U.S. Market Hog Sales, 2002-2014*

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During the last decade of the 20th Century there was a dramatic shift in how the price of slaughter hogs was determined. Prior to 1990, most barrows and gilts were sold on the spot market, i.e., which packer would buy the hogs and the price to be paid were determined through negotiations between the producer and hog packers that occurred shortly before slaughter. Since the late 1990s, most barrows and gilts have been marketed under a written contract between the producer and the packer. These contracts specify how the hog price is to be determined.

The Livestock Mandatory Reporting Act of 1999, as amended, requires large packers to report to USDA detailed information on the hogs they buy. Data from the Mandatory Price Reporting system (MPR) is published each business day by USDA/AMS and is the basis for the information in this paper. MPR applies to hogs slaughtered by any U.S. packing plant that processes more than 100,000 hogs per year. Typically, about 96% of federally inspected barrow and gilt slaughter is reported under MPR. MPR separates packer purchases of barrows and gilts into several categories:

Packer sold – barrows and gilts raised by a packer but sold for slaughter to a different packer.

Packer owned – barrows and gilts owned, raised, and slaughtered by the same packer.

Negotiated – barrows and gilts raised by a non-packer and purchased by a packer on a carcass weight basis on the cash or spot market, i.e., the base price for the hogs is determined by buyer-seller interaction shortly (not more than 14 days) before slaughter.

Market formula – barrows and gilts raised by a non-packer and purchased by a packer on a carcass weight basis with the price paid for the hogs determined by a contract formula based on a contemporaneous publicly reported hog or pork price.

Other market formula – barrows and gilts raised by a non-packer and purchased by a packer on a carcass weight basis with the price paid determined by a contract formula based on the Chicago Mercantile Exchange's lean hog futures contract at the time the contract was signed.

Other purchase agreement – barrows and gilts raised by a non-packer and purchased by a packer on a carcass weight basis with the price determined by a contract using some method other than the three listed immediately above.

Live weight priced – barrows and gilts purchased on the spot or cash market with the price based on the live weight of the animal. This category includes some packer sold hogs.

Non-MPR hogs – barrows and gilts not covered by MPR, i.e., slaughtered in a packing plant that processes fewer than 100,000 hogs annually.

Table 1A.
Market Hog Sales by Pricing Method, 2002-2007

	2002	**2003**	**2004**	**2005**	**2006**	**2007**
	% of Fed. Inspected Barrow & Gilt Slaughter					
MPR carcass weight priced						
Negotiated	13.8	12.6	10.4	10.4	9.0	8.2
Market Formula	40.8	37.1	38.2	38.6	35.4	35.7
Other Market Formula	8.7	7.2	8.6	8.4	8.1	8.1
Other Purchase Agreement	12.2	18.0	17.0	15.5	14.8	13.8
Packer Sold	2.1	2.0	2.0	2.3	5.9	6.1
Packer Owned	16.4	17.8	18.1	19.4	20.7	22.3
TOTAL	94.1	94.8	94.2	94.6	93.9	94.2
MPR live weight priced			1.6	1.5	1.7	1.9
Non-MPR			4.2	3.9	4.4	3.9
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0

Source: USDA/AMS Market News Reports: summary of LM_HG201 and LM_HG200

Table 1B.
Market Hog Sales by Pricing Method, 2008-2014

	2008	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**
	% of Federally Inspected Barrow & Gilt Slaughter						
MPR carcass weight priced							
Negotiated	8.1	6.5	4.9	4.1	3.4	3.1	2.6
Market Formula	35.6	41.4	36.5	36.8	38.9	38.9	38.9
Other Market Formula	9.4	6.5	10.1	9.4	7.3	6.9	10.0
Other Purchase Agreement	12.6	11.2	12.4	14.6	14.6	14.1	12.5
Packer Sold	5.9	5.5	5.3	4.5	4.1	3.8	4.0
Packer Owned	23.1	24.0	25.2	26.5	26.6	27.8	27.2
TOTAL	94.7	95.2	94.4	95.7	95.0	94.6	95.2
MPR live weight priced	1.5	0.9	1.3	1.3	1.0	1.0	0.8
Non-MPR	3.9	3.9	4.3	3.0	4.0	4.4	4.0
TOTAL	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: USDA/AMS Market News Reports: summary of LM_HG201 and LM_HG200

