

Impact of Lower Corn Prices on Swine Feed Costs

By Michael Langemeier

Indiana corn prices during the first quarter of this year were on average approximately \$6.60 per bushel. The most recent WASDE report indicates that corn prices could be substantially lower for the upcoming crop. Using the *iFarm* price distribution tool in mid-May (i.e., May 19), corn prices for the December futures contract at the 25th percentile, the 50th percentile, and the 75th percentile were \$4.39, \$4.98, and \$5.65, respectively. The \$4.39 price (\$5.65 price) indicates that there is a 25 percent chance that the corn price will be below \$4.39 (above \$5.65) per bushel at the expiration of the December contract. Obviously, lower expected corn prices will translate into lower expected feed costs later this year. This article examines trends in feed costs as well as the impact of corn and soybean meal prices on feed costs for farrow-to-finish and swine finishing operations.

It is important to note that the swine finishing enterprise represented in this article assumes the finishing of an early-weaned pig. The rations for the farrow-to-finish and swine finishing enterprises consist of corn, soybean meal, dry distillers' grain, and supplements. Corn prices represent averages for Indiana as reported by USDA-NASS. Soybean meal and distillers' grain prices are obtained from Feed Outlook, published monthly by USDA-ERS. Information from Agricultural Prices, a monthly USDA-NASS publication, was used to compute supplement prices. Mid-May futures prices for corn and soybean meal were used to project feed indices through for 2023. Feed cost indices are reported on a closeout month rather than a placement month basis.

CORN AND SOYBEAN MEAL PRICES

Figures 1 and 2 report monthly corn and soybean meal prices from January 2007 to March 2023. Corn price averaged \$4.70 per bushel from 2007 to the current month. Soybean meal price averaged \$361 per ton from 2007 to the current month. Current corn and soybean meal prices are well above the long-run average. However, corn prices are expected to drop approximately \$2 per bushel from the first quarter to the fourth quarter of 2023, and soybean meal prices are expected to drop approximately \$75 per ton. The impact of these declines in corn and soybean meal prices are discussed below.

