



# Extent of Alternative Marketing Arrangements for Fed Cattle and Hogs

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So-called captive supplies in livestock procurement by packers have been a major concern and divisive issue in the beef and pork industries for more than 20 years. A previous Extension fact sheet, AGEC-598, *Captive Supply Trends Since Mandatory Price Reporting* (available at <http://pods.dasnr.okstate.edu/docushare/dsweb/View/Collection-236>) reviewed data for fed cattle, which became available following passage of the Livestock Mandatory Reporting Act. Since then, the phrase, "alternative marketing arrangements," has tended to replace the phrase "captive supplies." Alternative marketing arrangements also could be correctly termed alternative procurement or purchasing arrangements depending on one's perspective – as a livestock producer or packer.

This fact sheet provides a seven-year summary of the available data, thus updating the previous report by adding four years of weekly data for fed cattle. This fact sheet also includes the extent of alternative marketing arrangements for slaughter hogs. Questions addressed include: to what extent do packers purchase fed cattle and hogs in the cash market versus alternative marketing arrangements? Is the use of the cash market for fed cattle and hog procurement increasing or decreasing?

Data are taken from selected mandatory price reports at the Agricultural Marketing Service, or AMS, Market News site for livestock reports (<http://www.ams.usda.gov/AMSV1.0/ams.fetchTemplateData.do?template=TemplateB&navID=MarketNewsAndTransportationData&leftNav=MarketNewsAndTransportationData&page=LMarketNewsPage>). Two companion fact sheets, AGEC-616, *Price Comparison of Alternative Marketing Arrangements for Fed Cattle* and AGEC-617 *Price Comparison of Alternative Marketing Arrangements for Hogs*, compare prices paid by packers for fed cattle and hogs by alternative marketing arrangements (both available at <http://pods.dasnr.okstate.edu/docushare/dsweb/View/Collection-236>). Prior to implementation of mandatory price reporting, this type of comparison was not possible.

## Data Summarized

Implementation of the Livestock Mandatory Reporting Act occurred in April 2001. A few kinks in the new reporting system were worked out the first few weeks, so the analysis for this fact sheet begins in May 2001 and extends through May 2008. Thus, this summary is for a full seven-year period. For convenience, years are identified by their end point, thus the year beginning in May 2001 and ending in May 2002 is referred to as 2002. The year ending May 2003 is referred to as 2003; and similarly for the remaining years 2004 to 2008. Alternative marketing/procurement arrangements discussed

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here fall into five categories for fed cattle; negotiated cash trades, forward contracts (mostly basis contracts), formula arrangements (mostly marketing/purchasing agreements with price tied to the cash market), negotiated grid trades, and packer-owned transfers. For slaughter hogs, alternative marketing/procurement methods consist of negotiated cash trades, swine market formula arrangements (usually marketing contracts with price tied to the cash market), other market formula arrangements (with price often tied to the futures market), and other purchase methods (which may be production contracts with price tied to cost of production or with price window clauses).

