

**Costs to Produce Hogs in Illinois—2007**

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Higher total costs mainly due to higher feed costs and lower total returns in 2007 resulted in Illinois hog producer profits to decrease by \$9.72 per hundredweight produced compared to 2006. The 2007 profit margins were the lowest since 1998. They were the first time profit margins have been negative since 2003. Total returns in 2007 averaged \$40.73 per hundredweight produced compared to \$43.32 in 2006. Total production costs for the farrow-to-finish hog enterprises exceeded total production returns by \$8.51 per hundredweight produced in 2007. Feed costs increased by \$5.66 per hundredweight produced while nonfeed costs increased by \$1.47 per hundredweight. Feed costs were the highest since 1997. The 2006 return was \$1.21. For the five-year period, 2003 through 2007, total returns exceeded production costs by \$2.67 per hundredweight. Three of the past five years show a positive return for farrow-to-finish enterprises. The 2004 and 2005 net returns were some of the highest on record for a back to back two-year period.

Data for this report is summarized by University of Illinois agricultural economists in cooperation with the Illinois Farm Business Farm Management (FBFM) Association. Individual records tabulated were from farmers enrolled in the FBFM record keeping

and business analysis program.

The total cost of production in 2007 averaged \$49.24 per hundredweight of pork produced, compared with \$42.11 in 2006 (Table 1). Feed costs made up 60 percent of total costs, or \$29.64 in 2007, as compared to \$23.98 in 2006. Nonfeed costs accounted for \$19.60 in 2007, an increase of \$1.47 from 2006. With total returns (on an accrual basis) averaging \$40.73 per 100 pounds of pork, the average producers in this group was short of covering total costs by \$8.51 per 100 pounds produced. The 2006 return above all costs was \$1.21.

The records for the hog enterprises reported in Table 1 were divided into groups according to the number of litters produced. The group farrowing fewer than 500 litters for the year averaged 250 litters. The group farrowing 500 or more litters averaged 1,056 litters.

Total cost of production per 100 pounds of pork for the two groups was slightly higher for the small enterprises. The larger enterprises averaged \$48.88 per hundredweight produced and the smaller enterprises \$49.46. The most significant cost difference between the two groups of farms was in feed cost per 100 pounds of pork produced. Larger enterprises had a \$2.09

lower feed cost than smaller ones, \$28.35 compared with \$30.44. The \$3 per ton lower price paid for commercial feeds by the larger enterprises and the 34 fewer pounds of feed that it took to produce 100 pounds of pork accounted for the lower feed cost. Except for the interest charge on capital, the larger enterprises had higher nonfeed costs than the smaller enterprises. The number of pigs weaned per litter averaged 8.6 for the large enterprises and 9.1 for the small ones. The rate of death loss was slightly better for the smaller enterprises.

The returns above all costs were a negative \$6.55 per 100 pounds of pork produced for the larger enterprises and a negative \$9.73 for the small ones, a difference of \$3.18. Total returns were \$2.60 higher per 100 pounds of pork produced for the larger enterprises as compared to the small enterprises. Management practices and production technology—such as the choice of building systems, method of transporting hogs to market, and on-farm versus off-farm systems for feed processing—may have affected the individual cost items reported in Table 1. However, the return above all costs should accurately reflect the relative profitability of the two groups of hog enterprises.

The cost data reported in Table 1 have been divided into two categories: "Cash costs" and "Other costs." This classification of production costs is important when making short-run management decisions concerning the level (volume) of production, particularly during periods of low prices.

The average cash costs of production in 2007 ranged from about \$38.98 to \$40.02 per 100 pounds of pork produced (Table 1). Feed is included as a cash cost, although for most producers a major share of the grains are farm-raised. The readily available alternative cash market for grain makes the farm-raised

feed the same as cash.

The "Other costs" category includes depreciation, labor, and an interest charge on all capital, although on most farms part of the labor and the interest charge are cash costs. The proportion of labor that is hired largely depends on the farm's size. A one-man farm does not hire much labor, while a four-man farm may hire a major share of the labor.

The share of the interest charge that is a cash expenditure depends upon the owner's equity in the business. It could range from zero to nearly 100 percent. On most farms, some share of the interest charge will be paid in cash.