Figure 1. Monthly Indiana Corn Prices, 2007 to 2023

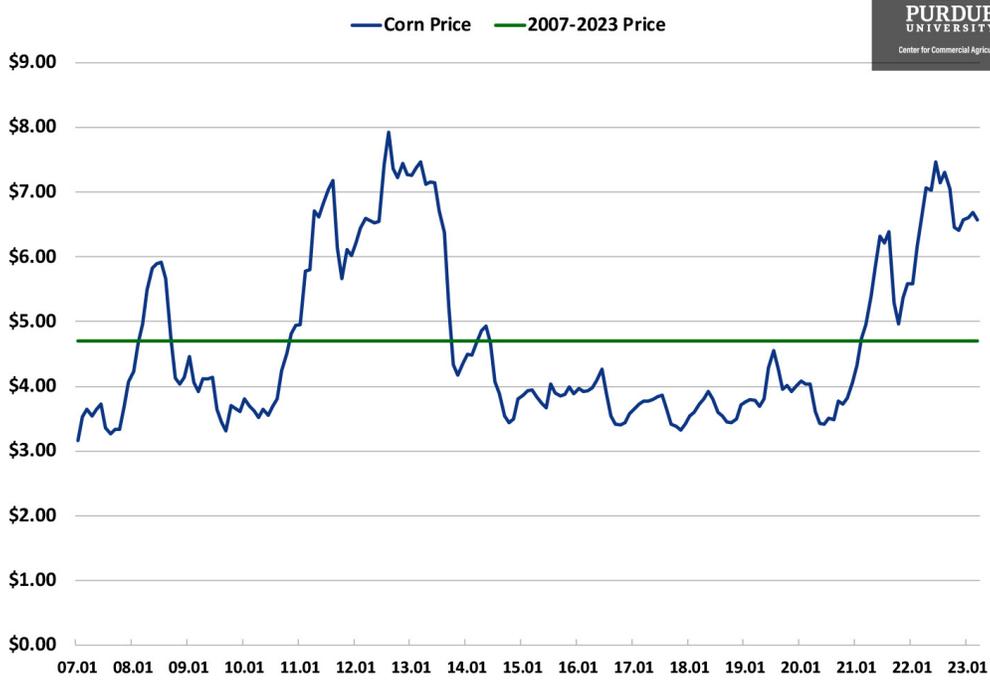
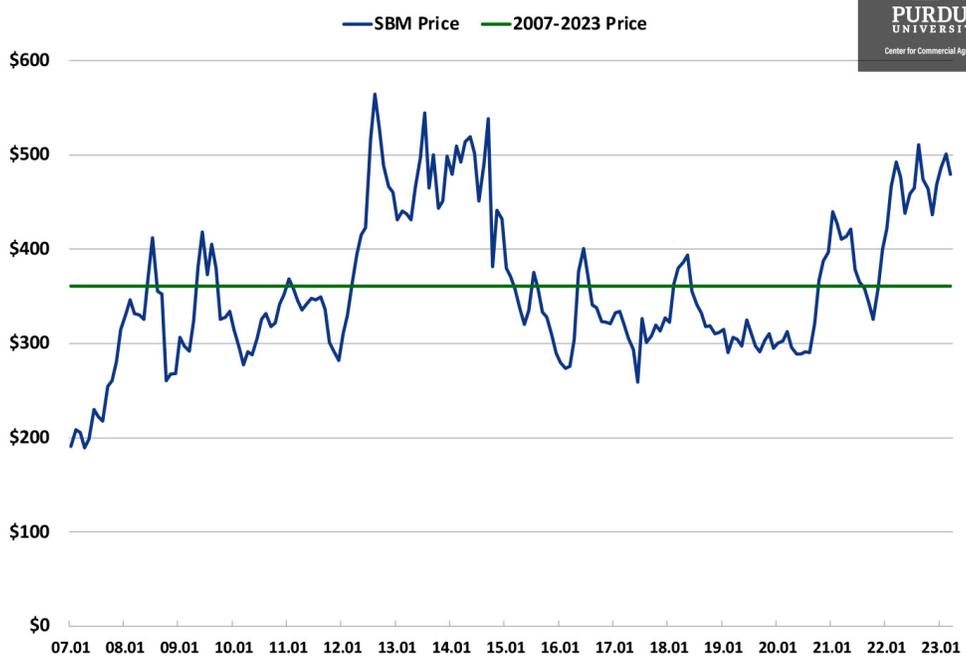
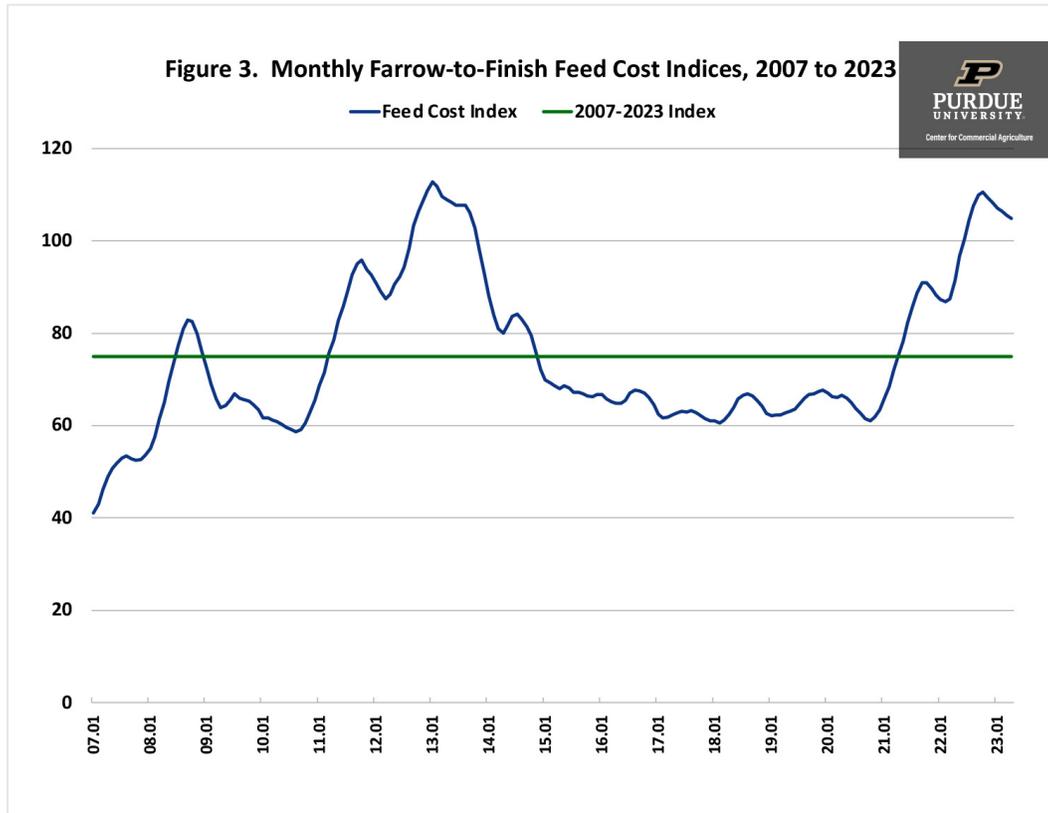