## Fed Cattle Volume by Marketing Method

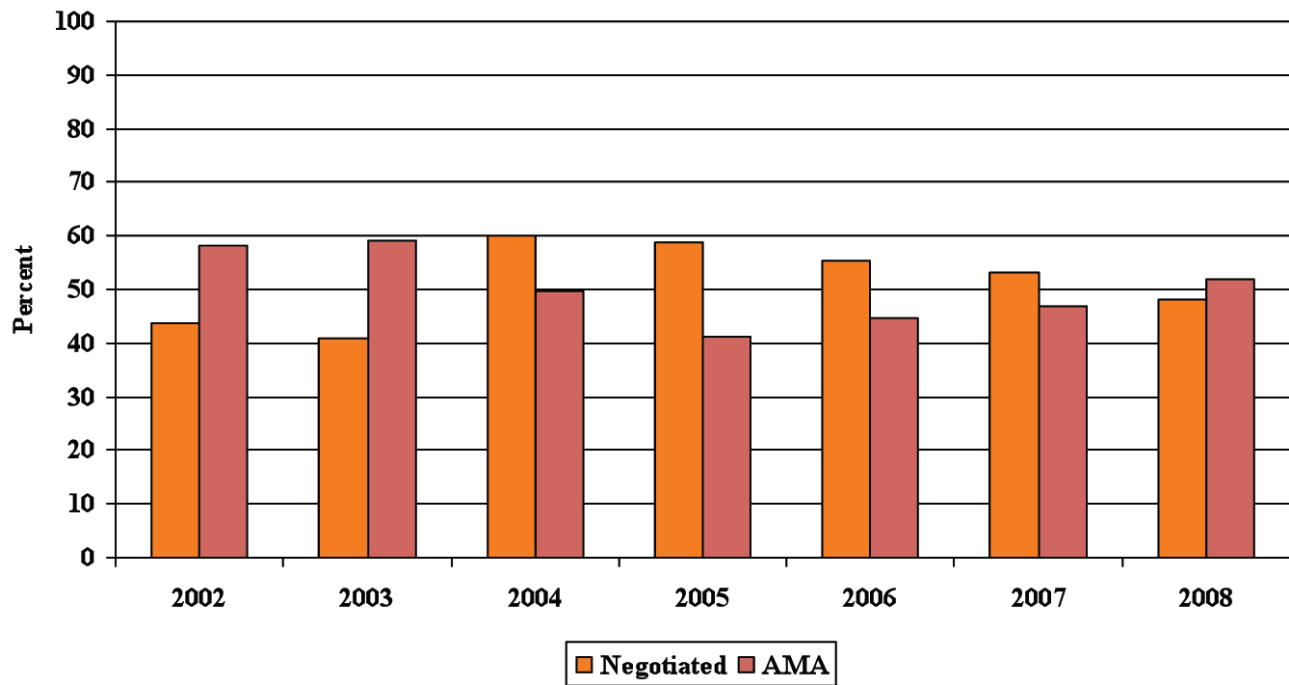
Mandatory price reporting data are discussed from two aspects in this section. The first considers annual averages from which we can identify general trends. The second shows the week-to-week dynamics that are found among alternative marketing methods.

### Annual Averages

Table 1 provides annual summary statistics for the various pricing methods for the seven-year period, May 2001 to May 2008, all since implementing mandatory price reporting. Negotiated cash pricing and formula agreements comprise the bulk of fed cattle purchases by packers. Together they accounted for 79.1 percent in 2008 and 83.0 percent on average for the 2002 to 2008 period. The extent of negotiated cash trading increased early in the period, peaked in 2004 and declined since. While it also appears formula trading has declined, that trend is misleading. In 2004, AMS began reporting negotiated grid pricing transactions. Most of those previously had been recorded as formula transactions. Thus, it is hard to determine whether the extent of formula pricing has declined as much as the data suggest.

Forward contracts, negotiated grid pricing, and packer-owned transfers together represent a much smaller proportion of packer purchases, 21.0 percent in 2008 and 21.1 percent on average for the seven-year period. Forward contracts represented 5.2 percent of total packer procurement over the seven years.

Negotiated grid pricing declined over the reporting period. Importantly to many people, the combination of negotiated cash procurement and negotiated grid procurement has remained relatively stable and even increased somewhat since



**Figure 1. Annual average fed cattle procurement for cash market trades vs. other alternative procurement methods (percent of total), 2002 to 2008.**

2005 (Figure 1). Thus, alternative marketing arrangements, which constitute captive supplies, have not increased in recent years.

Packer ownership of livestock is one of the most discussed components of captive supplies and a frequent target for legislative reform (Ward 2003). For the seven-year period, packer-owned fed cattle accounted for 6.4 percent of total fed cattle purchased by packers. Packer ownership of fed cattle is relatively small, both in absolute numbers of fed cattle and relative to total purchases. While packer ownership exceeds forward contracts, it trails negotiated grid pricing by a small amount and trails both formula pricing and negotiated pricing by a wide margin.

### Weekly Dynamics

The proportion of total fed cattle procurement by various methods changes quite sharply from week to week as can be shown in Figure 2. Week-to-week procurement, whether expressed in number of head or percentage of the total, varies widely and with no particular pattern. High and low percentages on a weekly basis are well above and below the annual averages reported in Table 1.

