

Costs to Produce Milk in Illinois—2020

Bradley L. Zwilling
Illinois FBFM Association and
Department of Agricultural and Consumer Economics
University of Illinois at Urbana-Champaign
December 2021

Lower nonfeed costs coupled with lower milk prices still resulted in continued negative economic returns for Illinois dairy producers in 2020, according to figures summarized by the Illinois Farm Business Farm Management Association. The average net price received per 100 pounds of milk was \$18.10, which was less than total economic costs of \$21.58. The price received for milk in 2020 was 62 cents lower than 2019. On a per cow basis, total returns from milk were \$4,568 compared to the total cost to produce milk of \$5,405 per cow. Total returns from milk per cow increased from 2019. The net returns per cow in 2020 were a negative \$836. Total returns have exceeded total economic costs only once out of the last ten years.

A detailed breakdown by herd size of 2020 milk production costs and returns for dairy farms is shown in Table 1. Farms included had no other livestock, with all costs accounted for either in crops or in the dairy enterprise. Total costs for the dairy enterprise were reduced by income from sales of dairy animals or from an increase in inventory in pounds of beef produced during the year. The value of the added pounds was figured at the average price received for all weights of dairy animals sold in the past five years. The residual costs—94 percent of the total enterprise costs—were the net cost of producing milk. The feed cost

includes on-the-farm grains evaluated at average Illinois market prices for the year, with corn at \$3.50 per bushel and oats at \$2.85. Commercial feeds were listed at actual cost, hay and silage at farm values, and pasture at 40 cents per animal per pasture day.

Milk production per cow for all herds averaged 25,303 pounds. The average was 1,285 pounds more per cow than in 2019. Herds with more than 80 cows produced milk at a lower cost than herds with less than 80 animals when looking at per cow numbers. Total costs for each 100 pounds of milk produced were \$5.11 higher for the smaller herds. Feed costs were \$5.18 more, while nonfeed costs were seven cents less per 100 pounds produced for the smaller herds. The trend in total costs and returns per cow for all herds is given from 2017 to 2020 (Table 2) and from 2011 to 2020 (Figure 1). When cash and noncash costs are figured, the profit margin (return above all cost) decreased— from a negative \$602 in 2019 to negative \$836 per cow in 2020. The last five-year returns above all costs have averaged a negative \$537 per cow. During this period, returns above all costs per cow have varied from negative \$60 in 2017 to negative \$836 in 2020. In Figure 1, labor and interest charges are included in total costs only. Most dairy producers will incur hired labor and cash interest expense

and would include them as cash operating costs.

The 2020 returns were 86 cents per 100 pounds produced less than the 2019 returns. The average net price received for milk was \$18.10 per 100 pounds. This is 62 cents per 100 pounds or three percent lower than the average price received in 2019. Based on 25,303 pounds of milk produced per cow, this decrease in price decreased total returns per cow by \$156. The average net price received for milk for the last five-year period is \$17.64 per hundred pounds. Dairy assistance and Coronavirus Food Assistance Program (CFAP) payments from the Farm Service Agency and patronage returns related to the dairy enterprise would add about \$2.40 per 100 pounds of milk produced to returns in 2020.

While the price received decreased, feed costs increased and nonfeed costs per 100 pounds of milk produced decreased. Feed costs in 2020 averaged \$11.64 per 100 pounds of milk produced as compared to \$11.18 in 2019. Feed costs were at their highest level ever in 2012. Feed costs have averaged \$10.13 the last five years. The 2020 feed costs were \$1.51 above the last five-year average. Feed costs were about 54 percent of the total economic cost to produce milk. Nonfeed costs per 100 pounds of milk produced were \$9.94 in 2020 compared to \$10.16 in 2019. Total nonfeed costs were the highest recorded in 2014.

Along with producing milk, dairy enterprises also produce beef. The average pounds of beef produced per cow in 2020 was 674 pounds. The average price received per 100 pounds sold was \$104.60. The last five-year average price received for beef has been \$104.74 per 100 pounds sold.