Tables 1A and 1B show the percent of federally inspected barrow and gilt slaughter that was purchased under these different methods for the years 2002 through 2014. The share of Negotiated sales on a carcass weight basis dropped from 13.8% of federally inspected barrow and gilt slaughter in 2002 to only 2.6% in 2014. The percentage of Packer Owned hogs grew each year increasing from 16.4% in 2002 to 27.8% in 2013, before decreasing to 27.2% in 2014.

The percentage of Packer Sold hogs jumped from 2.3% in 2005 to 5.9% in 2006. This jump occurred because in the spring of 2006 USDA reclassified as Packer Sold the hogs raised and sold to other packers by the multiple owners of two producer-owned packing plants (Triumph Foods and Meadowbrook Farms).

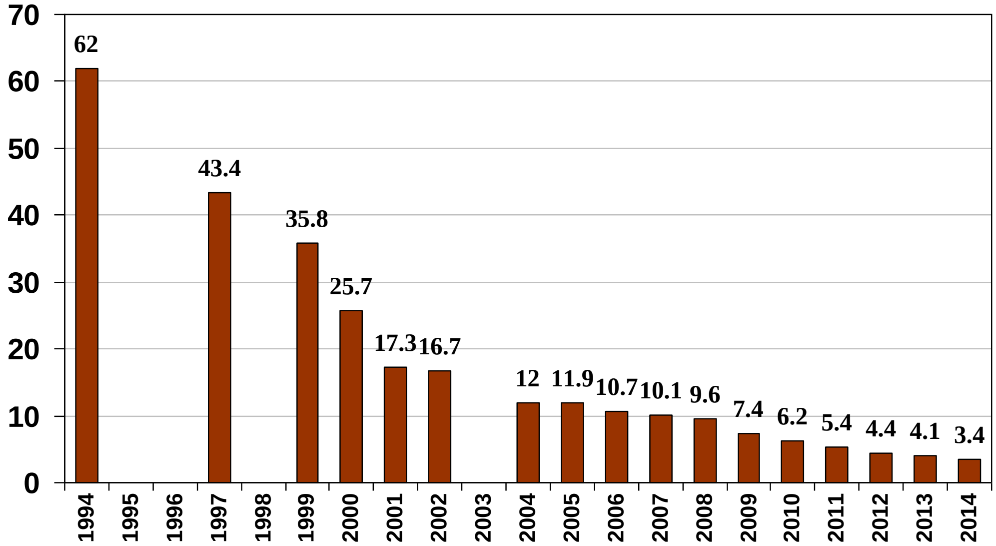
The other three categories of hogs purchased on a carcass weight basis under MPR (Market Formula, Other Market Formula, and Other Purchase Agreement) remained fairly consistent in market share over this 13 year period.

The final two categories (MPR live weight priced and Non-MPR hogs) remained reasonably steady with a combined share of roughly 5% of federally inspected barrow and gilt slaughter.

The ever declining number of Negotiated hog purchases is worrisome. My colleague, Glenn Grimes, did his initial survey of packer pricing methods in 1994. That survey found that 62% of the barrows and gilts purchased by large U.S. packers in January 1994 were spot market purchases. In 2014, MPR data indicate only 3.4% of federally inspected barrow and gilt slaughter was spot market purchases (2.6% carcass weight basis and 0.8% live weight basis). See Figure 1. The widely reported Negotiated hog price is a key component in determining the price for four of the other MPR categories. The price paid for the 2.6% of barrows and gilts purchased on a negotiated carcass weight basis in 2014 was crucial to determining the price for roughly three-fourths of the combined 65.4% of hogs purchased on Market Formula, Other Market Formula, Other Purchase Agreement, and Packer Sold. It is not clear how much longer there will be sufficient numbers of Negotiated purchases to effectively represent the true supply and demand balance for hogs and thus be a sound basis for formula pricing other hogs.

