Price Comparison of Alternative Marketing Arrangements for Hogs, 2001-2013

Clement E. Ward
Professor Emeritus, Oklahoma State University

This fact sheet compares prices received and paid for hogs by AMAs over the twelve-year period since implementing mandatory price reporting. The primary question addressed in this fact sheet is: Are there significant differences in prices paid for hogs in the cash market compared with other procurement methods? A companion fact sheet provides a similar comparison of fed cattle prices by AMAs, AGEC-616, "Price Comparison of Alternative Marketing Arrangements for Fed Cattle, 2001-2013" (available at osufacts.okstate.edu).

Another companion fact sheet, AGEC-615, "Extent of Alternative Marketing Arrangements for Fed Cattle and Hogs, 2001-2013" (available at osufacts.okstate.edu) reports the volume of purchases by alternative marketing arrangements. These fact sheets report on data which became available following passage of the Livestock Mandatory Reporting Act. Mandatory price reporting (MPR) began in April 2001. Since then the phrase, "alternative marketing arrangements (AMAs)," has become common usage.

Data summarized here are taken from selected mandatory price reports at the Agricultural Marketing Service (AMS) Market News site for livestock reports (http://www.ams.usda.gov/AMSv1.0/LPSMarketNewsPage). Prior to implementation of mandatory price reporting, information in this and the two companion fact sheets was not possible.

Pricing Data from Mandatory Price Reports

Allowing for a brief startup period in the new reporting system, weekly data for this fact sheet begins in May 2001 and extends through April 2013. For convenience, years are identified by their end point, thus the year beginning in May 2001 and ending in April 2002 is referred to as 2002; the year ending April 2003 is referred to as 2003; and similarly for the remaining years 2004 through 2013.

Alternative marketing/procurement arrangements discussed here fall into four categories for slaughter hogs: 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). Prices are not reported for packer owned transfers.

Slaughter Hog Price Comparisons

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

Annual Averages

Table 1 provides summary statistics for the various pricing methods for the twelve-year period since implementing mandatory price reporting. All price comparisons are for barrows and gilts and are expressed on a live weight basis. Each price series is a national, weighted average price for that specific marketing arrangement. It could be argued that the reported national, weighted average negotiated cash price is the most comprehensive reported price and is most representative of market conditions in the cash market. Here, negotiated cash prices are used as the base or standard for comparing prices reported by other AMAs.

Year-to-year differences exist among alternative marketing or procurement arrangements but those differences have not been consistent. Each of the four AMAs had the highest average price for at least two years. Swine market formula prices were highest for three of the last four years. Thus, no single pricing method was best every year. Price differences between some procurement methods differed little in some years while differences between other procurement methods were quite large. Annual average price differences greater than $5/cwt were not uncommon between some procurement methods in some years. Price differences among AMAs are discussed more in subsequent sections.

One major concern in the hog industry has been whether or not sufficient trading occurs in the cash market for prices to represent accurately supply and demand conditions. In AGEC-629, it was noted that cash market trading accounted for 15.5 percent of packer purchases in 2002 but declined to just 3.8 percent in 2013. Based on annual average prices, cash market prices were higher in some years compared with other AMAs, but not others. Overall, negotiated cash prices appear to be competitive with other alternative marketing arrangements in most but not all years.

Price Comparison

All Alternative Marketing Arrangements

Figure 1 compares weekly average live weight barrow and gilt prices for the four AMAs. Wide price differences are evident among the alternative marketing arrangements during

Table 1. Annual hog price summary by AMA (May to April by year).

	Year	*Weekly Mean (price)*	*Min*	*Max*
Negotiated Cash	2002	50.09	39.43	72.90
	2003	45.04	26.88	59.41
	2004	57.13	45.96	80.23
	2005	72.80	62.27	80.59
	2006	61.91	51.22	74.73
	2007	64.32	55.19	79.19
	2008	59.18	45.64	75.77
	2009	54.47	45.57	62.80
	2010	69.93	61.44	85.63
	2011	76.43	58.64	91.78
	2012	87.45	78.30	103.35
	2013	81.10	64.22	100.50
	2002-13	64.99		
Other Formula	2002	55.39	49.64	63.69
	2003	50.14	39.70	57.64
	2004	55.86	49.83	65.22
	2005	63.95	60.42	69.34
	2006	60.05	56.65	66.57
	2007	61.38	56.02	67.98
	2008	65.61	59.14	71.80
	2009	63.36	49.31	71.89
	2010	68.11	62.28	73.65
	2011	75.13	67.55	84.44
	2012	85.06	80.54	89.97
	2013	83.22	76.23	91.82
	2002-13	65.61		
Swine Market Formula	2002	55.27	40.57	72.48
	2003	45.24	29.56	58.09
	2004	56.67	46.15	78.76
	2005	71.82	62.64	80.28
	2006	61.31	50.95	43.65
	2007	64.47	55.92	78.44
	2008	59.40	46.43	74.74
	2009	54.86	46.89	63.27
	2010	70.20	61.54	85.90
	2011	77.32	60.36	91.97
	2012	88.03	79.63	104.55
	2013	81.92	66.26	99.16
	2002-13	65.54		
Other Purchase	2002	57.01	50.09	67.05
	2003	52.90	49.79	58.95
	2004	58.84	53.22	73.70
	2005	68.55	61.91	74.28
	2006	60.98	53.48	70.77
	2007	64.11	57.88	72.87
	2008	63.33	55.81	72.61
	2009	62.28	58.08	65.85
	2010	69.35	64.09	79.64
	2011	77.12	67.31	90.70
	2012	87.22	80.56	98.33
	2013	85.59	77.35	98.26
	2002-13	67.27		

