

Methodology

To do this, we surveyed 1380 former swine producers, as identified by South Dakota Ag Statistics Service. Only the surveys from producers who have either temporarily or permanently exited the industry were counted in the analysis. The survey included three sections: biographical information, information on exit from the industry, and "would you return?" The data in the first two sections was analyzed using an ordered probit model to identify the significance of several producer characteristics on reasons for exiting the swine industry using the equations of the following format: reason for exit = f (Age, Education, Gross farm sale, Diversity of operation).

The third section was analyzed using conjoint analysis to identify which marketing conditions might have the greatest impact on a producer's decision to re-enter the swine industry. Producers were given 14 different scenarios and asked to rate them on a scale of 0 to 10, with 0 indicating a situation in which the respondent would stay out of the business and 10 indicating a situation that would very likely entice the respondent to re-enter production. The 14 scenarios contained different combinations of two levels of the following 5 market conditions:

- Price (\$45/\$35)
- Networking (available/not available)
- Packer contract (available/not available)
- Regulations (more/fewer)
- Financing (available/not available)

Survey Results

Table 1 contains summary information about the survey respondents. The results were very similar to the average characteristics of all producers who exited the industry in South Dakota during the period. (SD-ASS) The

largest portion - 33% - of producers responding

Table 2 contains summary data for the reason why producers left the industry. The top two reasons are related to low prices. The third highest rated reason was the statement "mega-producers creating unfair marketing." The reasons tied for fourth and fifth had to do with loss of markets. Keep in mind that the Dakota Pork plant in Huron closed during this time period. Reasons that were very insignificant in producers' decisions to exit dealt with quality of hogs, quantity of information, and pressure from neighbors.

Each of the top reasons were regressed on producer characteristics using LIMDEP to determine what producers were most impacted by the different causes for exit. Those producers with no education beyond high school were more impacted by the low price than those without. Larger producers (those with gross farm sales >\$100,000) were less impacted by the loss of market outlet than smaller producers were. Producers who credited their exit to the mega-producers creating unfair marketing conditions had less education and had less diverse operations (greater than 41% of their gross farm sales from hogs & pigs). Interestingly enough, those producers that indicated that they participated in either cooperative extension programs or producer organizations were less likely to feel impacted by the mega-producers.

The conjoint analysis results indicated that the producers were heterogeneous in their preferences. More specifically, the group as a whole put more importance on price than individuals did. Although most of respondents preferred the higher price, they had very different preferences for prices and some of them felt much more strongly than others did. Interestingly, although loss of a market outlet was a significant reason for many producers' exit, most producers put relatively little weight on the ability to have either packer contracts or networking available to them as conditions that would draw them back into the industry.

Of the five "marketing conditions" that were tested, price was given the biggest weight. The second and third most important conditions to draw them back into the industry were the availability of cost share assistance or low interest loans to modernize facilities and/or

to the survey exited the industry in 1996. expand the operation and fewer regulations on their operations. The ability to participate in a packer contract to share the price risk was the fourth highest, and the least important of the five was the ability to participate in a producer network, initiated by either producer groups or input suppliers. Less than 25% of the respondents said that they would not re-enter the swine industry under any conditions.

The data were segmented to discern if producer characteristics were different according to their responses. The respondents who had higher gross farm sale and were more specialized in hogs placed a higher relative importance on price having an influence on their decision to return back to the business. The producers who were less specialized in hogs believed that financing was very important for them to come back into production. Financing was also important for the farmers who had slightly higher education and higher gross farm sale.

The older and the more highly educated producers preferred more regulations. The farmers with the bigger farms and less diversity in farms had a higher preference for fewer regulations. The farmers who had higher gross farm sales would prefer to have packer contracts available, but not networking. The farmers who had less diversity in their farms preferred an availability of both packer contracts and networking.

Policy Implications

When debating proposals to help swine producers and the swine industry in the state, policy makers and industry leaders should be aware of what types of producers would be impacted by different types of policies. For example, policies to increase availability of financing would have more impact on larger, more diverse producers.

Likewise, policies, which are aimed at restricting expansion of large producers, would be more likely to draw older, smaller, and more diversified producers back into the industry. And, finally, policies to make networking more available would likely have more influence on smaller, more specialized producers. Further details on the study can be found in "The Exit of

TABLE 1. RESPONDENT
CHARACTERISTICS
(Percent of Respondents)

Age	%
<45	36.62
45-54	35.92
55-64	20.42
65+	7.04
Average	48.57
Range	29-79
Years of Education	%
<12	47.90
13-15	25.70
16+	26.40
Average	13.56
Range	8-19
Diversity (% of gross farm sales from pigs)	%
<25%	25.19
25-49%	53.44
50-74%	17.56
75-100%	3.82
Average	33%
Gross Farm Sales	%
<\$40,000	20.2
\$40,000 - 90,000	30.9
\$100,000+	48.9
Size of Operation (# of hogs)	%
0-100	14.79
101-300	21.83
301-550	26.76
551-1,000	17.61
1,000-5,000	19.01
Average	681.42

TABLE 2. WEIGHTED SCORE,
REASON FOR EXIT FROM THE
INDUSTRY

Highest ranked reasons (4=very important reason for exit)	
Low hog prices	3.59
Returns too low relative to labor and investment	3.38
Mega-producers creating unfair marketing	3.25
Loss of marketing outlets	2.80
Inability to find a competitive market for the hogs	2.80
Facility age and condition	2.78
High financial risk	2.78
Lowest ranked reasons (1 = very unimportant reason for exit)	
No heir to continue farm	2.28
Dislike raising hogs	2.21
Lack technical support to improve the operation	2.12
Lack of information	2.02
Quality of hogs being produced was not adequate	2.01
Pressure from neighbors	1.81

References

South Dakota Agricultural Statistics Service. South Dakota Agricultural Statistics 1998-1999. 59 (June, 1999).