



# Livestock Price OUTLOOK



A joint publication of the Department of Agricultural Economics, College of Agriculture, Purdue University, West Lafayette, Indiana, and the Department of Agricultural and Consumer Economics, College of Agricultural, Consumer and Environmental Sciences, University of Illinois at Urbana-Champaign.

## HOG PRODUCERS: “STRIVE TO SURVIVE” IN 2007/08

JANUARY 2007

*Chris Hurt*

2007 – No. 1

Much higher feed costs are likely to eliminate the profit potential for pork producers in 2007. After three years of favorable returns, 2007 is expected to be a year with losses of \$1 to \$2 per live hundredweight with grave concerns of even higher feed prices and greater losses.

Total costs of production in 2007 are expected to be about 24 percent higher than in the two previous years with corn costs up an estimated 81 percent and soybean meal a more modest 8 percent. In addition, large uncertainty surrounds feed costs in 2007 as the corn and soybean sectors adjust to the rapid explosion in corn demand for fuel ethanol.

### Little Adjustment Yet

The pork industry has not adjusted much yet to the new realities of corn and soybean meal prices. The breeding herd remains in a slow expansion and is higher by about 1 percent. Market herd numbers are also higher by about 1 percent. Winter farrowings are expected to be up 2 percent and next spring farrowings up 1 percent. The number of pigs per litter is expected to be high this winter due to the mild weather and may continue to set new records throughout the year.

Over the past two years, the breeding herd has risen by a modest 2 percent, representing 120,000 more animals. Regionally, this expansion has come in two locations. The first is in the Eastern Corn Belt (Indiana, Illinois, Ohio, and Wisconsin) where breeding herd numbers have been up 80,000 head. The second is the Central Plains (Colorado, Kansas, and Nebraska) where numbers were up 40,000 head. Most other areas have seen only slight changes.

Record pork production of 21.4 billion pounds is expected for 2007. Slaughter numbers are expected to reach 107.3 million head. This will be the sixth consecutive year of record pork production. The growth of pork exports is the reason for the continued U.S. industry growth. Exports rose by 1.4 billion pounds from 2002 to 2006, while domestic consumption was about unchanged. A critical question for the future of the U.S. pork industry is how will the diversion of so much corn to fuel impact the U.S. industry's ability to grow the export market in coming years?

### Hog Prices Remain Strong

Hog prices are expected to remain relatively strong in 2007 given record high production. Prices for live animals are expected to

average about \$48 per live hundredweight, or \$64.50 on a carcass basis. This compares with \$47.34 in 2006 and \$50.10 in 2005.

Prices are expected to average in the mid-\$40's, in the first quarter of 2007 and then move up to averages near \$50 for the second and third quarters, before falling back to the mid-\$40 in the final quarter. Yearly price highs would be expected in late-May and June with prices reaching the low-to-mid \$50's. Yearly lows would be both at the beginning of the year and at the end of the year, in the very low \$40s.

Anticipated cost of production based upon closing prices of corn and soybean meal futures on January 29 are expected to average near \$49.50 in 2007. This compares with a \$40 average for 2005 and 2006 combined. Given expected prices at \$48, this means an expected net loss of about \$1.50 per live hundredweight with the largest losses in the first and the last quarter of the year.

### **Feed Costs Eliminate Profit Potential**

The dynamics of corn and meal prices in 2007 now appears to be a larger concern than hog prices. Now that the \$4.00 futures ceiling has been exceeded, upside objectives could well come in \$.50 intervals at \$4.50, \$5.00 and \$5.50. Volatility is likely to remain high and this may mean opportunities to buy corn and meal on the dips. At this writing, July 2007 corn futures are \$4.185 per bushel and the options market determined odds of prices moving to \$4.50 are 38 percent and to \$5.00 are 20 percent. These are reasonably large odds and many producers will want to consider some price protection measures.

