



Captive Supply Trends since Mandatory Price Reporting

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Captive supplies in fed cattle procurement have been a major concern and divisive issue in the beef industry for fifteen years. Visit <http://osuxtra.okstate.edu/dept/econ/mktingoutlook.shtml> for more information on captive supplies and marketing and pricing of fed cattle.

Issues related to captive supplies were among the reasons many producers supported passage of the Livestock Mandatory Reporting Act, which requires packers to report considerable detail regarding their livestock purchases to the Agricultural Marketing Service (AMS). Alleged sweetheart deals offered only to selected large feedlots by large packers were thought to unfairly harm smaller cattle feeders. Limited data and information on how packers procured fed cattle were believed to hinder cattle feeders in price discovery. As a result, there was a push to move from voluntary to mandatory price reporting.

Implementation of the Livestock Mandatory Reporting Act began in April 2001. One effect of the Act was to create new data series on prices and quantities of fed cattle marketings, some of which pertain to captive supplies. This fact sheet presents information on captive supply quantities prior to and in the three years since mandatory price reporting (MPR) began. It answers, in part, the question of what has been learned about captive supplies from the new mandatory price reports. This is the first of two extension facts reporting information related to captive supplies since MPR began. This one deals with captive supply volume, the other with captive supply prices and impacts (F-598, *Captive Supply Price Relationships and Impacts*).

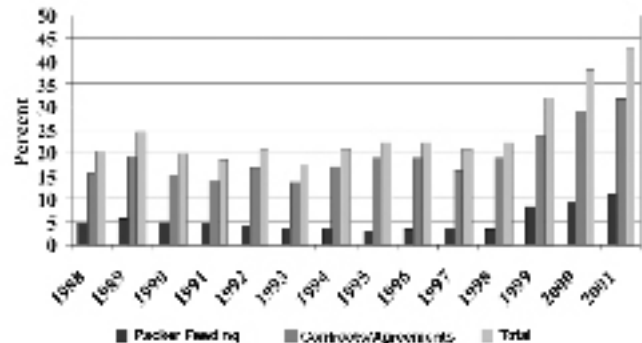
Captive Supplies before Mandatory Price Reporting

Captive supplies refer to slaughter livestock that are committed to a specific buyer (meatpacker) two weeks or more in advance of slaughter. The three most common types of captive supply methods include marketing/purchasing agreements, forward contracts, and packer feeding. A common element of the three types is that packers have a portion of their slaughter volume needs purchased from two weeks to several months prior to the livestock being slaughtered. These forward purchases enable meatpackers to plan cash market purchases and deliveries in coordination with purchases by captive supply methods. A key issue is whether captive supplies can also be used as leverage to pay lower prices for fed cattle purchased in the cash market.

Prior to the mandatory price reporting (MPR) legislation, official data on captive supplies came from the Grain Inspection, Packers and Stockyards Administration (GIPSA). GIPSA

began requiring packers to report their captive supplies by captive supply method and month in 1988. Reported annual average captive supplies for the four largest firms as reported to GIPSA are shown in Figure 1. Annual average captive supplies ranged from 17.5 to 24.9% of fed cattle slaughter for the four largest beefpacking firms between 1988 and 1998 (GIPSA 2002). Marketing agreements and forward contracts accounted for 13.7 to 19.3%; and packer feeding, 3.2 to 5.6% during that period. GIPSA reported higher percentages for the three most recent reporting years based on audits of packer records and clarification of definitions for reporting various captive supply arrangements. Total captive supplies for the four largest packers were 32.4 to 42.9% for 1999-2001. Marketing agreements and forward contracts increased to 24.0 to 32.0%, while packer feeding increased to 8.4 to 10.9% (GIPSA 2003). GIPSA cautions that the audited figures for 1999-2001 are not comparable to previous year figures.

Figure 1. Annual average captive supplies as a percent of steer and heifer slaughter by the four largest beefpackers from GIPSA data, 1988-2001.



