2023

NORTHEAST DAIRY FARM SUMMARY

&

2024 MID-YEAR OUTLOOK

FARM CREDIT EAST

2023 NORTHEAST DAIRY FARM SUMMARY & 2024 MID-YEAR OUTLOOK

THIS YEAR'S REPORT IS A
JOINT PROJECT OF FARM CREDIT EAST
AND HORIZON FARM CREDIT.

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JULY 2024

Acknowledgments

The *Northeast Dairy Farm Summary (DFS)* was first published in 1980 with data from 1979. No research project of this scope would be possible without the collaboration and hard work of many individuals. The current author would like to thank the authors who preceded him in writing the *DFS* over the past 44 years.

This report includes a substantial amount of data provided by Horizon Farm Credit. Thanks to Michael Hosterman and Robert Goodling, as well as the rest of the staff at Horizon Farm Credit for their efforts to contribute Pennsylvania data to this report.

In addition, thanks are due to all Farm Credit lending and financial services staff, who reconciled the financial data from numerous farms and entered the information into our system. Every year, their hard work provides the raw material for creating the *DFS*. This report is truly a "team effort."

Most importantly, the entire Farm Credit team extends our sincere thanks to the hardworking Northeast dairy producers who entrusted their farm data to this project. We hope the end product is helpful in your continual pursuit of improved farm management. You inspire us all with the valuable work that you do.

Highlights of the 2023 Northeast Dairy Farm Summary

- Net earnings for our sample of 283 Northeast farms decreased to an average of $292 per cow in 2023, from $945 per cow in 2022.
- Total costs increased, rising by 5% from 2022 to 2023. Total expenses per cwt. increased by $1.22 per cwt. to $28.03 in 2023.[2]
- Net cost of production[3] (NCOP), however, decreased slightly to $22.64 per cwt., $0.23 lower than 2022.
- Some specific cost categories which changed in 2022 are:
  - Feed expense, a farm's largest cost, decreased slightly from $1,992 per cow in 2022 to $1,982 per cow in 2023
  - Fuel expenses decreased by 30% per cow as fuel and oil prices fell substantially from the prior year. The milk hauling assessment, however, increased due to higher trucking costs.
- Productivity increased slightly. Per cow production in our sample herds was 0.9% greater than the prior year. Milk sold per worker decreased due to fewer cows per worker.
- Cash flow was insufficient, on average, to meet all financial commitments (e.g., operating expenses, debt repayment, family living and income taxes), resulting in an average cash margin (excluding government payments) per cwt. of -$0.40.[4]
- Percent net worth in our sample decreased to 68%. Both average assets and liabilities increased. Total debt-per-cow increased from $5,200 to $5,976.

PROFILE OF THE AVERAGE *DFS* DAIRY FARM

	2022	2023
Number of Cows	821	726
Milk Sold per Cow	24,775 lbs.	24,989 lbs.
Milk Sold per Worker	1,254,778 lbs.	1,224,461 lbs.
Milk Price per Cwt.	$26.66	$22.76
NCOP per Cwt.	$22.87	$22.64
Net Worth	69%	68%
Net Earnings per Cow	$945	$292
Net Household Income per Cow	$1,004	$359
Return on Assets	6.9%	3.1%

[1]On an accrual basis, after family living, not including nonfarm income.
[2]Including family living.
[3]Total farm expense, plus family living, less non-milk income. For more information, see page XX.
[4]See figure 10.

TABLE OF CONTENTS

INDEX OF FIGURES

INTRODUCTION

There have been some significant changes to Farm Credit East's *Dairy Farm Summary (DFS)* the last two years. Continuing a change from last year's report, once again this is no longer solely a retrospective analysis of the prior year, but also includes an outlook for the year ahead.

In addition, this year we have included 143 farms from Pennsylvania through a collaboration with Horizon Farm Credit. While this is a significant change, we felt the addition of these Pennsylvania farms strengthens the report and allows for more robust analysis by providing a larger sample. We feel the inclusion of the Pennsylvania farms is appropriate because the profile of dairy farms is generally similar to the farms from New York and New England that have traditionally comprised the sample. These similarities include the range of herd sizes, cost structures (including feed and input costs), and milk marketing channels (including membership in many of the same marketing organizations). The Pennsylvania farms included in this year's report were, on average, smaller than the farms from our sample of New York and New England farms, which contributed to some of the differences observed in their cost structures. For more on this, see "Net Cost of Production," beginning on page 14.

The *DFS* has never been a true longitudinal study as the Northeast dairy farms analyzed in the report changes year over year. Nonetheless, we believe the study still provides important insights as to the changes in economics of dairy farming in the region year to year and over the long term.

Despite these changes, the overall purpose of this report remains the same: To assess the financial health and progress of dairy farm businesses within the Northeast. It is intended to provide dairy producers, Farm Credit staff, Northeast public policymakers and dairy industry leaders with a better understanding of the current status of the Northeast's largest farm sector.

While the report still contains data and analysis from the prior year (2023), it also contains forward-looking discussion and analysis from Corey Geiger, Lead Economist for Dairy at Farm Credit East's funding bank, CoBank.