The Mandatory Price Reporting Act of 2010 requires packers to report the price and volume of wholesale pork cuts that they sell. These reports began in January 2013 and are believed to result in a more accurate calculation of pork cutout value than the old voluntary reporting system which was discontinued in early April 2013. Over time, these mandatory pork cutout reports may become widely used as a substitute for the MPR Negotiated carcass hog price in producer-packer marketing contracts.

Figure 1.
Percent of Barrows & Gilts Sold on the Spot Market, live or carcass weight basis



Source: Glenn Grimes for years before 2003; USDA/AMS for years after 2003

MPR requires covered packers to report percent lean, carcass weight, base price, and net price for most of the marketing categories. These data for 2014 are shown in Table 2. In 2014, Packer Owned hogs had carcasses with the lowest average percent lean (53.42%) while packer sold hogs had carcasses with the highest average percent lean (55.95%).

Negotiated purchases were the lightest hogs with an average carcass weight of 206.34 pounds in 2014. Packer owned hogs were the heaviest at 216.31 pounds on average.

The base hog price is determined before premiums or discounts. The net price includes price adjustments for weight, leanness, delivery time, transportation, etc. For 2014, both the base price and the net price were lowest for Other Market Formula hogs ($94.41/cwt and $97.00/cwt, respectively). In 2014, the base price and the net price were both highest for packer sold hogs ($104.20/cwt and $107.05/cwt, respectively).

In 2014, the average price of MPR hogs purchased on a live weight basis on the spot or cash market was $78.62/cwt. That equaled 77.2% of the average carcass base price and 75.4% of the average carcass net price of Negotiated carcass weight purchases. MPR data indicate the average dressing percent for barrows and gilts in 2014 was approximately 75.5%.

Table 2

Barrow & Gilt Slaughter Averages by MPR Pricing Method, 2014

	% lean	Carcass Weight lbs.	Base Carcass Price $/cwt.	Net Carcass Price $/cwt.
MPR carcass weight priced				
Negotiated	54.14	206.34	101.89	104.26
Market Formula	55.44	214.85	103.35	105.22
Other Market Formula	55.58	215.73	94.41	97.00
Other Purchase Agreement	54.89	213.09	99.24	100.29
Packer Sold	55.95	207.31	104.20	107.05
Packer Owned	53.42	216.31		
Total	54.79	214.58		

Source: USDA/AMS Market News Reports: LM_HG201

There is limited data available on hog pricing methods prior to the beginning of MPR data in mid 2001. My former colleague, Glenn Grimes, did some initial surveys of packer pricing methods beginning in the early 1990s. The results are presented in Table 3.

Table 3
Glenn Grimes Packer Surveys
Pricing Method Used for Market Hog Purchases in January

	1994	**1997**	**1999**	**2000**	**2001**	**2002**
	------percent of barrow & gilt purchases------					
Negotiated	62.0	43.4	35.8	25.7	17.3	16.7
Market formula			44.2	47.2	54.0	44.5
Other market formula			3.4	8.5	5.7	11.8
Other purchase arrangement			14.4	16.9	22.8	8.6

Source: U.S. Hog Marketing Contract Study, Grimes and Plain, AEWP 2009-1, January 2009

The definitions for the marketing arrangements used by Grimes in these early studies are not exactly the same as those used by MPR. For example, Glenn did not use separate categories for packer sold or packer owned hogs. Here are the definitions used by Grimes and their comparison to MPR.

Negotiated. This is comparable to the MPR definition except it includes both live and carcass weight purchases and some packer raised hogs.

Market formula. This is also consistent with the MPR definition except for including some packer raised hogs.

Other market formula. Like MPR this grouping includes hogs tied to the futures market price. In 2002 this group also included contracts tied to feed prices.

Other purchase arrangement. This group included packer raised hogs. In 2002 this group only included window risk sharing contracts. The MPR system does not provide information about ledgers. Based on Grimes' surveys, for half of the other purchase arrangement hogs the price is tied to feed prices and for half the contract is a window type. Grimes found that ledgers were in place on one-third of the other purchase arrangement hogs and two-thirds of these hogs had no ledger.