Source: Grain Inspection, Packers and Stockyards Administration.

As Agricultural Marketing Service (AMS) reporters collected market price information for their voluntary market reports, they began collecting and reporting data on the non-cash-market shipment of fed cattle in 1994. This series was called "additional movement" and became a proxy for some people of the extent of captive supplies. However, while it included shipments of cattle that constitute captive supplies, it also included shipments of cattle priced by methods that may not constitute captive supplies, such as cattle priced on a grid but not part of a market-

ing agreement or contract. The annual average percentage of additional movement of fed cattle (as reported by AMS) began slightly below the annual average of captive supply cattle (as reported by GIPSA) for 1994. However, the percentage of additional movement cattle increased sharply. In 2000, the additional movement series averaged 41.7%, which was a few percentage points above the GIPSA captive supply percentage.

Captive supplies exhibited a modest seasonal pattern based on the monthly average data from GIPSA for the 1990-2001 period. Packer-fed slaughter was highest in July and lowest in April. Slaughter of marketing agreement and contracted cattle was highest in December and lowest in March. The seasonal pattern for total captive supplies most closely matches the pattern for its largest component (marketing agreements and forward contracts) but with some exceptions. Therefore, the high month in total, December, corresponds with the highest month for marketing agreement and contracted cattle slaughter. However, the lowest month for total captive supplies was November.

Captive Supplies after Mandatory Price Reporting

Mandatory price reports made available data on various methods of pricing fed cattle. Some of this data provides additional information on captive supplies. Information in this section is presented about negotiated pricing of fed cattle, formula pricing, forward contracting, and packer owned cattle.

Annual Averages – Table 1 (page 4) provides summary statistics for the various pricing methods for the three-year period April 2001 to April 2004, the first three years of mandatory price reporting. *Note that in this extension facts, year 2001 refers to April 2001 to March 2002, 2002 refers to April 2002 to March 2003, and 2003 refers to April 2003 to March 2004.* Figure 2 shows the percent of total figures for each type of marketing or procurement method for each of the three years.

Negotiated pricing on average accounted for 46.1% of fed cattle marketings over the three-year period. Negotiated pricing increased in absolute number of fed cattle each year, but not in percentage of total marketings. In the last year, 2003, negotiated pricing represented the majority of fed cattle marketings, 53.9% of the total. In 2003, AMS clarified how they reported some sales. This may have increased the number (and percentage) of negotiated trades.

Formula pricing averaged 43.3% of fed cattle marketings for the three-year period. This percentage varied more than any other type of marketing or procurement method. Formula pricing was the most used marketing or procurement method in 2001 and 2002. But in 2003, formula pricing declined sharply to 34.0% of total marketings. Note that in 2003, some sales previously reported as formula trades may have been redefined as negotiated trades. According to cattle feeders who responded to a 2002 survey in Iowa, Nebraska, Kansas, and Texas, most formula price arrangements are tied to the cash market, either a quoted market price or a plant average price (Schroeder et al.). A small percentage of fed cattle were formula priced with the reference market being either the wholesale beef market or the live cattle futures market.

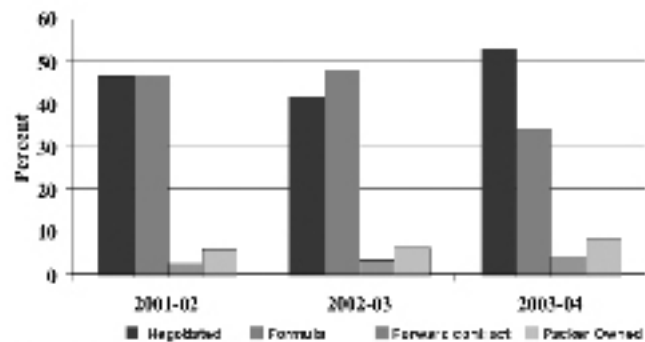
Forward contracting, which consists mostly of basis contracts between packers and cattle feeders, represented a small percentage of fed cattle marketings each year. Forward contracts represented 3.5% of total marketings for the three-years.