On a weekly basis, the percentage of negotiated pricing was as low as 21.4 percent and as high as 69.8 percent. Negotiated pricing may be on either live weight (sometimes called live weight pricing) or carcass weight (sometimes called carcass weight or dressed weight pricing). Formula pricing also varied widely from week to week, ranging from 20.0 percent to 64.8 percent. 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

also but the variation was a much smaller magnitude. For forward contracts, the range was 0.2 percent to 22.4 percent; for negotiated grid pricing, 4.8 percent to 18.6 percent; and for packer-owned procurement, 2.6 percent to 12.7 percent of total fed cattle procurement.

Week-to-week variation in procurement method is quite extensive and obvious, but little definitive can be said about long-term trends. Since 2004, negotiated cash pricing has declined somewhat and has been replaced by an increase in formula trading. That reversed a previous trend. No strong trends emerge among the other procurement methods based on the weekly data. However, recall that when negotiated cash pricing is combined with negotiated grid pricing, the extent of cash market procurement has increased in recent years.

The exact reason for the week-to-week variation in procurement methods is not clear. It may be related to specific market conditions or periodic changes in marketing or procurement strategies either by cattle feedlots or packers. However, tradeoffs generally occur between negotiated pricing and formula pricing, and appear not to necessarily involve forward contracting, negotiated grid pricing, or packer ownership of fed cattle.

### Slaughter Hog Volume by Marketing Method

As with fed cattle, mandatory price reporting data for slaughter hogs are discussed from two aspects, annual averages and week-to-week dynamics. The alternative marketing arrangements for hogs differ from those for cattle. The reliance on negotiated cash pricing for hogs is greatly diminished compared with fed cattle. Another difference should be noted