Figure 2. Monthly Central Illinois SBM Prices, 2007 to 2023

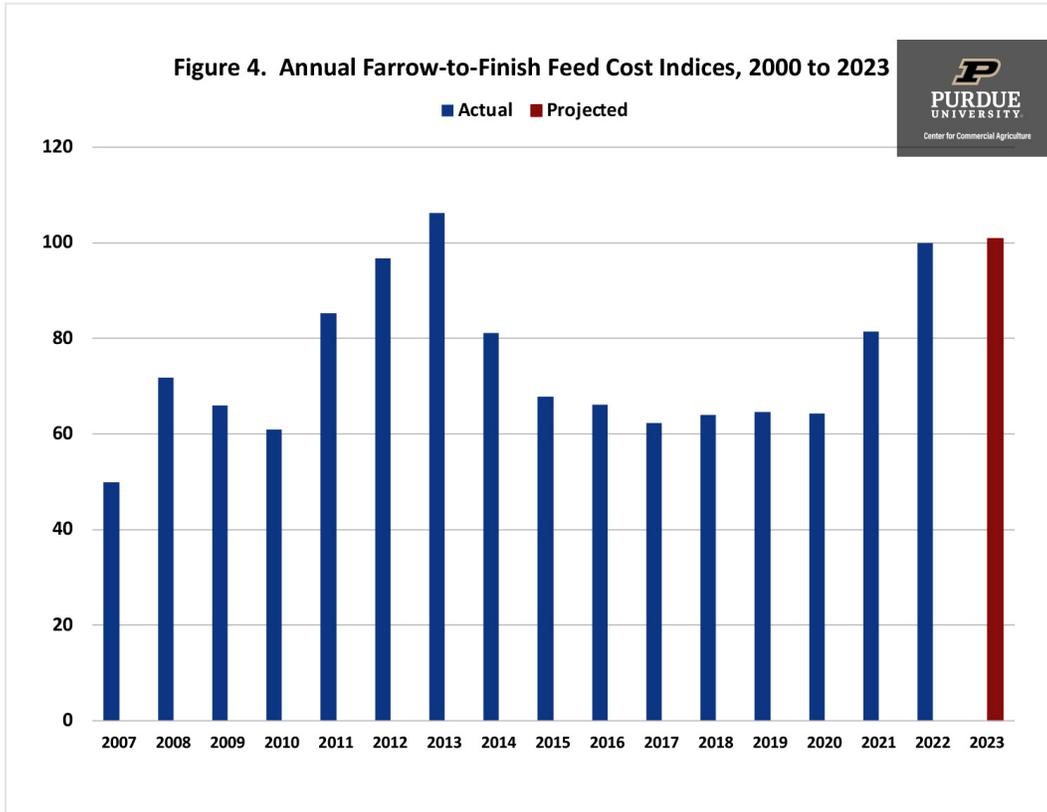


FARROW-TO-FINISH ENTERPRISE

Figure 3 presents monthly farrow-to-finish feed cost indices from January 2007 to April 2023. The latest full year of indices, 2022, has an index of 100 so all indices outside of this year are expressed in relative terms. The average feed cost index since 2007 was 74.9. The feed cost index for the first quarter of 2023 was 106.3. The feed cost index is projected to decline from 104.8 in the second quarter to 101.1 and 91.2 in the third and fourth quarters, respectively.

