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Appendix C

OPERATIONAL CHANGES AND MANAGEMENT ISSUES FOR OKLAHOMA MEAT PROCESSORS

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Abstract

The U.S. meat processing industry has seen several changes in the past decade: increased concentration among packers, advancements in ready-to-eat products and the technology used to provide those products, and stricter regulatory compliance (e.g. HACCP). Like most southern states, Oklahoma has several small meat processors that have gone through considerable operational and management changes to maintain their viability in the industry. A recent study examined the economic characteristics of Oklahoma's meat processors and compared the findings to those from a nearly identical study in 1983. Results suggest opportunities for applied research and extension programs for this area of agribusiness.

Introduction

All or nearly all land grant institutions in the Southern United States have increased their emphasis on agribusiness programs/centers/institutes in the past decade, emphasizing all aspects of food and fiber products marketing and management. With these changes has come an emphasis on applied research and extension programs related to beyond-the-farm-gate operations. This study provides a detailed view into one sector of Oklahoma agribusiness that is typical of virtually all southern states and a prime target for agribusiness management research and assistance programs through cooperative extension services.

Like all southern states, Oklahoma has historically had many smaller, localized meat processors. These processors have typically custom processed livestock for individuals and maintained some degree of wholesale and/or retail market sales.

However, meat processors nationwide have experienced a changing marketplace as consumer preferences have shifted from fresh meats to further processed (e.g. ready-to-eat) products. Additionally, increased concentration in the packing side of the meat business has become an important issue for market economists, policy analysts, and inputs providers.

Most recently, all meat processors were required to implement Hazard Analysis Critical Control Point (HACCP) programs to better regulate the safety and quality of their outputs. Even the smallest meat processors were required to have HACCP programs implemented by January 2000. As a result of these drastic industry shocks, the typically small southern processors have been faced with a serious management decision: condense business activities to focus on pure custom processing for individuals or expand into a variety of further processing activities to maintain a market presence.

A 1983 study by the Oklahoma Agricultural Experiment Station examined the economic characteristics of Oklahoma's meat processors, from small custom processors to larger federal-inspected businesses (Ward). The purpose of that study was to learn how industry trends impacted the variety of processing operations, management and marketing strategies, and costs for meat processors. Recently, a nearly identical study was performed to examine the impacts of continued industry concentration, the growing market for value-added meat products, and HACCP implementation on the state's meat processors. Virtually all aspects of operations were considered (e.g. type of operation, meat species processed, processing services offered, plant characteristics, employment, pay scales, asset values, gross sales, distribution area, etc.) for purposes of comparing the economic characteristics of existing meat processors with those in the state in 1983.

Data and Methods

A 5-page survey instrument was used to gather information on the activities of Oklahoma meat processors. A list of meat processors was obtained from combining resources of the Oklahoma Department of Agriculture's Meat Inspection Service and the

Oklahoma Department of Commerce. The survey was developed and distributed to 157 firms by the Oklahoma Food & Agricultural Products Center (Oklahoma State University) in July 2000.

The first mailing received 29 responses, slightly under 20% for a response rate. The second mailing of surveys went out immediately following the release of the Oklahoma-Texas Meat Processors Association (OTMPA) August newsletter, which included a request for assistance in this project from Oklahoma processors. A requested return date on the second mailing surveys was September 15, 2000. A final total of 47 completed surveys (30% response rate) were received following the second mailing, compared to 60 usable surveys (24% response rate) from the previous study.

As with the 1983 study, no attempt was made to survey non-responding processors. Therefore, care must be taken in expanding information from this report to the entire meat processing industry in Oklahoma. Not all questions were answered by responding establishments, thus discussions related to specific topics are based solely on responses received.

Survey Findings

The apparent decline in the number of establishments from 1983 (225 processors) to 2000 (157 processors) immediately suggests that the economic characteristics of the state's meat processors have likely changed over time. Also, many of the meat processing operations currently existing in the state are utilizing carcasses, cuts, and trimmings purchased from large packing plants as opposed to or in addition to performing their own slaughtering. This occurrence is a result of most small processors expanding into multiple industry categories – custom processors with wholesale and/or retail sales operations -- that require a consistent flow of inputs for contracted production beyond their standard slaughtering operations. In contrast, most respondents in the 1983 survey performed 100% of their business in one of the three (custom, wholesale, retail) sectors. For this reason, many of the comparisons between the two studies are in the

aggregate whereas Ward's 1984 report compared characteristics of each of these three sectors.