As a major regional summary of actual dairy farm business results, the *DFS* is a unique project within the U.S. dairy industry. The *DFS* has been published for 44 consecutive years, beginning in 1980 with 1979 financial data. Past editions are available upon request.

We believe this sample of 283 farm operations represents a cross section of better-than-average Northeast dairy farm businesses, most of which maintain loan relationships with Farm Credit. The farms analyzed range from 41 mature cows to more than 3,000. While our sample is skewed towards larger farms than the actual distribution of farm sizes in the region, we have weighted each of the three size categories (1-299 cows; 300-699 cows; and 700 or more) equally in calculating all-farm averages, to ensure the results are more reflective of the distribution of herd sizes in the Northeast.

By only including farms able to supply complete and accurate financial statements by May 1st of this year, we are likely to skew the sample towards farms with good records that may be more profitable than the true average of all dairy producers in the region. Thus, we should emphasize that this report presents data based on the sample of dairy farms that chose to participate in our study and is not necessarily representative of the entirety of the Northeast dairy farm industry.

All farms included in the study received the majority of their income from milk sales, but many farms have additional business income, such as custom work, maple sugaring or crop sales. We have purposely not excluded these farms from the sample (unless such income exceeds 50% of total farm income) as we believe it reflects the diverse nature of Northeast dairying, where many producers have supplementary income streams.

If such ancillary business activity constitutes a separate enterprise from dairying, and both revenue and expenses can be broken out, the net return is included in *nonfarm income*, along with income from off-farm employment. If the expenses of this ancillary activity cannot be separated from the dairy farming expenses (labor costs are often co-mingled), such revenue is included in *other farm income*. Thus, the total farm income represented in this report often includes some return from these affiliated business ventures, increasing the income that would have been generated from the dairy enterprise alone. This is typically more significant for the farms with smaller herd sizes.

Partnerships and corporations have been adjusted to a sole proprietor basis for consistency. Farms with unusual events, such as a natural disaster, a major herd-health problem, a significant inheritance, large unexplained gains or losses (>10% of total assets), or other types of business anomalies were excluded from the sample. Each farm's data was carefully reviewed to ensure both cash flow and net worth reconciled within a limited margin of error. This approach ensures a high level of integrity for the financial results presented in the *2023 Northeast Dairy Farm Summary*.

The *DFS* tends to focus discussion on the "average farm." While there is no single farm which is exactly "average," focusing on the average farm within our sample allows us to highlight changes of Northeast dairy farms over time. While the use of averages may lead to an effective discussion with respect to change and overall industry trends, it tends to minimize the best and worst conditions experienced by farms within the sample.

This continues to be true in a year such as 2023. While the "average farm" within our group of 283 had $292 per cow in net earnings, many of the farms in our sample had net losses, even in a moderately high milk-price year. Results ranged from just over $2,500 in net earnings per cow, to a loss of more than $2,500 per cow. The standard deviation of net earnings was $700, indicating a great deal of variability within the sample.

Focusing on average results discounts the fact that while many producers achieve positive earnings, others, of all sizes, struggle to make a profit in this challenging industry due to a variety of reasons. For this reason, we also look at the data within individual herd-size groups and within the top and bottom profitability groups.

ANALYSIS OF 2023

MILK PRICES LOWER; INPUT COSTS REMAINED ELEVATED

Figure 1

Dairy Farm Profitability

	Net Earnings per Cow[1]	Standard Deviation	Return on Assets[2]	Return on Equity[3]
2019	$ 447	$518	5.2%	5.4%
2020	$ 663	$582	6.4%	7.6%
2021	$ 374	$609	3.8%	4.0%
2022	$ 945	$784	6.9%	8.2%
2023	$ 292	$700	3.1%	2.3%
3-Year Average	$ 537		4.6%	4.8%
5-Year Average	$ 544		5.1%	5.5%
10-Year Average	$ 408		4.1%	4.1%

[1]Net earnings does not include nonfarm income
[2]Return on assets = (net earnings + interest)/average total assets
[3]Return on equity = net earnings / average net worth

