



# ANALYSIS AND COMMENTS

Livestock Marketing Information Center

State Extension Services in Cooperation with USDA

Letter #14

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## STRUCTURAL CHANGE IN LIVESTOCK PROCESSING: A LOOK AT FEDERALLY INSPECTED PLANT NUMBERS

### Background

USDA's National Agricultural Statistics Service (NASS) Annual Slaughter report released in March provides information on the number of Federally Inspected (FI) and Other (or often referred to as commercial plants) livestock processing plants operating each year in the U.S. on a state basis.<sup>1</sup> The report includes the number of FI slaughter plants by species: cattle, calves, hogs, sheep, and goats. In addition, the number of head processed at FI slaughter plants on a state basis is also included in the report. This information is useful in evaluating short term and long term changes that have occurred in the processing industry on both a state and species level. In conjunction, the changes observed in the processing plant data provide further insight into structural changes within each of the outlined livestock industries.

### Trends in Livestock Processing

According to USDA-NASS, as of January 1, 2005 there were a total of 2,941 slaughter plants operating in the U.S. Of this total, 825 were classified as Federally Inspected (FI) plants with the remaining 2,116 plants listed as Other (i.e. commercial plants). On a share basis, FI plants accounted for 28 percent of the total number of slaughter plants. The number of processing plants that did not operate and/or exited the industry in 2004 totaled 153 plants. The largest year-to-year decline occurred within the non-FI category with a loss of 123 plants compared to a loss of 30 FI plants during 2004. Despite a five percent loss in the number of plants, the total number of livestock processed had a yearly increase.

When USDA-NASS began reporting the number of slaughter plants in 1990, there were a total of 4,549 slaughter plants in the U.S. During that fifteen-year period, USDA-NASS reported a yearly increase in the total number of livestock processing plants three times: 1) in 1996, the number of plants increased by 353; 2) in 1998, there were 186 new plants, and 3) in 2003, 26 new plants were reported, majority of which were commercial plants. Since 1990, the composition of slaughter plants has averaged 27 percent FI plants to 73 percent non-FI plants. The proportion of plants in each category has been fairly consistent over the reporting period. So, despite the consolidation within livestock processing, the proportion of FI to non-FI plants has remained the same.

Many states do not provide state inspection programs for meat and/or poultry processing plants. In such cases, USDA assumes the inspection of the plants located within these states.

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<sup>1</sup> The USDA-NASS Annual Slaughter report is compiled using publicly available data however due to certain federal privacy laws, some data may not be provided for a particular U.S. state.

Therefore, all plants located within these states are designated as FI plants and are eligible to sell products interstate.<sup>2</sup> As a result, many smaller or often considered non-traditional livestock production and/or processing states report a large number of FI processing plants each year. This designation of plants should be considered when reviewing the plant data on a state and species basis.

On a state basis, the number of FI plants operating in each state has fluctuated over the fifteen-year report period. For example, in 1990 the top five states with the greatest number of processing plants were: Iowa with 276 plants, followed by Pennsylvania at 267, Texas with 265, Missouri at 224, and Ohio at 220 plants. In 2005, Pennsylvania claimed the largest number of operating plants with 247, followed by Ohio with 151, Montana at 150, Iowa with 148 and Missouri with 132 plants. For the most part, the ten states with the greatest number of processing plants has remained fairly consistent over the time period, but the ranking among the states has varied.

### **Cattle and Calves**

In 2004, USDA-NASS reported 689 FI processing plants that slaughtered at least one head of cattle operating in the U.S. That figure was unchanged from 2003 as the number of newly opened cattle processing plants compensated for the number of plants that exited the industry. This was the smallest number of cattle processing plants reported in the U.S. since USDA-NASS began reporting this data in 1990. In 2004, the 689 plants processed 32 million head, drastically less than prior years in response to the smaller supply of slaughter cattle in the U.S. cattle market.

Since the report began in 1990, the number of FI plants has declined dramatically as the cattle/beef industry as a whole has consolidated. In 1990, there were 1105 beef processing plants in the U.S. with annual cattle slaughter of 32.3 million head. By 1995 the number of U.S. cattle processing plants declined to 836 plants, a loss of 269 plants in five years. However, despite the nearly 25 percent decline in cattle processing facilities, these plants slaughtered 34.9 million head in 1995, an increase of 2.6 thousand head or 8 percent compared to 1990. By 2000, the number of plants continued to decline in number to a total of 738 plants but processed 35.6 million head, about 2 percent more cattle.