There are four pricing strategies that come to mind to protect against corn and meal upside price movements. The first is to acquire as much cash corn as is possible this winter for feeding needs through mid-

summer. Ownership costs are generally less than premium corn bids through mid-summer. One central Indiana elevator has a \$.41 per bushel premium for July delivery corn versus February 1, as an example. Interest costs at 8 percent per year totals about \$.15 per bushel until July 1. If one has storage space, ownership now appears advantageous. In addition, as more ethanol plants come on-line, basis levels are expected to strengthen. Owning corn now may help avoid a higher than expected basis this spring and summer.

A second corn pricing strategy is to buy corn futures on the breaks. A third is to buy corn call options on the breaks. For the July futures, an at-the-money call is about \$.32 per bushel while the \$.50 out-of-the-money calls are about \$.18 per bushel. This is a strategy that establishes a maximum futures purchase price, but also allows lower futures purchase prices if the market should move downward.

A fourth strategy is to set a purchase price range on futures by both buying calls and selling an equal number of out-of-the money puts. The Chicago Board of Trade has a short two page description of this strategy which establishes a maximum and a minimum futures price range available at <http://www.cbot.com/cbot/docs/71647.pdf>

Spring and summer growing conditions will be a major concern as well. Since 1975, the odds of having U.S. corn yields drop by 5 percent or more has been 22 percent. Unfortunately for corn users, if that were to happen in 2007 corn prices would be expected to rise sharply, perhaps to record levels.

### **Longer Term Adjustments**

While 2007 and early 2008 appear to be a period of some losses for pork producers, there have been much more difficult financial times for the industry. Some cut-back in the

breeding herd is likely into mid-and-late 2007, along with lighter marketing weights. This should help hog prices to recover in late 2008 and 2009. Higher retail and farm prices may mean that the industry can return to a profit in 2009 and 2010.

Feed price volatility is also expected to be extreme in coming months. This means there will be dips in the market that may provide buying opportunities. However, it also means there will be wide price swings. Emotion often becomes an worst enemy when price moves up and down sharply. Buying programs which have breakevens as an objective and a diversified strategy which splits buying into several decision periods can help reduce the negative impacts of emotional market decision making.

For the next year and one-half, producers may need to think more about surviving this narrow margin period rather than hoping for a turn to lower feed prices. Survival over the next 18 months may go a long way for being in position to take advantage of much better margins in late-2008 and 2009.

Keep in mind that ethanol margins have eroded since their peak last summer. Current estimates are that the breakeven levels for new ethanol plant construction are about \$4.25 per bushel, but this could drop to \$3.75 by this summer if ethanol prices drop as anticipated by futures markets. This means that ethanol plants will be part of the corn rationing process as well. Some still believe ethanol plants can pay \$7.00 for corn. While that was true last summer, it is no longer the case.

Hopefully, more ethanol investors will decide to put their ethanol plant construction plans on hold and provide some time for the livestock and poultry industries to adjust to the new realities of high feed prices.

Issued by Chris Hurt  
Extension Economist  
Purdue University

<b>PRODUCTION</b>		Production	Percent
Year	Quarter	Million#s	Change vs. Year-ago
2004	I	5,130	4.7
	II	4,897	3.3
	III	5,046	5.0
	IV	5,435	-1.2
	Year	<b>20,508</b>	<b>2.8</b>
2005	I	5,136	0.1
	II	5,022	2.6
	III	4,999	-0.9
	IV	5,525	1.7
	Year	<b>20,682</b>	<b>0.8</b>
2006	I	5,321	3.6
	II	4,998	-0.5
	III	5,071	1.4
	IV	5,627	1.8
	Year	<b>21,017</b>	<b>1.6</b>
2007	I	5,303	-0.3
	II	5,139	2.8
	III	5,252	3.6
	IV	5,698	1.3
	Year	<b>21,391</b>	<b>1.8</b>