Figure 2

Net Earnings Per Cow 1979-2023

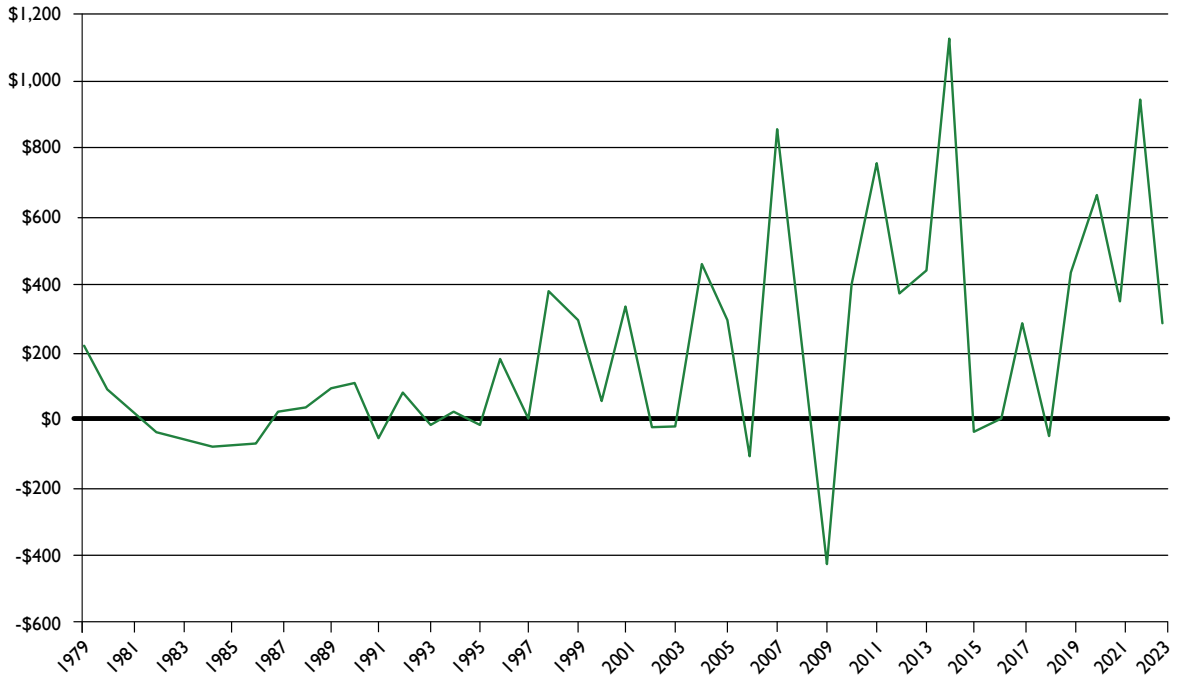


Figure 3

Statistical Uniform Price, Federal Order One

Source: Federal Milk Marketing Order One, Statistical Uniform Price at 3.5% Butterfat

If there was one sentence that summarized 2023, it would be that as inflation declined in the general economy, milk prices dropped significantly, while input costs remained elevated.

The milk price farmers received in 2023 declined by $3.90 per cwt., on average, compared to the prior year. The milk price received by the farms in our sample averaged $26.66 in 2022. This declined to $22.76 in 2023.

The Federal Milk Marketing Order One statistical uniform price declined from an average of $24.96 in 2022 to an average of $20.01 in 2023, as can be seen in Figure 3.

The average net cost of production, adjusting for non-milk farm income, decreased from $22.87/cwt. to $22.64/cwt., a change of -$0.23, substantially less than the decrease in milk prices, squeezing margins for producers.

Looking back over a five-year period, 2023 represents the lowest average net farm earnings for the period, at $292. Earnings ranged from $292 per cow in 2023 to a high of $945 in 2022 (not counting nonfarm income, such as a spouse's off-farm job). This brings the five-year average earnings to $544 per cow.

In the 44-year history of the *DFS*, 2023 ranks 17th in terms of profitability in nominal terms, but 21st when adjusted for inflation. 2023's net earnings of $292 per cow places it at roughly the mean of overall net earnings for the study period. While the cumulative return for *DFS* farms over the life of the study remains positive, the average farm has lost money in 15 of the 44 years of the *DFS*. Farms that experience multiple years of net losses have tended to drop out of the study, often exiting the industry, leaving more profitable farms remaining.

This summary uses three primary measures of profitability, each of which provides a useful perspective on dairy farm financial performance:

- **Net earnings per cow** measures sheer dollars of profit earned and includes all farm business sources of income.
- **Return on assets (ROA)** measures profit earned relative to the present market value of total farm assets. This indicates the earning power of each dollar invested in the farming operation, regardless of whether it comes from the farm operator or was borrowed from a lender.
- **Return on equity (ROE)** measures profit earned relative to the farmer's equity investment in the operation. This measure is the best indicator of how the dairy producer's investment is paying off compared to the potential return if the funds were invested another way.

A single year does not provide an accurate picture of the dairy industry's long-term operating performance, especially given the volatility in recent years. To further illustrate, in the last 15 years we have seen three of the top four years for profitability in *DFS* history (2014, 2022 and 2011) as well as the greatest loss in *DFS* history (2009). Given these extremes, multi-year averages yield a more accurate picture of the industry. If we look at both shorter- and longer-term averages, we see similar results (Figure 2). Continued year-to-year volatility confirms the challenges and opportunities faced by Northeast dairy producers.

Figure 4

Comparison of Multiyear Averages

	Three-Year Average	Five-Year Average	Ten-Year Average
Net Earnings per Cow	$537	$544	$408
Return on Assets	4.6%	5.1%	4.1%
Return on Equity	4.8%	5.5%	4.1%

It is important to differentiate net earnings (profit) from cash flow. Farm businesses rely on cash flow to pay ongoing bills, but cash flow is not an accurate measure of profitability. Net earnings are an accrual measure of profit, which represents a farm business's ability to provide an economic return for the operator's investment and management. It offers the best measure of a farm's profitability by adjusting cash farm income and expenses to reflect changes in inventories, accounts receivable, accounts payable and prepaid expenses. Conversely, some farms may show positive net income on an accrual basis yet struggle with cash flow.