Current feed costs can be estimated by using Table 2 as a reference. For example, with the price of corn at \$3.50 per bushel and the price of supplement at \$18 per hundredweight, the cost of feed would be \$30.51 per hundredweight of pork produced. Estimating the 2008 average annual price for corn at \$4.60 per bushel and supplement at \$21.50 per 100 pounds, the average feed cost in 2008 would be \$38.33 per hundredweight of pork produced.

Producers should evaluate expected returns for more than one year before making new investments in hog production facilities. For 2003 to 2007, the return above all costs except management averaged a \$2.67 per 100 pounds of pork produced for all enterprises included in the study. The returns averaged \$2.28 per 100 pounds of pork produced for the small enterprises and \$3.45 for the large ones (Table 3). The difficult question confronting producers is if the industry will be profitable in the upcoming five years. Corn and soybean prices have dropped significantly from their highs resulting in lower feed costs. But even with the drop in prices, feed costs are still above historic levels. It looks like producers

are responding to negative profit margins as they are cutting back on the size of the breeding herd. Pork production is projected to decrease by 1 to 2 percent in 2009. This will be supportive for market hog prices. The first three quarters of 2008 were unprofitable for hog producers due to high feed costs. The fourth quarter is also expected to be unprofitable. Hog producers will most likely experience one of the most unprofitable years ever in 2008 due to the high feed costs. With 2009 market hog prices expected to average in the mid \$50 range, profits might return to the industry depending on the level of corn and soybean prices. In the long run, the amount of contraction or expansion, the strength of consumer demand for pork, level of exports, and the availability of reasonably priced corn and protein supplements, will largely determine the profitability of hog production during the next five years.

Producers in the high one-third group in terms of efficiency earned an average return above all costs of \$7.00 per hundredweight of pork produced for the 2003 to 2007 period (Table 3). The average for all producers during that period was \$2.67 per hundredweight produced, or \$4.33 less than that received by the high one-third group.

Table 4 provides an overview of the costs and returns for the farrow-to-finish hog enterprise from 2003 through 2007. It also shows the changes in three key production factors during that period—feed conversion, pigs weaned per litter and death loss. Feed conversion has been relatively stable during that time period.

Table 5 shows the effect of production efficiency on net hog returns. The high-efficiency hog producer will have more money for debt servicing, improved family living, and reinvestment than the average or below-average producer.

The key lesson to be learned from Table 5 is that every hog producer should determine the level of production efficiency in their operation so that they can realistically evaluate the potential for profit and prospects for staying in business. It is especially important for producers who are considering expansion and for potential newcomers to the business to budget carefully by using reasonable projections of input requirements and the efficiency level that can be maintained.

Table 6 provides a summary of the quarterly United States crop reports for sows farrowing. The first two entries in each block are intentions, the third is the final number. The percent change from the preceding year is also shown.

Table 7 shows the quarterly profits or losses to hog producers from 2002 through 2008. The fourth quarter of 2008 is an estimate. Hog prices are expected to average about \$49.50 per hundredweight in 2008. Feed costs are expected to average about \$38.75 per hundredweight and nonfeed costs at \$19.70. Total costs of production would be \$58.45 per hundredweight, or above the average price received.

Table 1. Costs and returns for the farrow-to-finish hog enterprise in Illinois by size of enterprise, 2007