**Table 1. Packer purchases of fed cattle by procurement method, 2002 to 2008.**

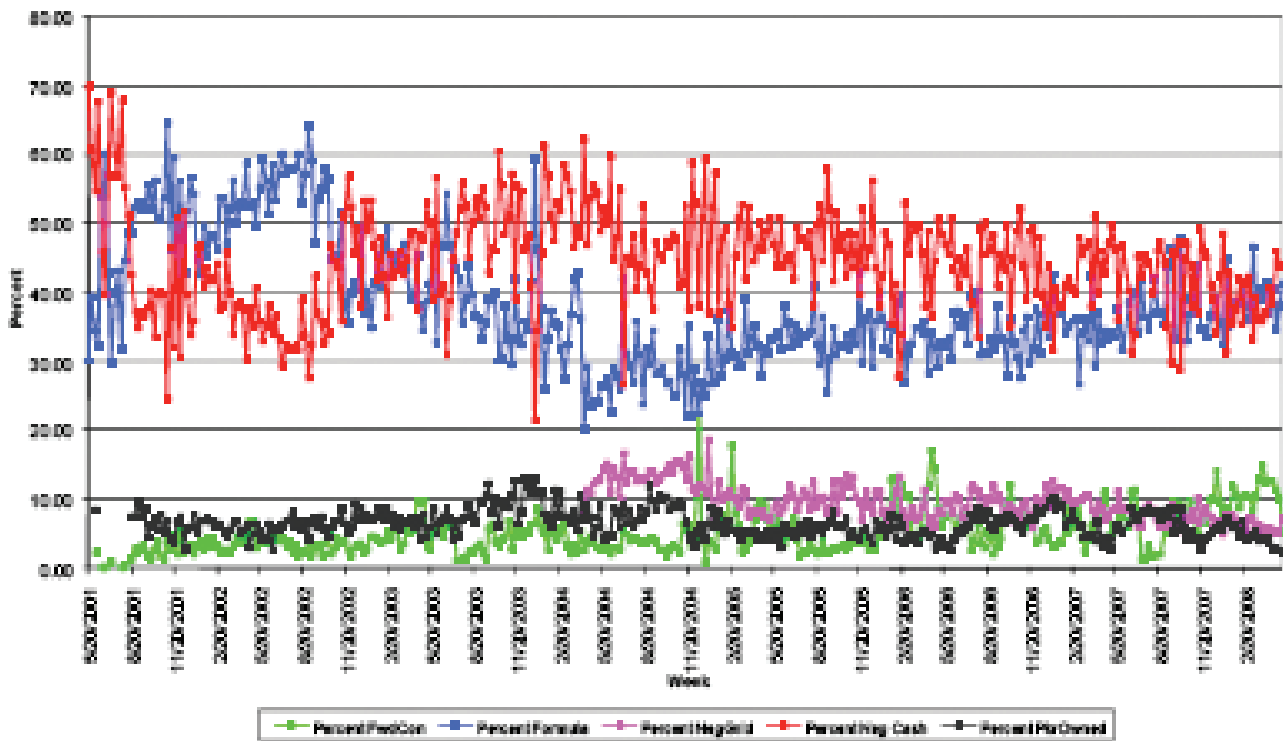
<i>Procurement method</i>	<i>Year*</i>	<i>Summary statistics</i>			<i>Minimum</i>	<i>Maximum</i>
		<i>Mean (head)</i>	<i>Percent of year total</i>	<i>Standard deviation</i>		
Negotiated cash	2002	172,496	43.8	45,508	87,069	303,729
	2003	179,800	41.0	33,168	119,128	280,801
	2004	204,752	49.2	58,851	42,624	320,214
	2005	197,431	46.6	45,462	93,903	312,293
	2006	196,586	45.8	45,123	86,730	291,709
	2007	186,761	43.7	37,186	94,274	256,064
	2008	178,651	41.0	38,393	90,801	254,952
	2002-08	188,068	44.4	45,058	42,624	320,214
Forward contract	2002	12,923	3.0	7,575	516	36,671
	2003	17,591	4.0	7,328	6,834	46,297
	2004	17,116	4.3	7,227	5,305	34,233
	2005	21,023	5.0	15,085	3,742	94,319
	2006	24,155	5.8	15,536	8,763	73,966
	2007	25,838	6.0	10,558	9,477	51,163
	2008	35,070	8.2	14,918	5,886	63,323
	2002-08	22,137	5.2	13,488	516	94,319
Formula agreement	2002	199,886	48.9	58,255	55,741	289,151
	2003	217,002	48.5	58,582	126,141	313,981
	2004	150,655	37.0	40,922	88,386	236,256
	2005	122,530	29.5	15,558	93,295	152,560
	2006	142,073	33.7	16,361	112,381	179,629
	2007	145,269	34.4	17,271	116,666	197,427
	2008	163,385	38.1	13,969	135,250	192,849
	2002-08	162,971	38.6	48,084	55,741	313,981
Negotiated grid	2002					
	2003					
	2004	50,098	11.0	12,942	35,814	64,764
	2005	50,156	12.1	10,598	31,621	68,636
	2006	39,748	9.5	8,018	27,622	58,259
	2007	39,530	9.4	6,343	23,922	57,195
	2008	30,492	7.1	5,972	17,783	44,975
	2002-08	40,219	9.5	10,668	17,783	68,636
Packer owned	2002	26625	6.2	6670	13450	39320
	2003	28353	6.5	5886	12955	42630
	2004	32986	8.3	7198	20320	255171
	2005	28186	6.8	8816	12654	46344
	2006	22131	5.3	4869	13531	33973
	2007	26898	6.4	6710	13254	40375
	2008	24525	5.7	8198	10399	42419
	2002-08	27117	6.4	7666	10399	55171

\* Year 2002 is May 2001 through April 2002; and similarly for other years.  
Source: Agricultural Marketing Service, U.S. Department of Agriculture.