It is important to note that principal payments on debt, while a significant cash obligation, are not a deductible expense and must be paid out of earnings. Thus, both accrual net earnings and positive cash flow are essential for a dairy farm to survive and grow. Furthermore, the owners of a business do not get to keep all the net earnings of that business, as debt principal payments and reinvestment in the business must come out of that sum.

As stated previously, the average farm milk price at $22.76 per cwt. was $3.90, or 15% lower than 2022's $26.66. It was $1.50 greater than the five-year average of $21.26 per cwt. (Figure 5A). In terms of actual (nominal dollars, not adjusted for inflation) milk prices, 2023 ranked 3rd in the 44 years of the *DFS*. However, to better understand the true story of how milk prices have changed over time, we must account for the impact of inflation (Figure 5B). In terms of "real," inflation-adjusted rankings, 2023 drops to 33rd. The first year of the *DFS*, 1979, ranks first, with an inflation-adjusted milk price of $42.31/cwt. in 2023 dollars.

Figure 5A

Farm Milk Prices Per Cwt. (Actual vs. 5-year Average)

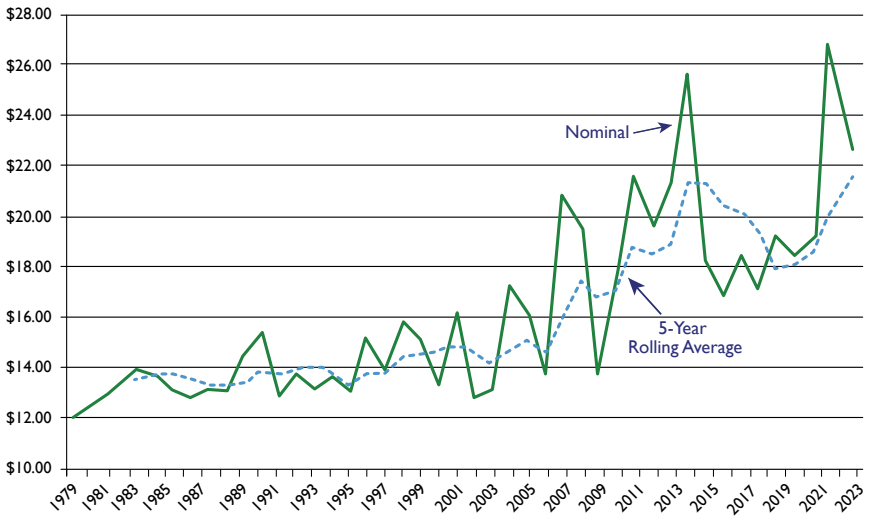
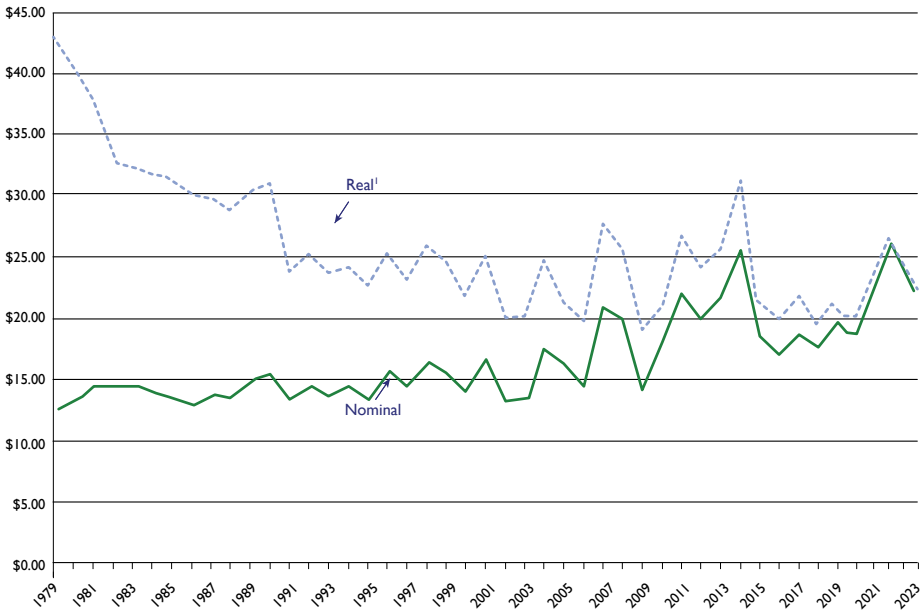


Figure 5B

Farm Milk Prices Per Cwt. (Actual vs. Real Dollars)



NET COST OF PRODUCTION

The net cost of producing milk in the Northeast has generally increased over the past five years.