2021 is projected to be about the same as 2020 and will not exceed economic costs

resulting in continued negative profit margins for dairy producers. However, 2022 is projected to have much higher milk prices and lower feed cost leading to projected positive economic returns in 2022. The average milk price for 2021 is projected to be about one percent less or about 10 cents per hundredweight lower than the average for 2020. Higher milk production and continued uncertainties in transportation will lead to lower prices in 2021. United States milk production is expected to increase about one percent in 2021. 2022 projections from the United States Department of Agriculture show milk production increasing one percent from 2021 and milk prices increasing 12 percent from 2021 estimates.

While milk prices decrease for 2021, feed costs for 2021 are expected to increase due to higher corn and soybean. Feed costs per 100 pounds of milk produced are projected to average about \$13.55 using prices of \$5.40 per bushel for corn, 25 cents a pound for protein and \$200 per ton for hay. This is based on annual feed consumption per cow, including replacement animals, of 100 bushels of corn, 4,973 pounds of protein, and 9.3 tons of hay or hay equivalents. If nonfeed costs per 100 pounds of milk produced averaged \$10, total costs to produce 100 pounds of milk would be \$23.50. A one percent decrease in milk prices in 2021 for Illinois producers would result in an annual price of about \$18.00 per 100 pounds. If total economic costs averaged \$23.50 per 100 pounds of milk produced, the average Illinois producer would have returns below total economic costs by \$5.55 per 100 pounds of milk produced. However, increase milk prices, lower projected feed prices and similar nonfeed costs will lead to positive economic returns in 2022.

Table 1. Costs and Returns for Illinois Dairy Enterprises, by Herd Size, 2020

	40 to 80 Cows per herd	More than 80 cows per herd	All units
Number of farms	6	12	18
Average tillable acres per farm	164	543	417
Average number of cows per farm.....	63	316	232
Average milk per cow, pounds	22,101	26,904	25,303
Average beef produced per cow, pounds	765	628	674
Costs per cow, milk plus beef	\$5,812	\$5,699	\$5,737
Average returns from beef	292	352	332
Net costs for milk per cow	5,520	5,347	5,405
Return from milk per cow	4,418	4,778	4,568
Return above all cost.....	(\$ 1,372)	(\$ 568)	(\$ 836)
Cash costs per 100 pounds of Milk produced:			
Feed.....	\$ 15.09	\$ 9.91	\$ 11.64
Operating expenses:			
Maintenance and power	\$2.19 ^a	\$2.47 ^a	\$2.38 ^a
Livestock expense	2.71	2.54	2.60
Insurance, taxes, and overhead	<u>0.33</u>	<u>0.33</u>	<u>0.33</u>
TOTAL operating expenses	\$5.23	\$5.34	\$5.30
Other costs per 100 pounds of Milk produced:			
Depreciation	\$0.72 ^b	\$0.92 ^b	\$0.85 ^b
Labor	3.24	2.93	3.03
Interest charge on all capital	<u>0.70</u>	<u>0.77</u>	<u>0.75</u>
TOTAL other costs	\$4.66	\$4.62	\$4.63
Total nonfeed costs per 100 pounds of milk produced	\$9.89	\$9.96	\$9.94
Total all costs per 100 pounds of milk produced	\$24.98	\$19.87	\$21.58
Net price received per 100 pounds of milk produced	\$18.77	\$17.76	\$18.10
Return above all costs per 100 pounds of milk produced	(\$ 6.21)	(\$ 2.11)	(\$ 3.48)

^a Includes utilities, machinery, equipment and building repairs, machines

^b Includes machinery, equipment, and building depreciation.