<b>PRICES</b>		Liveweight	Percent
Year	Quarter	Price \$/cwt.	Change vs. Year-ago
2004	I	\$44.18	24.9
	II	\$54.91	28.8
	III	\$56.58	31.9
	IV	\$54.35	47.3
	Year	<b>\$52.51</b>	<b>33.1</b>
2005	I	\$52.24	18.2
	II	\$52.09	-5.1
	III	\$50.51	-10.7
	IV	\$45.54	-16.2
	Year	<b>\$50.10</b>	<b>-4.6</b>
2006	I	\$42.63	-18.4
	II	\$48.45	-7.0
	III	\$51.83	2.6
	IV	\$46.43	2.0
	Year	<b>\$47.34</b>	<b>-5.5</b>
2007	I	\$45.86	7.6
	II	\$49.99	3.2
	III	\$49.72	-4.1
	IV	\$46.46	0.1
	Year	<b>\$48.01</b>	<b>1.4</b>

<b>PRODUCTION</b>			Percent
Year	Quarter	Production Million#s	Change vs. Year-ago
2004	I	5,130	4.7%
	II	4,897	3.3%
	III	5,046	5.0%
	IV	5,435	-1.2%
	Year	<b>20,508</b>	<b>2.8%</b>
2005	I	5,136	0.1%
	II	5,022	2.6%
	III	4,999	-0.9%
	IV	5,525	1.7%
	Year	<b>20,682</b>	<b>0.8%</b>
2006	I	5,321	3.6%
	II	4,998	-0.5%
	III	5,071	1.4%
	IV	5,627	1.8%
	Year	<b>21,017</b>	<b>1.6%</b>
2007	I	5,303	-0.3%
	II	5,139	2.8%
	III	5,252	3.6%
	IV	5,698	1.3%
	Year	<b>21,391</b>	<b>1.8%</b>

<b>PRICES</b>			Liveweight	Percent
Year	Quarter	Price \$/cwt.	Change vs. Year-ago	
2004	I	\$44.18	24.9%	
	II	\$54.91	28.8%	
	III	\$56.58	31.9%	
	IV	\$54.35	47.3%	
	Year	<b>\$52.51</b>	<b>33.1%</b>	
2005	I	\$52.24	18.2%	
	II	\$52.09	-5.1%	
	III	\$50.51	-10.7%	
	IV	\$45.54	-16.2%	
	Year	<b>\$50.10</b>	<b>-4.6%</b>	
2006	I	\$42.63	-18.4%	
	II	\$48.45	-7.0%	
	III	\$51.83	2.6%	
	IV	\$46.43	2.0%	
	Year	<b>\$47.34</b>	<b>-5.5%</b>	
2007	I	\$45.86	7.6%	
	II	\$49.99	3.2%	
	III	\$49.72	-4.1%	
	IV	\$46.46	0.1%	
	Year	<b>\$48.01</b>	<b>1.4%</b>	

Table 1. Hogs and Pigs in the United States, December 1

	2005	2006	2006 as % of 2005 percent
	thousand head		
<i>Inventory</i>			
All hogs and pigs	61,449	62,149	101.1
Kept for breeding	6,011	6,088	101.3
Kept for market	55,438	56,061	101.1
<i>Market hogs by weight</i>			
Under 60 pounds	20,055	20,334	101.4
60-119	13,524	13,603	100.6
120-179	11,293	11,544	102.2
180 and over	10,567	10,580	100.1
<i>Sows farrowing</i>			
June 06 - Aug 06	2,918	2,924	100.2
Sept 06 - Nov 06	2,900	2,909	100.3
Dec 06 - Feb 07 <sup>1</sup>	2840	2,902	102.2
March 07 - May 07 <sup>1</sup>	2,916	2,932	100.5
<i>Pigs saved per litter</i>			
March 06 - May 06	9.02	9.08	100.7
June 06 - Aug 06	9.06	9.14	100.9
Sept 06 - Dec 06	9.03	9.13	101.1
<i>Pig crop</i>			
March 06 - May 06	25,986	26,480	101.9
June 06 - Aug 06	26,449	26,731	101.1
Sept 06 - Dec 06	26,187	26,551	101.4