On a state basis, in 1990 the top five states in terms of FI beef processing plant numbers were Pennsylvania at 187 plants followed by Missouri with 89 plants, New York at 74 plants, Nebraska and Texas each with 47 plants. As of January 1, 2005, Pennsylvania continued to report the largest number of beef processing plants with 92 plants followed by New York, Nebraska, Texas, and Michigan. Although Pennsylvania and New York are not considered cattle feeding areas, the large number of dairies supports many small FI plants that concentrate on cow and bull processing.

### **Hogs**

As reported by USDA-NASS, 664 FI plants reported having processed more than one hog in 2004. Compared to last year, there were two more plants processing hogs in the U.S. The number of plants processing hogs in 2004 was the second smallest number of plants reported since 1990, the smallest number reported being 2003's (662 plants reported). In 2004, the 667 plants processed a total of 101.7 million head of hogs, 614 thousand head more than the prior year and 3.2 million head more than in 2002.

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<sup>2</sup> The following states do not provide meat and/or poultry inspection programs: AL, AR, CA, CO, CT, FL, GA, HI, ID, KY, ME, MD, MA, MI, NE, NV, NH, NJ, NY, ND, OR, PA, RI, SD, TN, & WA. For further details see [http://www.fsis.usda.gov/regulations\\_and\\_policies/state\\_inspection\\_programs/index.asp](http://www.fsis.usda.gov/regulations_and_policies/state_inspection_programs/index.asp)

Improvements in hog/pork processing (i.e. reduction in carcass chill times, etc.) combined with an addition in the number of shifts operated per facility has aided the hog processing industry in handling the ever growing supply of live hogs in the U.S. despite long-term declines in the number of available facilities. In 1990, there were 1028 plants that processed at that time 82.7 million head of hogs. The number of plants dropped to 802 in 1995, while the number of hogs slaughtered grew to 94.2 million head. By 2000, the U.S. hog processing industry continued to consolidate as the number of plants operating was 721 with slaughter of nearly 96.4 million head. During the fifteen-year period (1990-2004), the number of U.S. hog plants has declined on average 3 percent each year, while the number of hogs processed each year since has increased on average 1.5 percent.

In 1990, the largest numbers of FI hog processing plants were located in the following states: Missouri (82 plants), New York (64 plants), Arkansas (46 plants), Michigan (43 plants), and Tennessee (42 plants). In 2004, the Pennsylvania reported having the largest number of plants processing hogs at 85 plants. The remaining top four states were: New York (35 plants), Illinois (25 plants), Minnesota, Nebraska and North Carolina (each with 25 plants). It should be noted that in 2004 Missouri did report a total state processing plant number, but did not provide specie specific plant data.

### **Sheep and Lambs**

Unlike the cattle and hog processing industries, the sheep and lamb processing industry has declined in both processing facilities and the number of animals processed per year. The simultaneous drop in both plants and numbers is in response to two key factors: 1) a continual decline in the U.S. sheep and lamb flock and 2) an increase in market share of Australian and New Zealand lamb imports in the U.S. market. In addition, the long-term trend in sheep and lamb slaughter has seen a shift towards commercial slaughter accounting for a larger proportion of total slaughter. This shift in slaughter has been mostly in response to recent growth in ethnic populations, which has created an alternative market for carcass lambs to meet religious demands and cultural tastes.

In 1990, there were 815 FI plants that reported having slaughtered at least one sheep or lamb that year. A peak total of 5.5 million head of sheep and lambs were processed that year. The number of processing plants has declined each year since with one exception in 1999, when 5 new plants were reported. By 2004, there were only 499 plants operating in the U.S., which accounted for 2.7 million head of sheep and lambs. There have only been two times in the reported series when there was a year-to-year increase in the number of head processed, 1991 (half a percent) and 2002 (one percent). Over the 15 year time period, on average the year-to-year decline in processing plants was slightly over 3 percent. During the same time frame, these plants reported an average 5 percent yearly decline in the number of head processed.

On a state basis, in 1990, Pennsylvania reported the largest number of FI sheep processing plants followed by New York, Missouri, Michigan and Minnesota. Many of the plants located in these states were smaller sized plants compared to those located in more traditional sheep producing regions of the U.S. By 2004, the state ranking remained the same as in 1990, however Minnesota fell out of the top five and was replaced by Texas.

### **Goats**

The U.S. meat goat industry has grown over the past five years in response to a growing ethnic population that favors goat meat (referred to as Chevon). Many U.S. livestock producers started to raise goats to provide product for the developing ethnic markets throughout the U.S.

The growth in the goat meat industry is evidenced in the USDA-NASS slaughter plant data, which began to include goats in 1998. In 1998, a total of 72 FI plants reported having processed at least one goat. These plants slaughtered nearly 130 thousand head in 1998. By

2004, there were 136 FI plants in the U.S. with total slaughter for that year at 280.5 thousand head. Over the seven-year period, the number of plants processing goats varied on a year-to-year basis. The inconsistency in the number of processing plants is not surprising given this a newly developed segment of the livestock meat sector that is heavily driven by a specialty market, where some processing plants may have switched between processing goats and sheep/lambs.