**Table 2. Packer purchases of slaughter hogs by procurement method, 2002 to 2008.**

<i>Procurement method</i>	<i>Year*</i>	<i>Summary statistics</i>			<i>Minimum</i>	<i>Maximum</i>
		<i>Mean (head)</i>	<i>Percent of year total</i>	<i>Standard deviation</i>		
Negotiated cash	2002	167,636	15.5	17,149	110,266	200,739
	2003	178,288	14.5	18,179	106,009	203,734
	2004	157,752	12.7	23,748	108,516	203,421
	2005	143,198	10.9	23,588	89,385	211,169
	2006	148,585	11.4	24,999	102,207	225,797
	2007	111,391	9.5	12,517	85,445	137,749
	2008	135,940	10.3	25,872	77,620	180,064
	2002-08	148,970	12.1	29,403	77,620	225,797
Other formula	2002	196,197	17.4	64,621	56,383	327,794
	2003	113,192	9.4	50,100	45,101	275,396
	2004	129,759	10.3	54,927	53,764	321,017
	2005	184,016	13.9	59,753	106,337	431,823
	2006	163,723	12.5	40,654	84,579	287,652
	2007	151,346	12.8	56,347	84,338	363,949
	2008	217,240	15.8	126,497	86,831	613,908
	2002-08	165,068	13.2	77,219	45,101	613,908
Swine market formula	2002	608,854	55.8	75,246	429,540	754,581
	2003	646,545	52.4	56,464	481,633	776,568
	2004	650,869	51.9	84,942	432,354	784,314
	2005	703,513	53.9	49,520	556,214	824,173
	2006	721,005	55.4	62,356	568,109	829,943
	2007	651,490	55.4	60,257	492,791	746,000
	2008	700,293	53.2	61,433	509,065	816,164
	2002-08	668,939	54.0	74,620	429,540	829,943
Other purchases	2002	127,612	11.3	41,489	30,327	200,045
	2003	297,018	23.7	87,147	110,881	402,517
	2004	314,770	25.2	40,053	227,336	401,255
	2005	277,270	21.3	18,404	227,634	329,203
	2006	270,474	20.7	30,862	191,202	326,909
	2007	263,387	22.4	29,144	208,382	335,430
	2008	271,289	20.7	30,069	221,784	370,388
	2002-08	260,260	20.7	71,951	30,327	402,517

\* Year 2002 is May 2001 through April 2002; and similarly for other years.  
Source: Agricultural Marketing Service, U.S. Department of Agriculture.



**Figure 2. Weekly fed cattle procurement by alternative marketing arrangement (percent of total), May 2001 to May 2008.**

between data reported for fed cattle and hogs. Packer-owned hogs are not included in the four procurement methods discussed here. In this fact sheet, references to total hogs procured are exclusive of hogs owned by packers.

### Annual Averages

Table 2 provides summary statistics for the various hog procurement methods for the period of May 2001 to May 2008. In sharp contrast to fed cattle, negotiated cash transactions for hogs represent a much smaller percentage of total purchases compared with other alternative arrangements. Negotiated cash trades represented 12.1 percent on average for the seven years and 10.3 percent for 2008. Each of the first three years (2002 to 2004) the percentage of negotiated cash trades was above the seven-year average, while each of the four later years (2005 to 2008) the percentage was below the seven-year average. For many years, concerns have been expressed regarding how many cash market transactions are necessary to adequately represent market supply-demand conditions. Adding to the importance of the cash market transactions is the fact some formula transactions are tied to the reported, negotiated cash prices.

In fact, the most used method of procuring slaughter hogs by packers, swine market formula trades are usually tied to negotiated cash prices. Swine market formula transactions represented 54.0 percent of total hog procurement on average for the entire period and 53.2 percent in 2008. The percentage of swine market formula trades has remained relatively stable, ranging annually from 51.9 percent to 55.8 percent.

Other market formula trades represented another 13.2 percent of all hog procurement on average from 2001 to 2008.

Other purchase methods accounted for the remaining 20.7 percent on average.

Alternative marketing arrangements, excluding negotiated cash trading, accounted for 87.9 percent of packer purchases on average for the seven-year period. As shown in Figure 3, this percentage far exceeds the percentage of negotiated cash trades and has been rising slowly over the data period. Thus, with fed cattle, alternative marketing arrangements without cash trades and cash-based transactions were nearly equal. But for hogs, alternative marketing arrangements without cash trades were several times larger than those based on the cash market.

### Weekly Dynamics

The proportion of packers' hog procurement by alternative arrangements differs markedly from that for fed cattle. However, as Figure 4 shows, there is still considerable week-to-week variability in the use of alternative procurement methods. There does not appear to be a clear trade-off between the use of one method with another, unlike that for fed cattle. Nor were there any strong trends for the seven-year period.