General Business Characteristics and Services

When asked to choose a category that best describes their operations, 65% percent of the respondents to the 2000 study identified themselves as custom slaughter and meat processor operations. Thirty-one percent claimed to be commercial meat processors, and 4% were commercial slaughter and meat processing operations. Taken all together, this exemplifies the expansion of small Oklahoma meat processors into various value-added processing activities to make use of existing equipment and generate sales beyond those available through local custom processing business. This fact is accentuated by the number of industry exits reported by the Oklahoma Meat Inspection Service over the 17 year span -- most of which were purely custom processing establishment.

Eighty-one percent of the 2000 survey respondents were state-inspected facilities, with marketing opportunities limited to in-state niches. On average, 62% of the income for these establishments came from beef and veal processing, 26% from pork, 10% from lamb/mutton, and 13% from other meats (e.g. venison, bison, etc.). However, as in the 1983 survey, roughly 90% of the respondents handled more than one type of meat.

Table 1 gives a comparison of the types of services offered by both 1983 and 2000 survey respondents. Comparisons are made in terms of respondent percentage for each of the two time periods because of the different numbers of responses. One very apparent difference between the two survey samples is the decline in lamb/mutton processing and poultry handling activities of plants over time. Fewer sheep are produced in Oklahoma, and with the development of large sheep and goat processing facilities in South Texas even fewer Oklahoma sheep are processed in-state. Likewise, fewer meat processors in Oklahoma handle poultry products other than purchasing pre-cut portions for generating value-added products (e.g. breaded breast filets, breaded strips, marinated/cured breasts, etc.).

In addition to slaughtering and processing services, 34% of the respondents indicated that their establishments operate a regular delivery route. These routes are for maintenance of wholesale and retail accounts by larger, more diversified processors. None of the responding solely-custom operations in Oklahoma deliver to customers. The average distance from the plant to the farthest customer was 113 miles for those maintaining delivery routes.

Physical Facilities and Economic Characteristics

Table 2 shows the age of the establishments responding to the 2000 survey. Of the 44 plants providing information to this question, about 20% (9) were built around 1970. Seventeen were built after 1973, and 18 were built before 1969. Thirty-one of the plants had gone through some sort of expansion and/or renovation since 1969, most during the past ten years due to changing business patterns (e.g. increased value-added processing) and/or regulatory requirements.

Slaughter capacities of responding plants are indicated in Table 3 for both the 1983 survey and the 2000 survey. With the closing of the Wilson Meats processing facility near the Oklahoma City stockyards, Oklahoma no longer has a beef slaughter facility that would be considered large by the industry. In fact, all Oklahoma beef slaughter facilities would be considered small by today's standards. The establishment of a Seaboard Farms hog slaughtering operation in Guymon has actually increase hog slaughtering in the state. Poultry processing occurs in Oklahoma at further processing plants, but virtually all poultry slaughter activities take place across the state line in Arkansas at facilities operated by Tyson, Simmons, George's, etc.

Table 4 compares the further processing capacities (beyond slaughter) of responding establishments from the two surveys. Because of economies of size and diversification into wholesale and retail marketing, there has been a shift towards larger processing capacities since 1983. It is not economically feasible for most small operations to maintain further processing services that have a limit of 1,000 pounds per

week. Also, the only growth Oklahoma's meat processing industry has seen in the past 10 years has been in the area of further processed meats companies, hence the increase in responding plants with processing capacities greater than 10,000 pounds per week.

Renovations and expansions have allowed some operations to expand their square footage over time, but a comparison of respondents from the two surveys shows little difference in the size of facilities (Table 5). Roughly one-third of all the 2000 survey respondents are in buildings with 1,000-3,000 square feet of processing space, again representative of the relatively small establishments that make up Oklahoma's meat processing industry.

Increased automation and a smaller pool of capable, dependable labor have resulted in an extremely skewed division of establishments by employment status (Table 6). Since 1983, the mass exodus of meat processors in small market areas and innovative technology have changed the face of Oklahoma's meat industry. Fewer employees may be needed to run these small operations. Additionally, many of the 5-employees-or-less firms in 2000 may be family-owned operations that are struggling to maintain their viability.

The possibility that these small-employment businesses are making use of new technology and automation is further bolstered by the differences in asset values of plants between the two time periods (Table 7). Even after accounting for inflation and the differences in asset class breakdowns by the two surveys, it is apparent that the asset values of the 2000 respondents exceeded those of the 1983 respondents. Reasons for this difference may include the purchase of new or refurbished stainless steel processing equipment, the expansions/renovations made to facilities, and the fact that some of the plants in the 2000 survey were built after 1983 and therefore have higher salvage values.