some periods during the 12 years. Negotiated cash prices and swine market formula prices are nearly indistinguishable. But those two series exhibit more week-to-week variability than do the other two series. A key explanation is that negotiated cash prices should represent changing supply and demand. Thus, in theory, they could be expected to exhibit the most variation from week to week.

Two key points can be made from the Figure 1 comparison. First, at some point during the last 12 years, each pricing alternative was the highest pricing method for one or more weeks. For some methods the highest price distinction was short-lived. Negotiated cash prices had both the highest and lowest weekly average prices over the twelve-year period. Second, considerable variability exists between pricing methods and understanding why is important.

Negotiated Cash Prices vs. Swine Market Formula Prices

Figure 2 compares negotiated cash prices with swine market formula prices. The two lines on the graph are nearly indistinguishable. On a week-to-week basis with rare exception, the two weekly average price series are within pennies of each other. It can be seen that at some turning points in the market, negotiated cash prices are highest or lowest, but not in all cases. Most swine market formula prices are tied to the cash market so observed price differences could be expected to be small and variability of prices could be expected to be nearly identical.

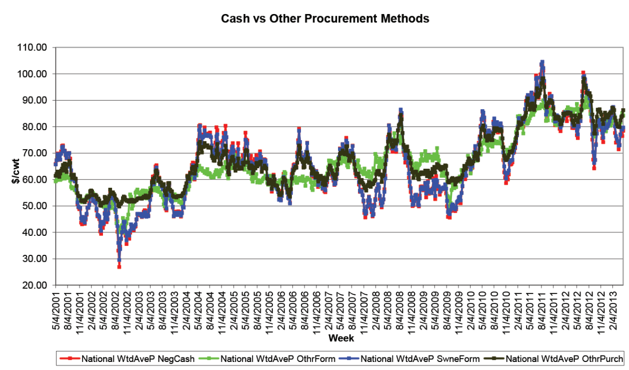

Figure 1. Weekly slaughter hog prices by alternative marketing arrangements, May 2001 to April 2013.

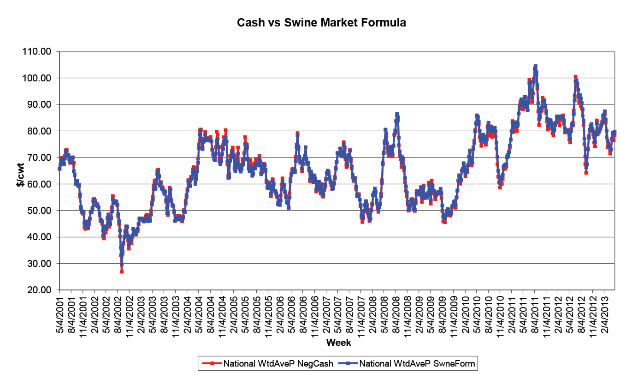

Figure 2. Weekly negotiated cash prices for slaughter hog, compared with swine market formula prices, May 2001 to April 2013.

Negotiated Cash Prices vs. Other Market Formula Prices

Figure 3 compares negotiated cash prices with other market formula prices. There is a sharp distinction between Figure 3 and Figure 2. Whereas in Figure 2, the two price series moved in lock-step with each other, clearly evident in Figure 3 is the wide deviation in prices for several weeks in a row. Differences are often $5-$10/cwt. or more and arise for at least a couple reasons.

Other market formula prices often are tied to the futures market or futures option market. Therefore, other formula prices represent a price risk management alternative in conjunction with a price discovery alternative. A risk management strategy may be to reduce week-to-week variability in prices relative to the cash market but also to reduce extreme price gyrations. This means avoiding the extreme price lows and the extreme price highs. Figure 3 reflects the annual average prices shown in Table 1. At some times, other market formula prices are highest and sometimes lowest based on annual averages, but the week-to-week variability is less than cash market prices, and less than swine market formula prices which are tied to cash prices.

Price differences between these two methods also may arise from the time period in which prices are discovered in other market formula price arrangements vs. cash prices. The sale price for slaughter hogs may be established with a futures market well before hogs are delivered for slaughter. In contrast, prices for most cash trades occur in the same week or within just a few days of when hogs are delivered for slaughter. As a result, the average other market formula price may or may not be close to the current weekly cash market price. Price differences may result in part from average weekly prices not being computed for the same price discovery periods for the two pricing methods.