When USDA began to report meat goat data in 1998, the top five states with the most FI meat goat processing plants were Pennsylvania, New York, Missouri, Florida, and Delaware-Maryland. By 2004, Pennsylvania remained the leading state followed by Missouri, Texas, Delaware-Maryland, and Illinois.

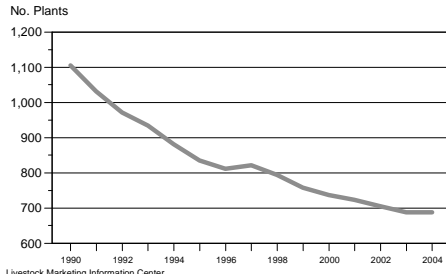
### **Comments and Conclusions**

In evaluating the changes in the number and location of plants operating in a given year, short-term and long-term structural shifts in livestock production can be observed. As the cattle feeding industry has become more centralized in the Central and Southern Plains region, there has been an increase in the number of FI beef processing plants constructed in these regions. A comparable pattern in the hog processing sector in that as shifts in major hog producing regions (i.e. North Carolina) have occurred, similar shifts transpired in processing plants locations.

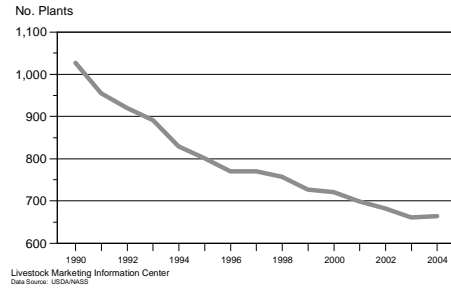
As evidenced in the data, the U.S. meat processing industry has become more consolidated in terms of the number of processing plants over time in response to increases in plant operating and fixed costs, greater safety regulations and restrictions, and technological advancements. Consolidation within the livestock processing industry across all species will continue as companies aim to improve operating margins by reducing overall costs and further advancements in production efficiency.

Looking ahead, 2005 could be an intriguing year for the U.S. meat processing industry. Continued uncertainty surrounding the re-opening of the U.S. and Canadian border to live cattle and the resumption of beef exports to Asian markets may result in additional reduced and/or suspended shifts at major beef processing plants during 2005. In addition, further delays in resuming live cattle trade with Canada could result in the closure of several struggling beef processing plants. Plant shutdowns have already occurred this year in the sheep industry with the closure of Ranchers' Lamb of Texas, Inc. in Texas in response to a decline in the supply of slaughter lambs. A new large hog processing facility is scheduled to open in Missouri during 2005, which could put some older hog plants at-risk.

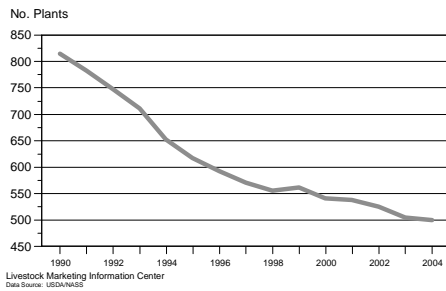
**TOTAL FI CATTLE SLAUGHTER PLANTS**  
U.S., Annual



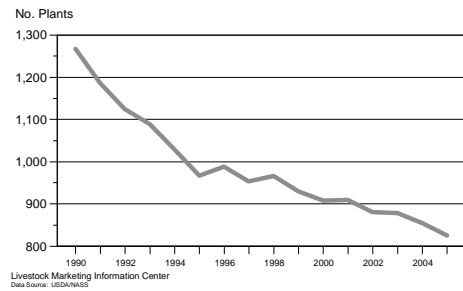
**TOTAL FI HOG SLAUGHTER PLANTS**  
U.S., Annual



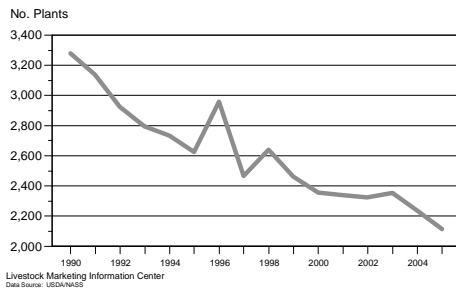
**TOTAL FI SHEEP & LAMB SLAUGHTER PLANTS**  
U.S., Annual



**TOTAL FI SLAUGHTER PLANTS**  
U.S., Annual



**TOTAL NON-FI SLAUGHTER PLANTS**  
U.S., Annual



**TOTAL SLAUGHTER PLANTS**  
U.S., Annual