It is somewhat disturbing to see that the breakdown of establishments by gross sales class shows little difference between the two surveys (Table 8). One would hope that plants with higher asset values could generate more sales to provide an adequate rate

of return on those assets. However, roughly 83% of respondents in both studies had less than \$1,000,000 in annual gross sales – even without accounting for the different values of money over time. While more detailed financial information was not retrieved from these surveys, the net returns from operations may be less for 2000 respondents than 1983 respondents.

Cost Management

With the competitive nature of the meat industry, cost management plays an important role in determining the short- and long-term profitability of processing establishments. The cyclical nature of livestock prices, fluctuating utility costs, and the variety of products provided by most meat processing plants should necessitate regular cost reviews and allocations. Table 9 compares the frequency of cost computations by responding processors from the two time periods. Oddly enough, while a larger percentage of the 2000 respondents compute costs on a daily basis compared to 1983's respondents, there is also a larger percentage that have no set schedule for reviewing costs.

The development of computer technology since 1983, especially advances in the hardware needed to handle large spreadsheet models of business activities, have allowed firms to quickly and efficiently examine the profitability of each day's operations. Also, since the inception of HACCP for all meat processors, thorough record-keeping of each day's production activities is required. One would expect a smaller distribution of cost computation schedules for 2000 respondents in light of these advances, primarily centered around a daily or weekly schedule.

Table 10 compares the fringe benefits added to wage rates for both surveys. Not surprisingly, there is very little difference between the findings from 1983 and 2000. Almost 80% of all respondents paid for 14% or less in fringe benefits for their employees.

Industry Concerns

Responding processors provided information on their business concerns from a list provided in the questionnaire (see Table 11). The results from the 2000 survey indicated a few changes in the importance of concerns from the 1983 findings. In 1983, 5 of the top 6 most important concerns were related to costs: labor; energy, water, and sewage; insurance; repairs and maintenance; and high interest rates. Those same cost concerns remained in the top 7 concerns for 2000, but a surprising difference was the increased concern over availability of competent and reliable labor. This was far and away the greatest concern of processors in 2000, probably due in large part to the other higher-wage employment opportunities resulting from a growing economy. As competition stiffens from large national processors, the need to keep costs low have hindered the industry's ability to find competent employees willing to work for a lower wage than they could find elsewhere.

The only two relatively large declines in importance between the 1983 survey and the 200 survey were related to declining custom business and declining retail business. The concern over custom business dropped from 5th to 9th in the rankings, possibly due to the acceptance of the long-term decrease in overall custom processing demand. For many consumers it is cheaper to simply buy meat occasionally at a grocery store than keeping a large amount of meat in a freezer at home. Additionally, fewer people raise their own beef or buy live animals to be processed in a custom manner.

Declining retail business ranked 11th out of 20 in the 1983 survey, but dropped to 17th in the 2000 survey. As more small processors have moved into some level of retail operation since the 1983 survey, this is somewhat unexpected. Part of the drop could be due to the increased concerns related to inspection and record-keeping. However, because many of the state-inspected establishments operate their retail operations in a small geographic area, they may realize the control they have in their small region and the factors that hinder their ability to expand retail operations.

Costs continued to be crucial concerns to Oklahoma meat processors in 2000. Those costs related to repairs and maintenance outweighed labor costs, possibly due to the increased maintenance costs associated with product assessment and measurement equipment associated with HACCP. All costs moved very little in terms of importance rankings, remaining in the top 8 concerns in 2000 as in 1983.

Summary and Conclusions

The comparison of two survey samples from two time periods has provided an interesting peek into Oklahoma's meat processing sector. In many ways, the industry has not changed over time: (1) slaughter capacities have remained small because no large beef slaughter plants have been built and only one large pork slaughter plant has come into the state, (2) few plants employ over 20 people, and (3) the costs of keeping a plant operating are the main concerns of processors. However, some differences have become apparent over time: (1) establishments have higher asset values due to recent buildings/expansions/renovations, (2) respondents to the 2000 survey on average had much greater further processing capacity than those in 1983, and (3) finding competent and reliable labor is harder now than it was in 1983.

The fact that regularity of cost computations and gross annual sales by survey respondents has changed little over the years is disturbing, especially in light of the increased asset values of firms and the availability of user-friendly computer programs to track activities. When asked of their plans for the next 5 years, 7 of the 47 responding to the 2000 survey indicated a desire to sell their businesses. Willingness and ability to change with the industry were cited as reasons for wanting to sell the businesses.