Week-to-week variation in use of negotiated cash trades ranged from a low of 5.7 percent to a high of 21.4 percent. Swine market formula trades ranged from 40.2 percent to 64.2 percent. Even greater variation was found for the other two methods. Other market formula trades varied weekly from 3.5 percent to 37.6 percent and other purchase methods ranged from 3.5 percent to 30.4 percent. Reasons for the varied use of alternative marketing arrangements may be related to market conditions and may be dependent on hog producers as well as pork packers.

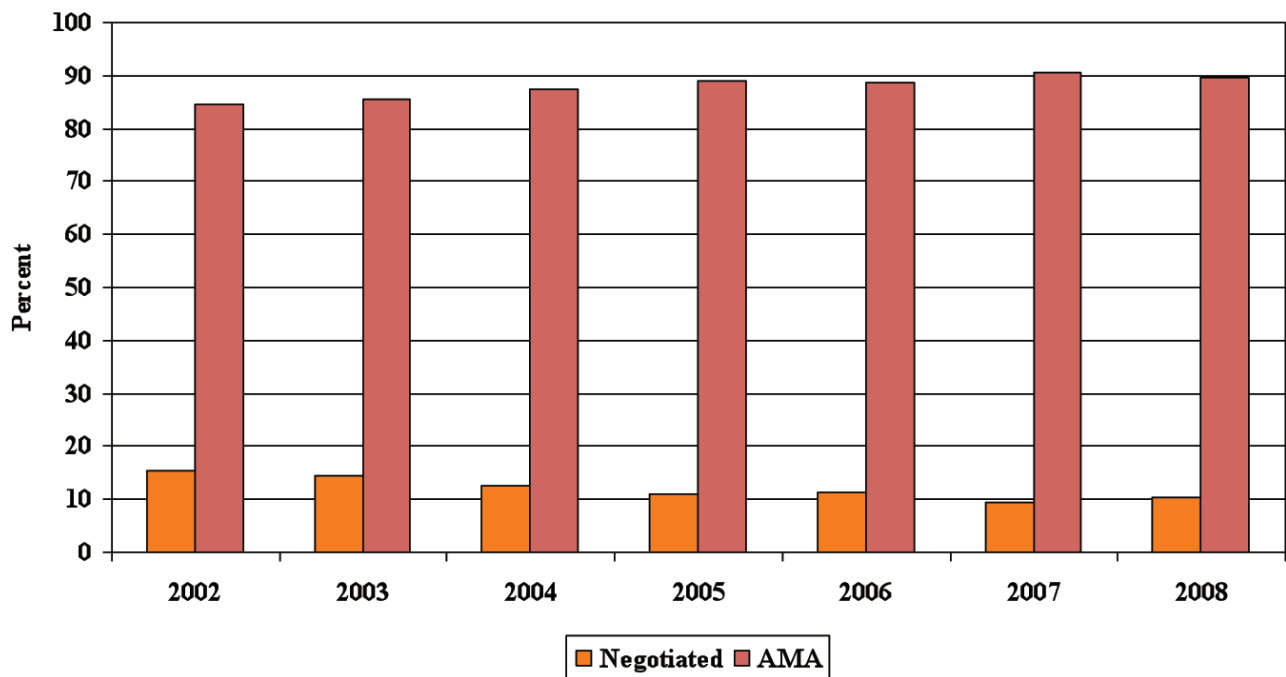


Figure 3. Annual average slaughter hog procurement for cash market trades vs. other alternative procurement methods (percent of total), 2002 to 2008.