Three key figures to review for 2023's cost of production analysis of the average dairy farm in the *DFS* include:

- Cash operating expenses were $24.98 per cwt., $0.69 greater than 2022.[5]
- Total costs, including depreciation and family living, were $28.03 per cwt., $1.22 per cwt. greater than 2022.
- Non-milk farm income for 2023 was greater than in 2022. After subtracting non-milk farm income, NCOP was $22.64 per cwt., $0.23 below the previous year.[6]

Figure 6

Cost of Producing Milk – Accrual Basis

	2019	2020	2021	2022	2023
			Dollars per Cwt.		
Feed	$ 6.30	$ 6.64	$ 6.90	$ 8.04	$ 7.93
Labor	3.26	3.35	3.42	3.10	2.84
Interest	0.80	0.57	0.60	0.84	1.15
Freight & Trucking	1.14	1.22	1.29	1.42	1.96
Crop Inputs	1.06	1.22	1.33	1.92	1.79
Other Expenses	6.03	6.29	6.25	8.97	9.31
Adjusted Cash Operating Expenses	$18.59	$19.29	$19.79	$24.29	$24.98
+ Depreciation	1.20	1.16	1.31	1.82	1.92
+ Family Living	0.41	0.34	0.40	0.70	1.13
Total Costs	$20.20	$20.79	$21.50	$26.81	$28.03
- Non-Milk Income[1]	2.39	2.68	2.90	3.94	5.39
Net Cost of Production[2]	$17.81	$18.11	$18.60	$22.87	$22.64

[1]Non-milk income includes cattle, crop and other income adjusted for inventory changes.
[2]Before any return on equity. If we assume a return on equity to be an imputed cost, each 1% return on equity would be equivalent to another $0.48 added to the NCOP for 2022. For a 6% ROE, NCOP would be $25.53.

Despite increases in many expenses in recent years, Northeast dairy producers have managed to limit cost-of-production increases. Categories where costs increased included interest, freight and trucking, depreciation and family living. Labor showed a decrease on a per cow and per cwt. basis, perhaps due to efficiency gains or changes to the farms in the sample, despite increases in hourly wages paid to workers.

[5] Does not include family living or depreciation.
[6] Non-milk farm income includes cattle, crop sales and other farm income. Nonfarm income and government payments are not factored into NCOP.

Minimum wage increases in many Northeast states and an overall tightening of the labor market continue to put upward pressure on labor costs per hour, leading to a push for efficiency and lower staffing levels on many farms.

In New York state, 2020 saw the implementation of mandatory overtime pay for agricultural workers, with a 60-hour threshold for time-and-one-half pay. Subsequently a planned phase-down of that threshold to 40 hours over a 10-year period was approved, as recommended by the Farm Laborers Wage Board. The phase down began in 2024, with a 56-hour threshold. The industry will need to make significant adjustments to maintain profitability once the threshold is reduced to 40 hours.

One factor in this effort is a refundable tax credit that New York farms are eligible for to cover the overtime premium required between the threshold and 60 hours. Given that hired labor is typically the second greatest expense on most dairy farms, managing labor efficiently is a significant contributor to the profit (or loss) of a farm.

Farms have responded to increased wage expenses in different ways. Some smaller farms reduced either the hours worked by hired labor or the number of hired workers and increased their usage of family labor. Some larger farms tried to become more efficient in their use of hired workers by increasing the number of cows per worker and by reducing hours to the 60-hour threshold or close to it. Some attempted to hire additional workers to manage the amount of overtime per worker, with varying degrees of success. The scarcity of both local resident and migrant workers, as well as housing limitations, made this tactic a challenge, and indeed many farms had to operate in 2023 with fewer workers than they might have liked.

The significant usage of family labor on Northeast farms somewhat masks the impact of increasing hired labor costs, most notably on smaller farms. Many farms using mostly family labor show a very small amount for hired labor expense, relying on the family living draw for compensation. We make no adjustment for un-paid or under-paid family labor in the *DFS*, reporting only the actual funds spent without any imputed cost for this work, despite the fact that it has significant value.

This year's study includes 143 farms from Pennsylvania, thanks to the staff of Horizon Farm Credit (the remaining 140 farms are from New York, Connecticut, Maine, New Hampshire and Vermont). When we look at the cost of production by region, we can see differences in feed costs, labor, interest expense and freight, among others. Remarkably, however, they ended up with the same NCOP, although the costs were distributed differently.

Feed costs per cwt. produced were lower in Pennsylvania. Farms in that sample tended to have more acreage per cow and grow more of their own feed. Pennsylvania farms also tend to double crop some or all of their acreage as well, further boosting their crop production. This led to lower feed costs and higher costs for crop inputs.

Labor costs were lower in Pennsylvania as well. The USDA's National Agricultural Statistics Service (NASS) surveys wage rates for farm workers, and found that in October 2023, livestock workers in the "Northeast I" region, which includes New England and New York, were paid an average of $17.93 per hour, while workers in the "Northeast II" region, which includes Delaware, Maryland, New Jersey, and Pennsylvania, were paid an average of $16.40 per hour.[7]

The lower labor costs could also be a function of greater reliance on family labor. This reliance could be connected to family living costs being significantly higher per cwt. in Pennsylvania. Many of these farms may be supporting multigenerational families, with multiple members working on the farm.