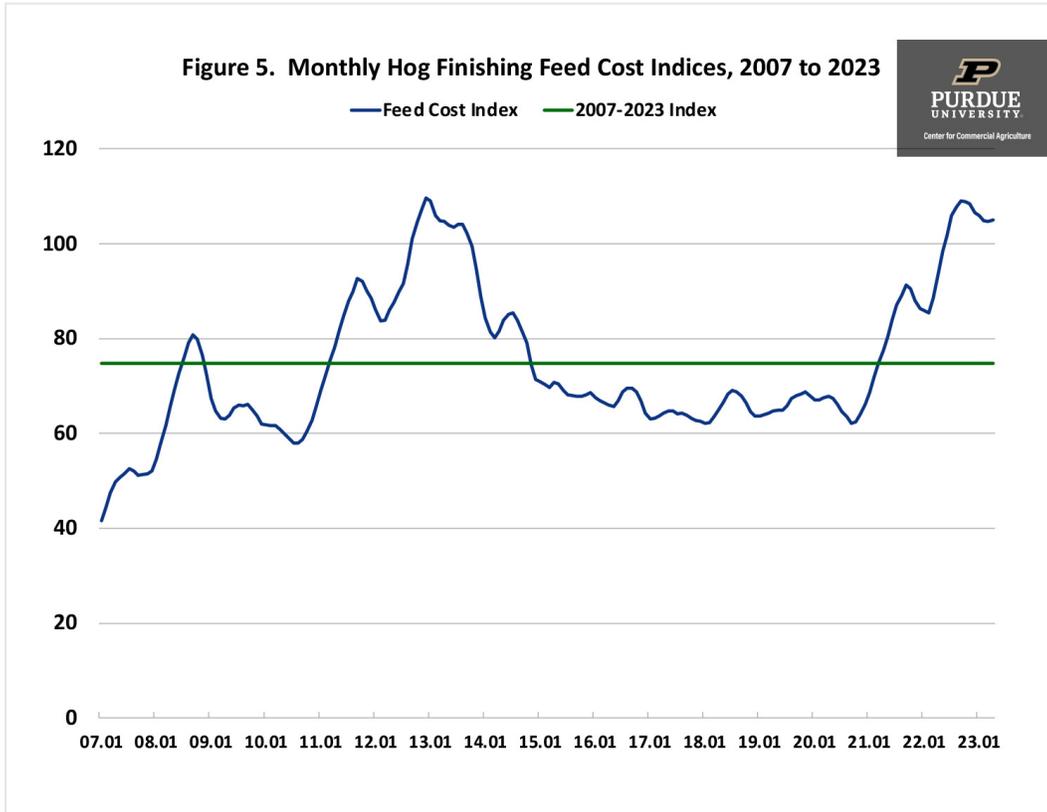


Annual farrow-to-finish feed cost indices are presented in figure 4. The projection for 2023 used corn and soybean meal futures prices in mid-May. The projected feed cost index for 2023 is 100.8, which indicates that feed costs in 2023 are expected to be 0.8 percent above those experienced in 2022 or 24.0 percent above the average feed costs in 2021. Why is the average feed cost index for 2023 above the average for 2022? To answer this question, it is important to note that the large drop in corn prices is not expected to happen until fall harvest. In other words, corn prices will still be relatively high for the first 8 months of 2023.