Packer ownership of livestock is one of the most discussed components of captive supplies and a frequent target for legislative reform (Ward). For the three-year period, packer owned fed

cattle accounted for 7.1% of total fed cattle marketings. This percentage was lower than reported from packer reports to GIPSA according to the GIPSA definition. Regardless of the definition used, packer ownership of fed cattle is relatively small both in absolute numbers of fed cattle and relative to total marketings. While packer ownership exceeds forward contracts, it trails formula pricing and negotiated pricing by a wide margin.

As can be seen in Figure 2, both forward contracting and packer owned fed cattle are relatively small in absolute numbers or as a percent of total marketings. It remains to be seen whether the increase in negotiated trades and reduction in formula priced trades that was evident in 2003 was market related or is an emerging trend.

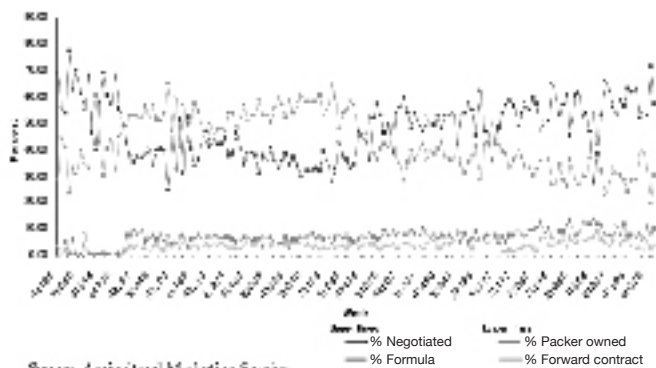
Figure 2. Annual average fed cattle purchases by beefpackers as a percent of total fed cattle purchases by procurement method since mandatory price reporting, April 2001 to April 2004.



Source: Agricultural Marketing Service

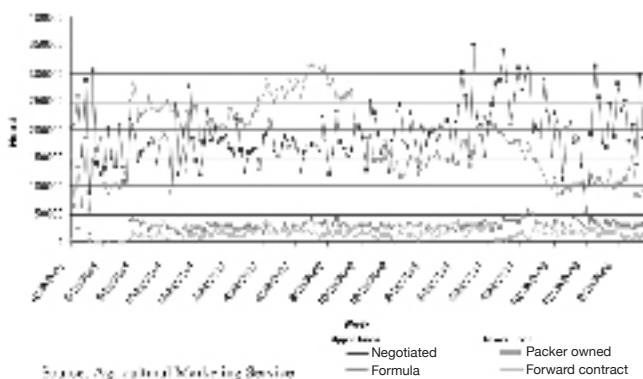
Weekly Dynamics – Figure 3 shows the percentage of negotiated trades, formula priced trades, forward contracts, and packer owned trades for each week of the three-year period since MPR began. On a weekly basis, the percentage of negotiated pricing was as low as 24.5% and as high as 76.9%. Generally, negotiated pricing can be interpreted as cash market pricing, though some grid base prices are determined by negotiation also. Negotiated pricing may be on either a live weight or a carcass weight basis. Formula pricing varied widely from week to week also, ranging from 22.1% to 64.8%. Most formula pricing is on a carcass weight basis. For the other two types of marketing or procurement methods, there was considerable week-to-week variation but the variation was around a much smaller magnitude. For forward contracts the range was 0.2% to 9.4%; and for packer owned cattle, 2.6% to 13.6% of total fed cattle procurement.

Figure 3. Weekly fed cattle trades by procurement method as a percent of total fed cattle purchases since mandatory price reporting, April 2001 to April 2004.



Source: Agricultural Marketing Service

Figure 4. Weekly fed cattle trades by procurement method since mandatory price reporting, April 2001 to April 2004.