Interest expense per cwt. produced was higher in New York and New England. Farms in this group were more leveraged, with $1,146 more in total liabilities per cow than the farms in our Pennsylvania sample.

[7] USDA, NASS Farm Labor, November 2023

Finally, freight and trucking costs were lower on a per cwt. basis for the New York and New England farms. This difference could be attributable to their being larger on average than the Pennsylvania farms in the sample, thus spreading milk hauling costs and stop charges over more units of production.

Figure 7

NCOP By Region

Cost per Cwt.	New York & New England	Pennsylvania
Feed	$ 8.31	$ 7.56
Labor	3.11	2.56
Interest	1.42	0.89
Freight & Trucking	1.66	2.25
Crop Inputs	1.64	1.94
Other Expenses	9.96	8.61
Adjusted Cash Operating Expenses	$26.09	$23.81
+ Depreciation	1.80	2.10
+ Family Living	0.71	1.55
Total Costs	$28.61	$27.46
- Non-Milk Income*	5.96	4.81
Net Cost of Production	$22.65	$22.65

Looking at specific cost categories across our entire sample of farms, and comparing 2023 to 2022, fuel was the category with the most notable decrease, as energy prices fell from their peak in 2022. Fuel expense went from $174 per cow in 2021 to $310 per cow in 2022, declining to $216 in 2023.

Rent was the category with the most notable increase. However, this was primarily due to the incorporation of financials from Pennsylvania farms in the sample which had much higher rental expenses than farms in New York and New England.

Repair expense, typically one of the top four expenses on a dairy farm, decreased by 6% per cow, to $417 per cow. This could indicate that dairy producers tightened their belts in 2023 due to lower earnings and may have deferred some repairs that were not absolutely necessary.

Interest expenses increased due to rising interest rates on farm debt. This category increased by 38% from the prior year.

Crop inputs decreased 7% per cow to $443, primarily due to a decline in fertilizer costs.

Figure 8

Specific Cost Categories

	2022		2023		Percent Change	
	per Cow	per Cwt.	per Cow	per Cwt.	per Cow	per Cwt.
Feed	$1,992	$8.04	$1,982	$7.93	-0.5%	-1.4%
Labor	$ 767	$3.10	$ 709	$2.84	-7.6%	-8.4%
Fuel	$ 310	$1.25	$ 216	$0.86	-30.3%	-30.9%
Supplies	$ 317	$1.28	$ 300	$1.20	-5.4%	-6.2%
Rent	$ 116	$0.47	$ 200	$0.80	72.4%	70.9%
Repairs	$ 443	$1.79	$ 417	$1.67	-5.9%	-6.7%
Interest	$ 209	$0.84	$ 288	$1.15	37.8%	36.6%
Crop Inputs	$ 475	$1.92	$ 447	$1.79	-5.9%	-6.7%
All Other Expenses	$1,836	$7.41	$2,163	$8.66	17.8%	16.8%

The formula used in the *DFS* for calculating NCOP is as follows:
[Cash Operating Expenses (with accrual adjustments made for pre-pays, accounts payable, etc.)
+ Calculated Depreciation[8] *+ Family Living Expense] - Non-Milk Farm Income*[9] *= Net Cost of Production.*

It is important to note that the $22.64/cwt. average NCOP includes no return on the producer's equity investment. While it may be debatable what an appropriate return on equity (ROE) might be, earning some level of return should be a business objective, and is indeed necessary for the repayment of debt and for reinvestment in the business. For the average DFS producer in 2023, each 1% return on equity would be equivalent to an additional $0.48 per cwt. If we were to include a 6% ROE goal as part of NCOP, for example, this would be equivalent to a $25.53 NCOP, well in excess of the actual milk price in 2023.

Figure 9 shows NCOP by herd size. Generally, larger herds have an advantage in spreading fixed costs over more units, driving per-unit cost down through higher production per cow and greater capital efficiency. Smaller herds typically have lower hired labor costs (due to more owner and family labor) and higher non-milk income per unit; however, family living and other costs are usually higher, on a per-unit basis.

[8] For the *DFS*, all farms have their submitted depreciation restated by applying a standard percentage of straight-line depreciation to various asset classes in order to compare consistent numbers from farm to farm and avoid variations driven by accounting and changes in tax laws.
[9] Non-milk income includes cattle, crop and other income adjusted for inventory changes, but does not include nonfarm income or government payments.

Figure 9

NCOP By Herd Size

Cost per Cwt.	< 299 Cows	300-699 Cows	700+ Cows
Feed	$ 7.59	$ 7.93	$ 8.23
Labor	1.57	3.06	3.72
Interest	1.49	1.11	0.90
Freight & Trucking	2.21	1.96	1.75
Crop Inputs	2.15	1.83	1.44
Other Expenses	10.78	9.22	8.13
Adjusted Cash Operating Expenses	$25.79	$25.11	$24.16
+ Depreciation	2.40	2.09	1.35
+ Family Living	2.15	0.83	0.54
Total Costs	$30.34	$28.04	$26.06
- Non-Milk Income*	7.15	4.56	4.64
Net Cost of Production	$23.19	$23.47	$21.42

It is critical to note that while we often speak of NCOP as a single number, in reality each individual farm has its own cost of production. These averages are exactly that: A mathematical mean, with half of farms having NCOPs greater than the average and half lower.