	<u>Average number of litters per year</u>			
	All	Under 500	500 or more	
Number of farms .....	13	8	5	
Average per farm				
Number of litters .....	560	250	1,056	
Pounds of pork per litter .....	2,316	2,389	2,198	
Return per \$100 of feed fed .....	\$138	\$131	\$149	
Returns above feed cost per litter .....	\$255	\$222	\$307	
Pigs weaned per litter.....	8.9	9.1	8.6	
Death loss: percent of weight produced.....	2.1	1.9	2.5	
Pounds of feed per hundredweight produced				
Farm grains .....	258	268	242	
Commercial feeds .....	<u>80</u>	<u>83</u>	<u>75</u>	
Total concentrates .....	338	351	317	
Cost per 100 lb of commercial feeds .....	\$17.38	\$17.44	\$17.28	
Cost per 100 lb of concentrates.....	\$8.81	\$8.90	\$8.66	
Price received per hundredweight of pork sold ..	\$45.32	(46.14) <sup>a</sup>	\$44.49	\$46.66
<i>per hundredweight of pork produced</i>				
Total returns .....	\$40.73	(43.32) <sup>a</sup>	\$39.73	\$42.33
Cash Costs				
Feed.....	\$29.64	(23.98) <sup>a</sup>	\$30.44	\$28.35
Operating expenses				
Maintenance and power <sup>b</sup> .....	5.32	5.10	5.68	
Livestock expense.....	3.34	3.13	3.68	
Insurance, taxes, and overhead .....	<u>1.32</u>	<u>1.35</u>	<u>1.27</u>	
Total operating expenses.....	\$9.98	\$9.58	\$10.63	
Total cash costs .....	\$39.62	(33.15) <sup>a</sup>	\$40.02	\$38.98
Other costs				
Depreciation <sup>c</sup> .....	\$ 1.27	\$ 1.19	\$1.40	
Labor .....	5.13	4.82	5.62	
Interest charge on all capital .....	<u>3.22</u>	<u>3.43</u>	<u>2.88</u>	
Total other costs .....	\$9.62	(8.96) <sup>a</sup>	\$9.44	\$9.90
Total nonfeed costs .....	\$19.60	(18.13) <sup>a</sup>	\$19.02	\$20.53
Total all costs .....	\$49.24	(42.11) <sup>a</sup>	\$49.46	\$48.88
Return above all costs <sup>d</sup> .....	\$ -8.51	(1.21) <sup>a</sup>	\$ -9.73	\$ -6.55

<sup>a</sup> Figures in parentheses are for 2006.

<sup>b</sup> Includes utilities; machinery, equipment, and building repairs; machine hire; and fuel.

<sup>c</sup> Includes machinery, equipment and building depreciation.

<sup>d</sup> No charge was made for management.

**Note:** The average price of corn in 2007 was \$3.42 per bushel.

**Source:** Department of Agricultural and Consumer Economics and the Illinois FBFM Association.

Table 2. Feed cost for hogs per hundredweight of gain<sup>a</sup>

Price of supplement per hundredweight	Price of corn per bushel				
	\$2.50	\$3.00	\$3.50	\$4.00	\$4.50
\$12.00.....	\$21.09	\$23.34	\$25.59	\$27.84	\$30.09
14.00.....	22.73	24.98	27.23	29.48	31.73
16.00.....	24.37	26.62	28.87	31.12	33.37
18.00.....	26.01	28.26	30.51	32.76	35.01
20.00.....	27.65	29.90	32.15	34.40	36.65
22.00.....	29.29	31.54	33.79	36.04	38.29

<sup>a</sup> Sow and litter, farrow-to-finish. The feed conversion is based on data from Illinois Farm Business Farm Management Association records, and was set at 4.5 bushels of corn and 82 pounds of protein supplement per hundredweight of pork produced.

Table 3. Returns above all costs by size of enterprise and efficiency, 2003 through 2007, and five-year averages, 1988-2007<sup>d</sup>

Year	Average number of litters per year <sup>b</sup>			
	All	Under 500	500 or more	High 1/3 Efficiency
	<i>per hundredweight of pork produced</i>			
2003.....	-0.78	-2.53	2.28	3.51
2004.....	13.58	14.56	12.48	17.03
2005.....	7.83	8.11	7.27	11.60
2006.....	1.21	0.98	1.79	7.50
2007.....	-8.51	-9.73	- 6.55	- 4.65
Averages				
1988-1992 .....	\$2.21	\$0.39	\$3.17	\$6.66
1993-1997 .....	0.69	-0.32	1.61	5.69
1998-2002 .....	-1.92	-3.42	-0.75	2.27
2003-2007	2.67	2.28	3.45	7.00

<sup>a</sup> No charge was made for management.

<sup>b</sup> Before 2002, size was based on over and under 350 litters, before 1995, size was based on over and under 250 litters.