The apparent slow adaptation to change suggests that Oklahoma's meat processors, like most small southern meat processors, are a prime audience for targeted extension programs related to agribusiness management -- specifically programs that stress cost allocations and promote the use of computer technology. Additionally, many of the responding processors indicated an interest in assistance with examining the

feasibility of new value-added processing enterprises that could be incorporated in their existing operations. Such opportunities for applied agribusiness research may serve as undergraduate class projects and/or fodder for graduate theses.

References

Ward, C.E. "Economic Characteristics of Oklahoma's Meat Processing Industry."

Oklahoma Agricultural Experiment Station Research Report P-862, Oklahoma

State University, 1984.

Table 1: Slaughtering and processing services provided by meat processors in Oklahoma, by species.

Service	Percent of Processors, 2000			
	Beef	Pork	Lamb	Poultry
Slaughter	67	61	48	0
Cut, wrap, and freeze	70	65	50	13
Mechanically tenderize	72	46	20	4
Season fresh sausage	22	72	15	0
Cure and smoke	15	59	7	4
Make smoked and cured sausages	17	28	4	0
Make luncheon meats	7	7	2	2
Make portion-control products	48	41	11	4
Service	Percent of Processors, 1983			
	Beef	Pork	Lamb	Poultry
Slaughter	71	77	100	0
Cut, wrap, and freeze	82	90	100	67
Mechanically tenderize	73	31	27	0
Season fresh sausage	9	85	5	0
Cure and smoke	9	48	5	50
Make smoked and cured sausages	16	19	5	0
Make luncheon meats	9	8	9	0
Make portion-control products	50	23	0	0

Table 2: Distribution of years when Oklahoma meat processing plants were built or were last expanded or renovated from 2000 survey respondents.

Years	Number of Processors	
	Plants built	Expanded or renovated plants
After 1998	0	9
1994-98	5	8
1989-93	1	7
1984-88	3	2
1979-93	3	3
1974-78	5	1
1969-73	9	1
1964-68	4	0
1954-63	4	1
1944-53	5	0
1934-43	3	0
Before 1934	2	0
Total	44	32

Table 3: Weekly slaughter capacity of Oklahoma meat processors, by species.

Slaughter Capacity (Head per week)	Percent of Processors, 2000		
	Cattle	Hogs	Sheep and Lambs
Less than 10	13	14	55
10 - 19	35	21	27
20 - 29	23	25	0
30 - 39	10	14	9
40 - 49	13	7	0
50 - 74	6	7	9
75 or more	0	11	0

Slaughter Capacity (Head per week)	Percent of Processors, 1983		
	Cattle	Hogs	Sheep and Lambs
Less than 10	11	34	58
10 - 19	11	31	25
20 - 29	25	14	8
30 - 39	17	3	8
40 - 49	11	7	0
50 - 74	17	0	0
75 or more	8	10	0

Table 4: Weekly processing capacity of Oklahoma meat processors.

Processing Capacity - cut, wrap, freeze, cure (Pounds per week)	Percent of Processors, 1983	Percent of Processors, 2000
Less than 1,000	14	0
1,000 - 2,999	14	7
3,000 - 5,999	18	11
6,000 - 9,999	14	18
10,000 - 14,999	14	36
15,000 - 24,999	10	18
25,000 or more	16	11

Table 5: Facility size of Oklahoma meat processor survey respondents, 1983 and 2000.

Square Feet	Percent of Processors	
	1983	2000
Less than 1,000	12.5	9
1,000 - 2,999	28.6	35
3,000 - 4,999	25	21
5,000 - 9,999	21.4	16
10,000 - 14,999	5	9
15000 or more	7	10

Table 6: Employment status of Oklahoma meat processor survey respondents, 1983 and 2000.

Number Employed	Percent of Processors	
	1983	2000
Less than 5	23.6	81
5 - 9	36.4	11.8
10 - 14	21.8	7.2
15 - 19	7	3.3
20 - 29	5	4.9
30 or more	5	4.5

Table 7: Asset values of firms responding to Oklahoma meat processor surveys, 1983 and 2000.

Asset Class (thousand dollars)	Percent of Processors	
	1983	2000
Under 100	42.1	7
100 - 199	22.8	28
200 - 399	NA ^a	28
400 - 599	NA ^a	12
600 - 1,099	NA ^a	12
1,100 - 1,599	NA ^a	2
1,600 - 2,599	NA ^a	2
2,600 - 3,599	NA ^a	2
3,600 - 5,599	NA ^a	0
5,600 or more	NA ^a	7

^a The 1983 study did not use the same asset class breakdown as the 2000 study. In the 1983 study, 15.8% of respondents had assets in the range of \$200-299 thousand, 8.8% were in the \$300-549 thousand range, 7% were in the \$550-799 thousand range, and 7% had more than \$800 thousand in assets.