CASH FLOW FROM MILK INCOME DECREASES

Cash flow is another measure of financial health for a dairy operation or any business. Each business has a minimum cash requirement to meet its ongoing commitments, such as operating costs, overhead, debt service payments and family living. The remainder can be used for capital investment, such as to replace older equipment, build liquidity or invest in a retirement fund.

Cash margin from milk income decreased significantly from the prior year in 2023, averaging $-0.40/cwt. compared to $+6.43 in 2022, $0.66 in 2021, $0.35 in 2020, and $1.43 in 2019 (Figure 10). Prior to 2019, the average *DFS* farm had four straight years of negative cash flows. This means that although the average farm in our sample had positive cash flow for the years from 2019-2022, they may still carry increased debt loads from prior years of negative cash flows.

[10] The cash flow analysis shown in Figure 10 does not include government payments.

Figure 10

Cash Flow Analysis Per Cwt.

	2019	2020	2021	2022	2023
Actual Milk Price	$19.18	$18.48	$19.21	$26.66	$22.76
Cash Required	$20.62	$21.18	$21.80	$23.79	$28.55
- Other Income	2.87	3.05	3.25	3.56	5.39
Breakeven Milk Price	$17.75	$18.13	$18.55	$20.23	$23.16
Cash Margin	$ 1.43	$ 0.35	$ 0.66	$ 6.43	$-0.40

Cash Margin Definitions

Total cash operating expenses
+ Family living expense and income tax
+ Scheduled principal payments
= Cash required

Cattle sales
+ Capital sales
+ Crop sales
+ Other farm income
= Other income

Figure 10 shows the range of cash margins from milk income for the average Northeast dairy farm since 2019. The breakeven milk price is the price level where a farm can cover all its cash operating expenses, family living and debt payments, without having to rely on government payments or off-farm income. Due to cost inflation and increasing debt levels, the breakeven milk price has increased significantly from approximately $14 per cwt., which was common prior to 2007, to over $20 in 2014, which we returned to in 2022. Milk prices have fluctuated in recent years, setting new records in 2011, 2014 and 2022, but declining after 2014 until 2022. Note that this calculation looks at milk income only and does not account for government payments, which were more significant in 2020 than before or after that year.

Given the variation in average cash margins, making a financial decision based on a single year's performance would be difficult. Figure 10 further illustrates this point: While the cash margin was positive from 2019 to 2022, it was negative for the four years prior to 2019, and returned to negative territory in 2023.

This level of variability makes financial management more challenging, underscoring the importance of a long-range view of cash flow. Timing of major capital expenditures, managing debt load, building liquidity for the tight years and adjusting family withdrawals are all means of managing volatility. Some producers have adopted risk management strategies involving both input costs and milk prices using a combination of crop insurance programs, such as Livestock Gross Margin (LGM-Dairy) and the Dairy Revenue Protection (DRP) coverage, other government programs such as the Dairy Margin Coverage (DMC) as well as hedging strategies.

CAPITAL EFFICIENCY

When viewed on a per cow or per cwt. basis, larger farms are generally able to spread costs and investments over more units. For example, the 299 cows or fewer group produced less milk per worker than the average of all farms and had approximately significantly greater investment per cwt. sold ($106 versus $74). Return on assets was positive for all groups, though the 700 or more cows group had the highest return on assets.

Figure 11

Capital Efficiency

Herd Size (No. of Cows)	Pounds Sold per Worker	Pounds Sold per Cow	Total Assets per Cwt. Sold[1]	Asset Turnover (per Year)[2]	Return on Assets[3]
299 or Fewer	993,138	23,055	$ 106	0.30	2.5%
300 to 699	1,310,008	25,032	67	0.43	4.5%
700 or More	1,417,644	26,880	54	0.51	4.5%
All Farms	1,224,461	24,989	74	0.39	3.1%

[1] Total assets divided by cwt. of milk sold
[2] Total assets divided by cash receipts = turnover per year
[3] Return on assets = (net earnings + interest) / average farm assets

NET WORTH INCREASES IN DOLLARS, BUT DECLINES BY PERCENT OF ASSETS

Net worth, or owner's equity, measures how the farm business is capitalized. It is measured at the end of each year in the *DFS* in order to consider changes from year to year. Net worth is an indicator of the ability of the business to absorb financial losses and to collateralize additional borrowing. It is also a theoretical measure of the amount of money that could be redeployed toward other endeavors if the business was liquidated.

The average *DFS* farmer's net worth decreased by 1% in 2023 (Figure 12). Assets per cow increased but liabilities per cow increased to a greater extent, resulting in a decrease in net worth. Solvency remains solid for the average *DFS* farm, meaning that the average participant has more than enough farm assets to satisfy all farm debts, selling costs and the resulting income tax liability if they were to liquidate their operation.