The week-to-week variation in negotiated trades and formula priced trades is quite extensive and obvious, both on a percentage basis (Figure 3) and in absolute volume traded (Figure 4). Little definitive can be said about possible trends. At times over the past three years, formula pricing exceeded negotiated trades and at times the reverse occurred. There was some evidence of an upward trend during 2003 in the percentage of negotiated trades and a decline in percentage of formula priced trades. Recall that on average, the extent of negotiated pricing exceeded that for formula trading. The exact reason for the variation or apparent tradeoffs between these two pricing methods is not clear. It may be related to specific market conditions or periodic changes in marketing or procurement strategies by cattle feedlots or packers. However, without further analysis, the tradeoffs generally occur between negotiated pricing and formula pricing, and appear not to necessarily involve forward contracting or packer ownership of fed cattle.

Forward contracting was the least used pricing alternative over this three-year period. Little if any trend in the use of forward contracts was evident. Most forward contracts are basis contracts and are dependent on the expected cash minus futures market basis, supply-demand market conditions, and the willingness of both sides to contract and then take an appropriate position in the futures market.

Prior to MPR, there was no weekly reported data on the extent of packer ownership of fed cattle, only the annually reported figures by GIPSA, which were compiled and released well after the year in which they occurred. Thus, the MPR legislation is directly responsible for enabling this information to be available now. The extent of packer feeding was reasonably stable over the three-year period, ranging in most weeks between 5 and 10% of total marketings. The percentage or absolute volume of packer owned fed cattle appeared not to trend either upward or downward from both Figures 3 and 4, though on occasion in 2003, packer owned trades exceeded 10% of total volume traded. It is not clear whether this was in fact an emerging trend, a tradeoff with the decline in formula pricing in 2003, or perhaps a seasonally influenced phenomenon.

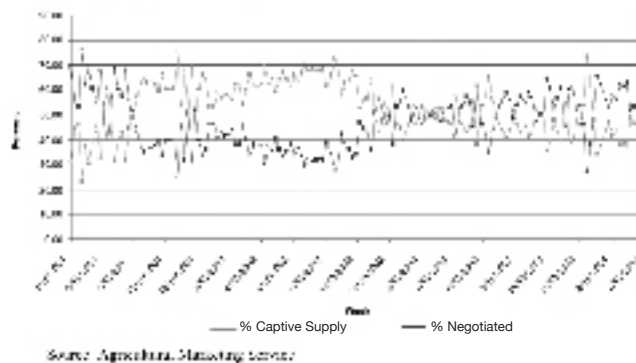
Estimating Captive Supplies – The GIPSA definition of captive supplies does not match the AMS reporting of procurement methods exactly. Thus, while MPR has generated some additional information, it is difficult to exactly match the AMS data with the GIPSA data. So what is the “true” extent of captive supplies? Some would argue that captive supplies constitutes the sum of the AMS data derived from MPR for formula pricing, forward contracting, and packer owned procurement by packers. For two of the three categories, forward contracting and

packer ownership of fed cattle, this argument is seemingly clear, though some forward contracts in theory could be consummated within two weeks of when cattle are harvested. However, nearly always, both types of marketing or procurement methods would be components of captive supplies.

For formula pricing, the argument is less clear. Most but an unknown percentage of formula priced trades are associated with supply contracts or marketing agreements. Many marketing agreements allow feeders to determine the delivery date for fed cattle, either alone or in conjunction with the participating packer, one-to-three weeks prior to cattle being slaughtered. However, in theory and to an unknown extent in practice, a formula priced arrangement could occur on any day for the same day delivery of cattle, thus clearly not meeting the GIPSA definition of captive supplies.

Here, for illustration and discussion purposes, it is assumed that all three of these types of procurement methods (formula priced transactions, forward contracts, and packer ownership of fed cattle) comprise captive supplies. Figure 5 shows the percentage of captive supplies, again the summation of formula, forward contract, and packer owned trades, vs. the percentage of negotiated trades for the three-year period since MPR. The trading patterns in Figure 5 resemble the patterns for the two major trading methods, formula trading and negotiated trading, in Figures 3 and 4. No clear trend is evident nor is there any clear explanation for the patterns of either without further analysis. So, while the level of captive supplies concerns some, there is no apparent upward trend in the percentage based on the first three years of MPR data.