Table 2. Costs and Returns per Cow for Illinois Dairy Enterprises, 2017 to 2020

	2017	2018	2019	2020
Number of farms	29	17	22	18
Number of cows	202	177	229	232
Net cost for milk, per cow.....	\$4,261	\$4,660	\$5,103	\$5,405
Return from milk, per cow.....	4,201	3,913	4,500	4,568
Return above all costs, per cow	(\$ 60)	(\$ 747)	(\$ 602)	(\$ 836)
Price received per 100 pounds of milk	\$18.60	\$16.48	\$18.72	\$18.10
Price received per 100 pounds of beef	\$110.73	\$93.12	\$74.62	\$104.60
Milk produced per cow, pounds.....	22,585	23,725	24,018	25,303

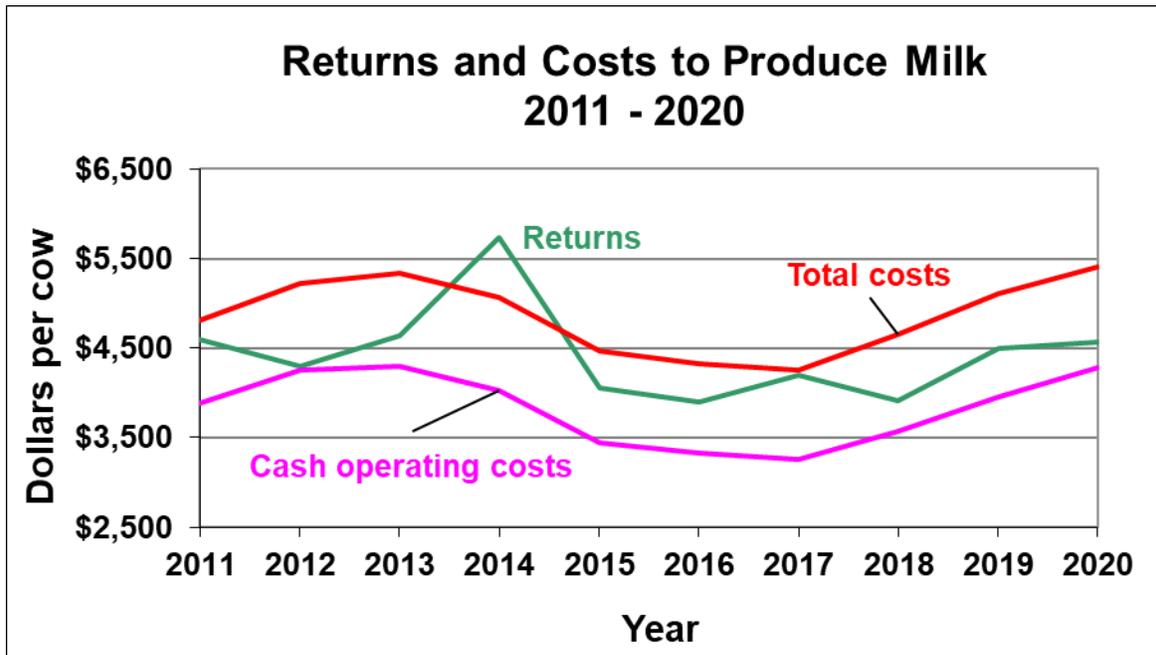


Figure 1. Returns and costs to produce milk, 2011 to 2020. Interest, depreciation, and labor charges included only in total costs.

The author would like to acknowledge that data used in this study comes from farms across the State of Illinois enrolled in Illinois Farm Business Farm Management (FBFM) Association. Without their cooperation, information as comprehensive and accurate as this would not be available for educational purposes. FBFM, which consists of 5,000 plus farmers and 68 professional field staff, is a not-for-profit organization available to all farm operators

in Illinois. FBFM field staff provide on-farm counsel with computerized recordkeeping, farm financial management, business entity planning and income tax management. For more information, please contact the State Headquarters located at the University of Illinois Department of Agricultural and Consumer Economics at 217-333-8346 or visit the FBFM website at www.fbfm.org.