<sup>1</sup> IntentionsTable 2. U.S. Market Hogs Weighing 60 to 179 Pounds on Dec 1 (previous year)<sup>c</sup>, and Commercial Slaughter in Calendar Quarter from January through March

Years <sup>c</sup>	Number of Hogs	Jan-March	Ratio
	60 to 179 Pounds	Commercial Slaughter	
1,000 head			
1992	23,351	23,802	101.9
1993	23,266	23,057	99.1
1994	22,871	22,746	99.5
1995	24,028	24,229	100.8
1996	23,510	23,650	100.6
1997	22,402	22,342	99.7
1998	24,507	24,776	101.1
1999	25,216	25,571	101.4
2000	24,180	25,019	103.5
2001	23,779	24,578	103.4
2002	23,668	24,148	102.0
2003	23,908	24,654	103.1
2004	24,347	25,717	105.6
2005	24,625	25,529	103.7
2006	24,817	26,205	105.6
2007	25,147	26,395	105.0 <sup>a</sup>

<sup>a</sup> Projected<sup>b</sup> Mean of previous three years<sup>c</sup> December of previous year

Table 3. U.S. Sow Farrowings and Pig Crop Compared to U.S. Commercial Slaughter (1,000 head), with 7-month Lag 1993 to 2007

Year	Sows Farrow	Pig Crop	Pigs/ Litter	Year	Commercial	Ratio <sup>b</sup>
					Slaughter	Slau/PigCrop
June-August			January-March			
1993	2,972	24,041	8.09	1994	22,742	94.6
1994	3,107	25,547	8.22	1995	24,224	94.8
1995	2,976	24,813	8.34	1996	23,651	95.3
1996	2,718	23,244	8.55	1997	22,308	96.1
1997	2,946	25,696	8.72	1998	24,775	96.4
1998	3,054	26,634	8.72	1999	25,579	96.0
1999	2,920	25,862	8.86	2000	25,019	96.7
2000	2,889	25,548	8.84	2001	24,578	96.2
2001	2,878	25,539	8.87	2002	24,148	94.6
2002	2,883	25,725	8.92	2003	24,654	95.8
2003	2,918	25,974	8.90	2004	25,717	99.0
2004	2,905	26,162	9.01	2005	25,529	97.6
2005	2,918	26,449	9.06	2006	26,205	99.1
2006	2,924	26,731	9.14	2007 <sup>ab</sup>	26,367	98.6
September-November			April-June			
1993	2,982	24,003	8.05	1994	22,965	95.7
1994	2,997	24,517	8.18	1995	23,644	96.5
1995	2,815	23,479	8.34	1996	22,201	94.6
1996	2,731	23,327	8.54	1997	21,831	93.6
1997	2,939	25,494	8.67	1998	23,628	92.7
1998	2,993	25,902	8.66	1999	24,288	93.8
1999	2,844	24,973	8.78	2000	23,105	92.5
2000	2,838	25,112	8.85	2001	23,280	92.7
2001	2,889	25,492	8.82	2002	24,280	95.2
2002	2,833	25,094	8.86	2003	23,922	95.3
2003	2,856	25,488	8.93	2004	24,803	97.3
2004	2,888	25,881	8.96	2005	25,028	96.7
2005	2,900	26,187	9.03	2006	24,835	94.8
2006	2,909	26,551	9.13	2007 <sup>ab</sup>	25,682	96.7
December-February			July-September			
93/94	2,885	23,368	8.10	1994	23,673	101.3
94/95	2,886	23,851	8.27	1995	23,264	97.5
95/96	2,735	23,054	8.43	1996	22,711	98.5
96/97	2,684	23,164	8.63	1997	22,679	97.9
97/98	2,929	25,480	8.70	1998	25,038	98.3
98/99	2,891	25,247	8.73	1999	24,960	98.9
99/00	2,798	24,522	8.76	2000	24,097	98.3
00/01	2,748	23,963	8.72	2001	23,635	98.6
01/02	2,835	24,857	8.77	2002	25,120	101.1
02/03	2,769	24,400	8.81	2003	24,747	101.4
03/04	2,836	25,105	8.85	2004	25,817	102.8
04/05	2,835	25,343	8.94	2005	25,515	100.7
05/06	2,840	25,656	9.03	2006	25,790	100.5
06/07	2,902	26,466	9.12	2007 <sup>ab</sup>	26,835	101.4
March-May			October-December			
1993	3,220	26,135	8.12	1993	24,574	94.0
1994	3,390	27,984	8.26	1994	26,315	94.1
1995	3,170	26,373	8.32	1995	25,197	95.5
1996	2,930	24,833	8.48	1996	23,832	96.0
1997	2,911	25,229	8.67	1997	25,143	99.7
1998	3,086	26,989	8.75	1998	27,586	102.2
1999	2,986	26,272	8.80	1999	26,723	101.7
2000	2,885	25,565	8.86	2000	25,714	100.6
2001	2,870	25,509	8.89	2001	26,470	103.8
2002	2,941	26,001	8.84	2002	26,715	102.7
2003	2,886	25,629	8.88	2003	27,608	107.7
2004	2,870	25,633	8.93	2004	27,192	106.1
2005	2,882	25,986	9.02	2005	27,485	105.8
2006	2,916	26,480	9.08	2006	27,980	105.7
2007 <sup>a</sup>	2,932	26,828	9.15	2007 <sup>ab</sup>	28,403	105.9