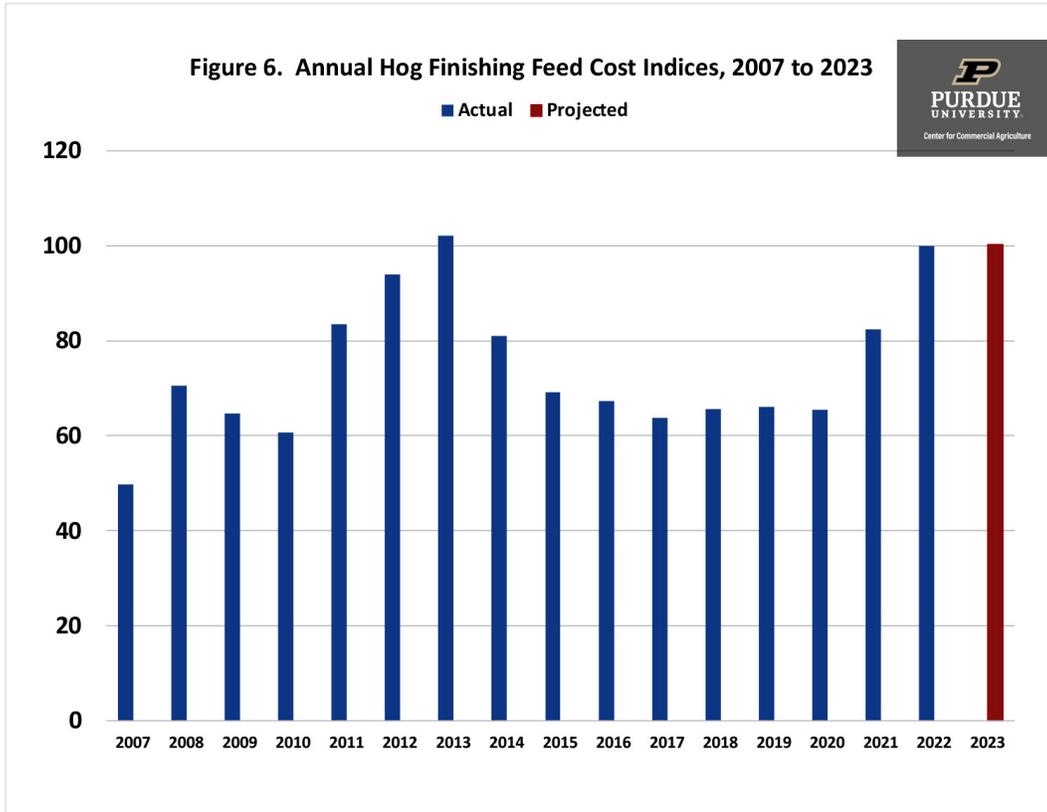


SWINE FINISHING ENTERPRISE

Figure 5 illustrates monthly swine finishing feed cost indices for the January 2007 to April 2023 period. The latest full year of indices, 2022, has an index of 100 so all indices outside of this year are expressed in relative terms. The average index for the period beginning in 2007 was 74.8. The average index for 2023 is projected to be 100.2. Similar to the feed cost index for farrow-to-finish production, the swine finishing feed cost index for 2023 is expected to peak in the first quarter (i.e., index of 105.2) and drop throughout the rest of the year. The expected index for the third and fourth quarters of 2023 are 100.1 and 90.7, respectively.



Annual swine finishing feed cost indices are presented in figure 6. The projection for 2023 used corn and soybean meal futures prices in mid-May. The projected feed cost index is 100.2, so on average feed costs in 2023 are expected to be similar to the average for 2022. Compared to 2021, feed costs in 2023 are expected to 21.5 percent higher.



Using the *iFarm* price distribution tool, the probability of the corn futures price for December 2023 being below (above) \$4.39 (\$5.65) was 25 percent on May 19. This represents a spread of approximately \$1.25 per bushel. The median expected corn price was \$4.98 per bushel. Feed costs are very sensitive to changes in corn and soybean meal prices. Regression analysis was used to examine the relationship between swine finishing feed cost, and corn and soybean meal prices during the January 2007 to December 2022 time period. Results are as follows: each 0.10 per bushel increase in corn prices increases feed cost per cwt. by \$0.43, and each \$10 per ton increase in soybean meal prices increases feed cost per cwt. by \$0.36. Obviously, a \$0.50 increase or decrease in corn price would have a large impact on feed cost per cwt.

Current feed cost is approximately \$50.50 per cwt. Table 1 presents feed cost per cwt. for a range of likely corn and soybean prices in the fourth quarter of this year. Corn prices range from \$4.50 to \$5.50 per bushel and soybean meal prices range from \$350 to \$450 in the table. At the lower range of prices, feed cost per cwt. would be approximately \$35. At the higher range of prices, feed cost per cwt. would be approximately \$43.

Table 1. Sensitivity of Swine Finishing Feed Cost to Changes in Corn and Soybean Prices.

		Soybean Meal Price				
		350	375	400	425	450
Corn Price	4.50	34.97	35.87	36.77	37.67	38.56
	4.75	36.04	36.93	37.83	38.73	39.63
	5.00	37.10	38.00	38.89	39.79	40.69
	5.25	38.16	39.06	39.96	40.85	41.75
	5.50	39.22	40.12	41.02	41.92	42.81

CONCLUSIONS

This article discussed recent trends in feed costs for farrow-to-finish and swine finishing enterprises, and provided projections for 2023. Average feed costs in 2023 are expected to be similar to the 2022 average. However, current projections suggest a drop in feed costs from the first to the fourth quarter of this year of approximately 14 percent for both farrow-to-finish and swine finishing enterprises. Current projections for the fourth quarter of this year use corn prices ranging from \$4.75 to \$5.00 per bushel, and soybean meal prices ranging from \$375 to \$400 per ton. Corn and soybean prices will be determined by summer weather as well as other supply and demand factors. This article also examined the impact of changes in corn and soybean meal prices on swine finishing feed cost. Each \$0.10 per bushel change in corn price, changes feed cost by \$0.43 per cwt. Similarly, each \$10 per ton change in soybean meal price, changes feed cost by \$0.36 per cwt.

REFERENCES

2023 [iFarm Price Distribution Tool](#), University of Illinois, accessed on May 19, 2023.

USDA-NASS. [Quick Stats](#), accessed on May 19, 2023.