Table 4. *Costs and Returns Per Hundredweight, Illinois Farrow-to-Finish Hog Enterprises, 2003-2007*

	2007	2006	2005	2004	2003
Total returns .....	\$40.73	\$43.32	\$46.25	\$54.50	\$38.15
Feed costs.....	<u>\$29.64</u>	<u>\$23.98</u>	<u>\$21.61</u>	<u>\$25.05</u>	<u>\$23.52</u>
Returns above feed costs.....	\$11.09	\$19.34	\$24.64	\$29.45	\$14.63
Total nonfeed costs .....	\$19.60	\$18.13	\$16.81	\$15.87	\$15.41
Total all costs .....	\$49.24	\$42.11	\$38.42	\$40.92	\$38.93
Returns above all costs .....	\$ -8.51	\$ 1.21	\$ 7.83	\$13.58	\$-0.78
Pounds of feed per cwt. produced					
Farm grains .....	258	247	255	248	255
Commercial feeds .....	<u>80</u>	<u>84</u>	<u>83</u>	<u>84</u>	<u>78</u>
Total concentrates .....	338	331	338	332	333
Price of corn, per bushel .....	\$3.42	\$2.41	\$2.02	\$2.49	\$2.30
Pigs weaned per litter.....	8.9	8.9	8.9	8.7	8.4
Death loss: percent of weight produced.....	2.1	2.9	2.6	2.1	2.8

Table 5. *Farrow-to-finish enterprise summary by level of efficiency, 2007*

	Level of Efficiency			
	All Farms	Lo 1/3	Hi 1/3	Hi 1/5
Number of litters farrowed.....	560	282	950	844
Pounds of pork per litter .....	2,316	1,866	2,328	2,406
Returns above feed cost per litter.....	\$255	\$ 61	\$348	\$408
Pigs weaned per litter.....	8.9	8.7	9.3	9.3
Death loss, percent of weight produced .....	2.1	1.8	2.4	3.1
Total return.....	\$40.73	\$35.08	\$42.96	\$44.23
Feed cost per 100 pounds produced .....	<u>\$29.64</u>	<u>\$31.82</u>	<u>\$28.01</u>	<u>\$27.26</u>
Returns above feed costs.....	\$11.09	\$3.26	\$14.95	\$16.97
Pound of feed per 100 pounds produced				
Farm grain.....	258	311	230	217
Commercial feeds .....	<u>80</u>	<u>78</u>	<u>76</u>	<u>79</u>
TOTAL.....	338	389	306	296
Cost per 100 lbs. commercial feeds .....	\$17.38	\$18.46	\$18.14	\$17.32
Cost per 100 lbs. concentrates .....	\$8.81	\$9.04	\$9.01	\$8.96

*Table 6. Number of sows farrowing, United States, and percent change from preceding year*

Date of Hogs and Pigs Report	March-May	June-August	September-November	December-February
Sows to Farrow (000), % Change				
December '03	2846 -1		2856 +1	2806 +1
March '04	2852 -1	2851 -2		2836 +2
June '04	2870 -1	2867 -1	2837 NC	
September '04		2905 NC	2865 NC	2855 +1
December '04	2868 NC		2888 +1	2855 +1
March '05	2870 NC	2880 -1		2835 NC
June '05	2882 NC	2902 NC	2880 NC	
September '05		2918 NC	2888 NC	2875 +1
December '05	2890 NC		2900 NC	2877 +1
March '06	2896 +1	2923 NC		2841 NC
June '06	2927 +2	2922 NC	2924 +1	
September '06		2912 NC	2925 +1	2902 +2
December '06	2932 +1		2949 +2	2902 +2
March '07	2913 NC	2917 NC		2905 +2
June '07	3033 +4	2958 +2	2960 NC	
September '07		3132 +8	2964 +1	2943 +1
December '07	3037 +2		3180 +8	2976 +2
March '08	3047 NC	3037 -2		3071 +6
June '08	3092 +2	3070 -2	3052 -4	
September '08		3076 -2	3006 -5	2983 -3
December '08				
March '09				
June '09				

*Table 7. Hog production costs and profits by quarters, per 100 pounds produced<sup>1</sup>*