<sup>a</sup> Estimates

<sup>b</sup> Last entry is the mean of previous three years including Canadian live imports (not shown).

Table 4. U.S. Commercial Slaughter, Carcass Weights, and Quarterly Pork Production 1995-2007

Year	Quarter	Commercial Slaughter (1,000 head)	Carcass Weight Per Hog	Pork Production (million #'s)	Percent Change Year-Ago
1995	I	24,229	185.2	4,488	7.3
	II	23,646	185.8	4,394	3.6
	III	23,264	182.3	4,240	-2.0
	IV	25,198	186.1	4,690	-4.5
1996	I	23,650	185.6	4,389	-2.2
	II	22,201	184.9	4,104	-6.6
	III	22,711	182.4	4,143	-2.3
	IV	23,833	186.7	4,449	-5.1
1997	I	22,342	187.7	4,194	-4.4
	II	21,834	187.4	4,091	-0.3
	III	22,666	185.0	4,196	1.3
	IV	25,152	189.5	4,766	7.1
1998	I	24,776	189.2	4,688	11.8
	II	23,631	187.5	4,429	8.3
	III	25,038	184.7	4,625	10.2
	IV	27,523	188.9	5,239	9.9
1999	I	25,571	190.3	4,865	3.8
	II	24,292	190.6	4,630	4.5
	III	24,960	187.2	4,672	1.0
	IV	26,732	191.2	5,110	-2.5
2000	I	25,019	192.8	4,824	-0.8
	II	23,107	193.8	4,478	-3.3
	III	24,097	191.1	4,606	-1.4
	IV	25,714	194.8	5,010	-2.0
2001	I	24,578	195.5	4,805	-0.4
	II	23,280	195.3	4,546	1.5
	III	23,635	192.4	4,548	-1.3
	IV	26,470	197.9	5,239	4.6
2002	I	24,148	197.9	4,780	-0.5
	II	24,280	197.6	4,797	5.5
	III	25,120	192.4	4,832	6.2
	IV	26,715	196.7	5,255	0.3
2003	I	24,654	198.7	4,898	2.5
	II	23,922	198.2	4,741	-1.2
	III	24,747	194.2	4,807	-0.5
	IV	27,608	199.2	5,499	4.6
2004	I	25,717	199.5	5,130	4.7
	II	24,803	197.4	4,897	3.3
	III	25,817	195.5	5,046	5.0
	IV	27,192	199.9	5,435	-1.2
2005	I	25,529	201.2	5,136	0.1
	II	25,028	200.7	5,022	2.6
	III	25,515	195.9	4,999	-0.9
	IV	27,485	201.0	5,525	1.7
2006	I	26,205	203.1	5,321	3.6
	II	24,835	201.2	4,998	-0.5
	III	25,813	196.5	5,071	1.4
	IV <sup>p</sup>	27,980	201.1	5,627	1.8
2007	I <sup>ab</sup>	26,381	201.0	5,303	-0.3
	II <sup>a</sup>	25,682	200.1	5,139	2.8
	III <sup>a</sup>	26,835	195.7	5,252	3.6
	IV	28,403	200.6	5,698	1.3