Figure 5. Weekly estimate of captive supplies vs negotiated trades as a percent of weekly fed cattle procurement since mandatory price reporting, April 2001 to April 2004.



Assessment and Conclusions

Is there more information available on the volume of captive supplies since mandatory price reporting than before? A quick answer is yes. Certainly, the extent of captive supplies according to some definition can be tracked with weekly data over time. However, as was indicated above, the data do not present an exact picture of captive supplies. Most would likely conclude the new information is an improvement and insightful. Certainly, more data are available on a regular basis than before. Whether or not the additional information has been helpful for cattle feeders and producers in price discovery is not clear. Plus, many supporters of MPR may argue that MPR increased information in some areas, but the new information was less than expected.

In summary, mandatory price reporting has provided some information from weekly data on captive supplies that was not available previously. Plus, since data are reported weekly, the information is much more timely than waiting a year or two for

the monthly or annual reports by GIPSA. However, it needs repeating that the data on captive supplies using mandatory price reports does not match exactly the definition GIPSA has used for captive supplies. Thus, while there is more timely information, and to some extent better information, on captive supplies from mandatory price reports, caution must be exercised in using the AMS data to estimate captive supplies and the AMS data cannot be compared directly with that reported by GIPSA.

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Table 1. Three-Year Summary of Weekly Mandatory Price Reporting Volume by Marketing Method

| Marketing Method | Year* | Summary Statistics | | | | |
|------------------|-----------|--------------------|------------------|--------------------|---------|---------|
| | | Average | Percent of Total | Standard Deviation | Minimum | Maximum |
| Negotiated Price | 2001 | 174,520 | 43.9 | 46,763 | 87,069 | 303,729 |
| | 2002 | 180,602 | 40.9 | 31,075 | 119,128 | 250,299 |
| | 2003 | 220,019 | 53.9 | 62,821 | 49,409 | 350,698 |
| | 2001-2003 | 191,714 | 46.1 | 52,394 | 49,409 | 350,698 |
| Formula Price | 2001 | 185,275 | 46.7 | 61,018 | 55,741 | 280,297 |
| | 2002 | 216,887 | 49.1 | 67,077 | 115,134 | 313,981 |
| | 2003 | 139,020 | 34.0 | 39,332 | 83,051 | 221,371 |
| | 2001-2003 | 180,394 | 43.3 | 65,142 | 55,741 | 313,981 |
| Forward Contract | 2001 | 10,887 | 2.7 | 5,863 | 516 | 24,056 |
| | 2002 | 15,556 | 3.5 | 6,076 | 4,427 | 36,671 |
| | 2003 | 16,903 | 4.1 | 8,159 | 3,714 | 35,381 |
| | 2001-2003 | 14,667 | 3.5 | 7,233 | 516 | 36,671 |
| Packer Owned | 2001 | 26,470 | 6.7 | 6,721 | 13,450 | 39,320 |
| | 2002 | 28,308 | 6.4 | 5,910 | 12,955 | 42,630 |
| | 2003 | 32,599 | 8.0 | 7,634 | 18,274 | 55,171 |
| | 2001-2003 | 29,408 | 7.1 | 7,217 | 12,955 | 55,171 |
| Totals | 2001 | 397,152 | 100.0 | | | |
| | 2002 | 441,353 | 100.0 | | | |
| | 2003 | 408,541 | 100.0 | | | |
| | 2001-2003 | 416,183 | 100.0 | | | |

* Year 2001 refers to April 2001 to March 2002; 2002 refers to April 2002 to March 2003; and 2003 refers to April 2003 to March 2004.

Source: Agricultural Marketing Service, U.S. Department of Agriculture

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