	<u>2002</u>				<u>2003</u>			
<u>PRODUCTION COSTS</u>	1	2	3	4	1	2	3	4
Corn and grain	\$9.35	\$9.40	\$11.28	\$11.05	\$10.62	\$10.85	\$9.81	\$10.04
Protein	11.05	11.48	12.11	11.69	11.15	11.89	12.22	13.45
Non-feed items	<u>18.00</u>	<u>17.00</u>	<u>16.00</u>	<u>15.00</u>	<u>15.25</u>	<u>15.50</u>	<u>15.50</u>	<u>15.50</u>
TOTAL	\$38.40	\$37.88	\$39.39	\$37.74	\$37.02	\$38.24	\$37.53	\$38.99
6-MARKET PRICE	\$39.43	\$34.99	\$33.86	\$31.39	\$35.38	\$42.64	\$42.90	\$36.88
Profit or loss (+or-)	\$1.03	\$-2.89	\$-5.53	\$-6.35	\$-1.64	\$4.40	\$5.37	\$-2.11
	<u>2004</u>				<u>2005</u>			
<u>PRODUCTION COSTS</u>	1	2	3	4	1	2	3	4
Corn and grain	\$11.70	\$13.14	\$10.58	\$9.72	\$9.50	\$9.41	\$9.27	\$8.55
Protein	14.97	15.99	12.92	10.25	11.28	12.51	12.30	11.28
Non-feed items	<u>15.70</u>	<u>15.85</u>	<u>16.00</u>	<u>16.00</u>	<u>16.50</u>	<u>16.80</u>	<u>17.00</u>	<u>17.00</u>
TOTAL	\$42.37	\$44.98	\$39.50	\$35.97	\$37.28	\$38.72	\$38.57	\$36.83
5-MARKET PRICE	\$44.18	\$54.91	\$56.58	\$54.35	\$52.24	\$52.09	\$50.51	\$45.54
Profit or loss (+or-)	\$1.81	\$9.93	\$17.08	\$18.38	\$14.96	\$13.37	\$11.94	\$8.71
	<u>2006</u>				<u>2007</u>			
<u>PRODUCTION COSTS</u>	1	2	3	4	1	2	3	4
Corn and grain	\$9.41	\$10.13	\$9.95	\$12.96	\$14.94	\$15.98	\$14.54	\$15.84
Protein	11.48	11.69	11.89	12.10	12.30	12.51	13.74	15.79
Non-feed items	<u>17.50</u>	<u>18.00</u>	<u>18.00</u>	<u>18.25</u>	<u>19.25</u>	<u>19.50</u>	<u>19.50</u>	<u>19.75</u>
TOTAL	\$38.39	\$39.82	\$39.84	\$43.31	\$46.49	\$47.99	\$47.78	\$51.38
5-MARKET PRICE	\$42.63	\$48.45	\$51.83	\$46.13	\$46.04	\$52.55	\$50.34	\$39.44
Profit or loss (+or-)	\$4.24	\$8.63	\$11.99	\$2.82	\$-0.45	\$4.56	\$2.56	\$-11.94
	<u>2008 (estimated)</u>				<u>2009</u>			
<u>PRODUCTION COSTS</u>	1	2	3	4	1	2	3	4
Corn and grain	\$19.71	\$24.17	\$23.40	\$16.52				
Protein	17.84	18.04	19.48	15.79				
Non-feed items	<u>19.75</u>	<u>19.75</u>	<u>19.75</u>	<u>19.50</u>				
TOTAL	\$57.30	\$61.96	\$62.63	\$51.81				
5-MARKET PRICE	\$39.64	\$52.51	\$58.00	\$48.00				
Profit or loss (+or-)	\$-17.66	\$-9.45	\$-4.63	\$-3.81				

<sup>1</sup>Estimates are made, using Illinois average farm market price of corn and the average price reported for commercial hog supplement for each quarter. The feed requirements were 4.9 bushels of corn and 85 pounds of commercial feeds for 1998 – 1999 and 4.7 bushels of corn and 85 pounds of commercial feed for 2000 – 2002. Since 2003, the requirements were 4.5 bushels of corn and 82 pounds of commercial feed.