<sup>a</sup> Projected

<sup>c</sup> Average of the two estimation methods (Table 2 and 3)

<sup>p</sup> Preliminary



Table 5. Actual and Forecast Hog Prices, Lean Carcass Prices, and Retail Pork Prices<sup>a</sup>

Year	Quarter	Barrow and Gilts 6-Mkt Price (\$/cwt)	Lean Value (Live Price/74.5 yield) (\$/carcass cwt)	Retail Pork ¢/carcass cwt
1995	I	\$38.19	\$51.26	191.6
	II	\$38.57	\$51.77	190.2
	III	\$48.32	\$64.86	195.6
	IV	\$42.86	\$57.53	201.8
1996	I	\$45.33	\$60.85	206.3
	II	\$54.84	\$73.61	214.9
	III	\$57.96	\$77.80	230.4
	IV	\$55.10	\$73.96	231.9
1997	I	\$51.06	\$68.54	231.0
	II	\$56.41	\$75.72	229.7
	III	\$54.45	\$73.09	234.5
	IV	\$43.69	\$58.64	231.0
1998	I	\$34.74	\$46.63	233.0
	II	\$39.42	\$52.91	226.9
	III	\$33.95	\$45.57	231.0
	IV	\$19.30	\$25.91	226.9
1999	I	\$28.83	\$38.70	235.8
	II	\$35.18	\$47.22	238.4
	III	\$35.70	\$47.92	246.4
	IV	\$36.29	\$48.71	245.2
2000	I	\$41.14	\$55.22	249.8
	II	\$50.43	\$67.69	257.3
	III	\$46.43	\$62.32	264.3
	IV	\$40.78	\$54.74	261.3
2001	I	\$42.83	\$57.49	262.5
	II	\$52.05	\$69.87	267.0
	III	\$51.05	\$68.52	275.0
	IV	\$37.30	\$50.07	273.0
2002	I	\$39.43	\$52.93	270.9
	II	\$34.99	\$46.97	267.7
	III	\$33.86	\$45.45	264.1
	IV	\$31.34	\$42.07	260.2
2003	I	\$35.38	\$47.49	260.9
	II	\$42.64	\$57.23	262.2
	III	\$42.90	\$57.58	269.8
	IV	\$36.89	\$49.52	270.2
2004	I	\$44.18	\$59.30	269.3
	II	\$54.91	\$73.70	276.8
	III	\$56.58	\$75.95	287.7
	IV	\$54.35	\$72.95	282.8
2005	I	\$52.24	\$70.12	282.9
	II	\$52.09	\$69.92	286.7
	III	\$50.51	\$67.80	282.9
	IV	\$45.54	\$61.13	278.3
2006	I	\$42.63	\$57.22	277.4
	II	\$48.45	\$65.03	278.7
	III	\$51.83	\$69.57	283.6
	IV <sup>p</sup>	\$46.43	\$62.32	282.9
2007	I <sup>a</sup>	\$45.86	\$61.56	
	II <sup>a</sup>	\$49.99	\$67.10	
	III <sup>a</sup>	\$49.72	\$66.74	
	IV <sup>a</sup>	\$46.46	\$62.36	

<sup>a</sup> Predicted prices for 2007 (I) forward are made with two equations with the results averaged.

<sup>p</sup> Preliminary