Two other observations can be made from Figure 3. First, negotiated cash prices have much greater variability than other market formula prices. Second, other market formula prices are never the highest or lowest price for any week during the past 12 years.

Negotiated Cash Prices vs. Other Purchase Prices

Figure 4 parallels Figure 3 in the sense that negotiated cash prices and other purchase prices deviate widely at times.

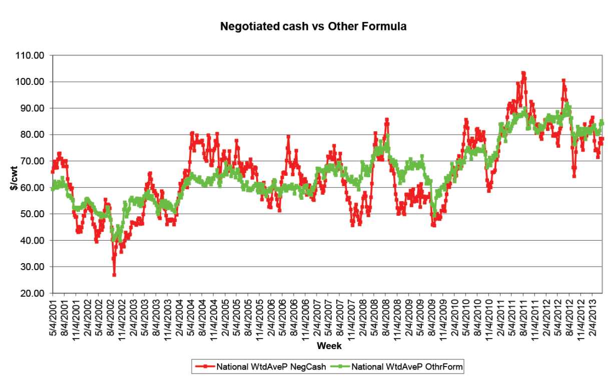

Figure 3. Weekly negotiated cash prices for slaughter hogs, compared with other market formula prices, May 2001 to April 2013.

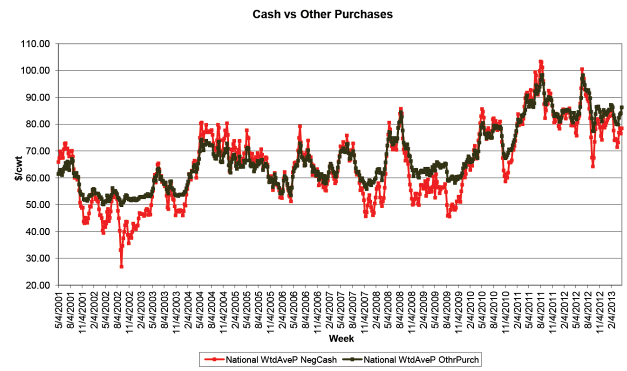

Figure 4. Weekly negotiated cash prices for slaughter hogs, compared with other purchase method prices, May 2001 to April 2013.

This was noted from annual average prices shown in Table 1. Other purchase prices are less variable on a week-to-week basis than negotiated cash prices. And other purchase prices have never been the highest or lowest compared with negotiated cash prices over the past twelve years.

Price differences again can be explained by the nature of the other purchase arrangements. These may be contract purchases with price tied to cost of production or may be window contracts with or without a ledger agreement. Both types of contracts are risk management tools. Cost of production contracts are in essence a method of pricing to secure a fixed or narrow margin related to the cost of producing hogs. This pricing might also be called cost-plus pricing or, in essence, the cost of production plus a profit margin. Window contracts are a means of stabilizing prices to a window or price range which eliminates periods of low prices as well as periods of high prices. Ledger arrangements may be agreements between a hog producer and packer such that producers receive a price at the floor or ceiling of the window when prices are below and above the window, respectively. If prices are higher than the ceiling, packers retain an amount above the ceiling in a ledger account, which is used to offset periods when prices fall below the floor of the window at other times.

Whether with cost of production contracts or window contracts, weekly average prices potentially may differ widely from that week's negotiated cash market prices and swine market prices tied to the cash market. Therefore, deviations from the negotiated cash market could be expected for other purchase prices.

Conclusions

Mandatory price reporting increased the amount of data and information available on various pricing methods and quantities traded for slaughter hogs. Comparisons between prices paid by packers by alternative marketing arrangements (AMAs) are easier now than prior to mandatory price reporting. Analyses with weekly data for the 12 years since mandatory price reporting began can be summarized as follows:

- Differences between annual average negotiated cash prices and prices from AMAs (that is, swine market formula prices, other market formula prices, and other purchase arrangement prices) differed widely. While small differences were found between negotiated cash prices and swine market formula prices, differences between negotiated cash prices and the other two methods (other market formula prices and other purchase arrangements) were often large. However, no pricing method consistently was higher or lower than others on an annual basis for the twelve-year period and each alternative was highest in at least two years.

- Considerable week-to-week variation in prices is evident. Overall, for the twelve year period, swine market formula prices were nearly identical to negotiated cash prices. Both track the short-term dynamics or general movement of market prices, which are determined by supply and demand forces.
- Large differences between negotiated cash prices and prices from other market formula prices or other purchase prices can be explained in part by the underlying mechanics of price discovery for each arrangement. Both alternatives are price or profit risk management tools. As such, the timing of discovering the sale/purchase price affects the timing of the reported weekly average price, which can contribute to large price differences.

References

Ward, Clement E., AGEC-629 " Extent of Alternative Marketing Arrangements for Fed Cattle and Hogs, 2001-2013.'" osufacts.okstate.edu

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