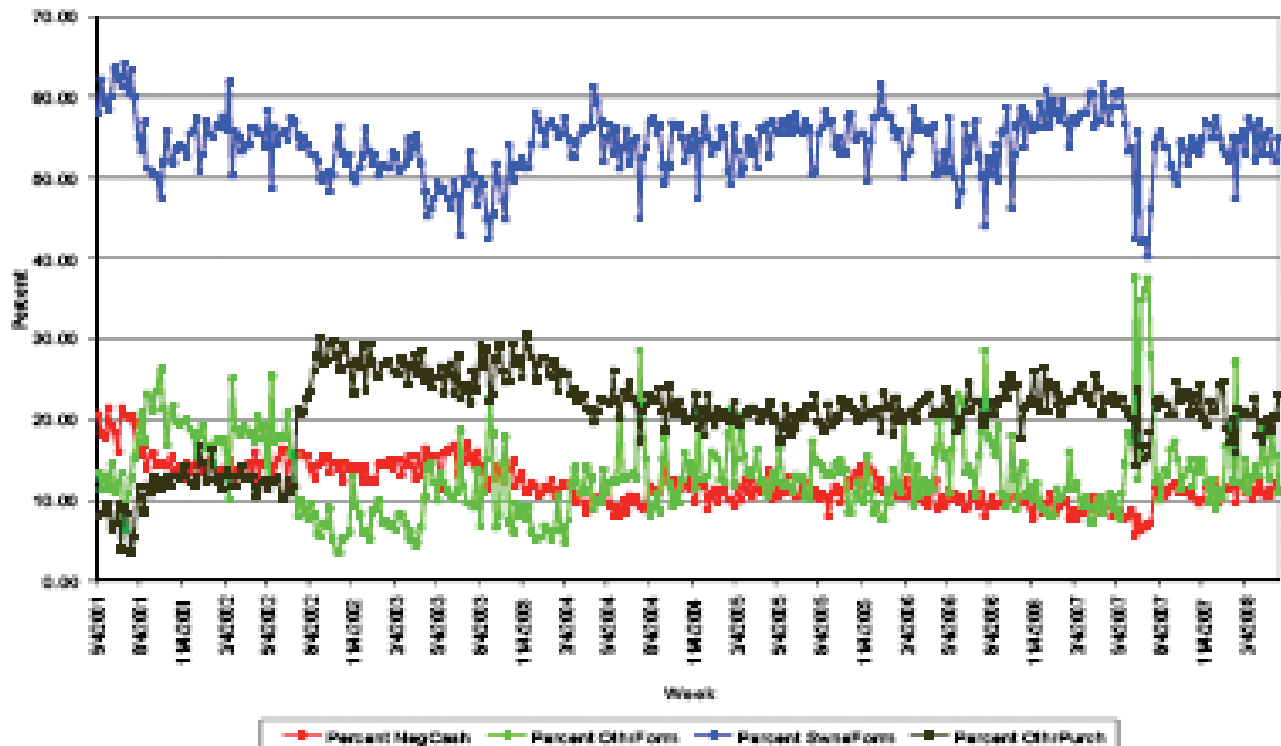


Figure 4. Weekly slaughter hog procurement by alternative marketing arrangement (percent of total), May 2001 to May 2008.

## Conclusions

Prior to mandatory price reporting, there were no timely reports on the extent of packer purchases of livestock and details were rather limited. The only official data available on captive supplies were annual averages compiled and released by the Grain Inspection, Packers and Stockyards Administration, or GIPSA, of the U.S. Department of Agriculture, or USDA. And GIPSA publishes these statistics well after the year in which they occurred. Therefore, mandatory price reporting legislation greatly increased the quality, quantity, and usefulness of data on alternative marketing arrangement for livestock, which were summarized in this fact sheet.

The use of alternative marketing arrangements apart from cash market trading is substantial for fed cattle but has not increased over the past several years. Of primary concern to many cattlemen, packer ownership of fed cattle has not increased over the same 2001 to 2008 period. Cash market reliance for fed cattle is still quite large, especially in

relationship to hogs. For hogs, swine market formula and alternative marketing arrangements, other than cash market trades, dominate hog procurement by packers. And reliance on the cash market for hogs has declined. Economists and the industry will continue to wrestle with the question, "how much cash market trading is enough?" or "when does the decline in cash market trading seriously jeopardize the accuracy of prices to reflect supply and demand conditions?"

## References

Ward, Clement E. *An Appraisal of Expected Impacts from the Proposed Ban on Packers Owning Livestock*. Virginia Tech University, Research Institute on Livestock Pricing, August 2003. <http://agecon.okstate.edu/faculty/publications/1648.pdf>

USDA (U.S. Department of Agriculture), Grain Inspection, Packers and Stockyards Administration. *Packers and Stockyards Statistical Report, 2006 Reporting Year*. SR-08-1, May 2008.

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