Figure 12

Change In Financial Position

	Percent Net Worth[1]	Current Ratio[2]	Quick Ratio[3]	Asset Turnover[4]
2019	67%	2.8	1.1	0.47
2020	69%	3.4	1.5	0.48
2021	67%	2.5	1.1	0.42
2022	69%	3.3	1.6	0.45
2023	68%	2.8	1.2	0.39

[1] Percent net worth = Owner's net worth / total assets
[2] Current ratio = Current assets / current liabilities
[3] Quick ratio = Current assets - inventory / current liabilities
[4] Asset turnover = Value of farm production / average total assets

There is an important distinction between growth in net worth resulting from earnings versus market revaluation. Net earnings are the result of profits from dairy farming. Market revaluation generally occurs in farm real estate and, sometimes, cattle, while machinery and equipment typically depreciate.

Liquidity is the ability of the farm operator to convert short-term assets (current assets) to cash to meet short-term obligations (current liabilities) as they become due. Current and quick ratios are two important measures of liquidity. In 2023, the average dairy farm had a current ratio of 2.8, a decrease from the prior year (Figure 12). However, this means that the average farm still had 2.8 times the value of current assets compared to its current liabilities.

However, since inventory on a dairy farm is primarily feed for on-farm use and not intended to be directly converted into cash to pay bills, subtracting inventory from current assets provides a closer look at a dairy farm's true short-term liquidity situation. The quick ratio takes the result (current assets minus inventory) and divides by current liabilities. The quick ratio of 1.2 at the end of the year demonstrates that the average farm had sufficient near-cash assets (such as cash and accounts receivable), excluding inventory, to meet the current year's financial obligations. This indicates that producers had, on average, 120% of the value of short-term liabilities available in cash or assets that could be quickly converted to cash.

Finally, asset turnover is commonly used to measure the efficiency of total capital invested in the business by determining gross revenue dollars generated for every dollar invested. The higher the asset turnover ratio, the more efficiently the investment is working for the business. Thus, greater asset turnover should translate into a higher return on assets (ROA). In 2023, the asset turnover ratio for the average Northeast dairy business was 0.39, slightly lower than 2022. This was a result of a decrease in cash receipts relative to the assets of the farms in the sample with $0.39 of gross revenue generated for every $1 invested in assets.

NET MARGIN BY PROFIT QUARTILE

Northeast producers again showed a wide range of profits around the $292 per cow average net earnings in 2023. Some farms lost money, while a few posted more than $1,000 profit per cow. Figure 13 demonstrates the range of profitability between the top, bottom and all farms profit groups. Farms in the *DFS* are ranked by profit margin and divided into four quartiles.

Figure 13

Range of 2023 Profits

	Bottom 25%	All Farms	Top 25%
Number of Farms	71	283	71
Average Number of Cows	743	726	656
Milk Sold per Cow (lbs.)	25,243	24,989	25,768
Milk Sold per Worker (lbs.)	1,320,806	1,224,461	1,397,032
Net Earnings			
Per Farm	($247,419)	$211,992	$650,096
Per Cow	($333)	$292	$991
Per Cwt.	($1.32)	$1.17	$3.85
Return on Assets[1]	-0.1%	3.1%	6.5%
Return on Equity[1]	-3.2%	2.3%	7.3%

[1] ROA and ROE calculations do not include asset appreciation.

There was a $1,324 difference in average net earnings per cow between the top and bottom quartile groups. Similarly, on a per cwt. basis, the top farms showed $5.17 more in net earnings than the least profitable farms with earnings of $3.85 per cwt., while the bottom group had a net loss of -$1.32 per cwt.

Interestingly, some of the most profitable farms, at least on a per cow basis, were found at both the high end and at the low end of herd sizes. The large herd dairy farms were able to capitalize on economies of scale, while some of the small herd farms were able to keep a tight rein on expenses, had significant non-milk business income and utilized more family labor. There were farms from all size categories represented in the top profit quartile.

FARM SIZE AND PROFITABILITY

Figure 14

Farm Size and Profitability

	299 Cows or Fewer	300-699 Cows	700 Cows or more
Average Number of Cows	168	471	1,540
Milk Sold per Cow (lbs.)	23,055	25,032	26,880
Milk Sold per Worker (lbs.)	993,138	1,3,10,008	1,417,644
Net Cost of Production per Cwt.	$ 23.19	$ 23.47	$ 21.42
Milk Price per Cwt.	$ 22.91	$ 22.91	$ 22.47
Assets per Cow	$24,459	$16,756	$ 14,575
Asset Turnover	0.24	0.35	0.41
Percentage Net Worth	68%	70%	66%
Net Earnings per Cow	$ 265	$ 191	$ 420
Return on Assets %	2.5%	2.8%	4.5%

Average farm sizes in the Northeast and across the country have continually increased for many decades. The *DFS* has found that all size farms can be profitable, and that it's more important to be 'better' than it is to be 'bigger.' However, there are still strong correlations in the data regarding size of farm, efficiency, pounds of milk sold per cow, cost of production and ultimately, profitability.

On average, the largest size group was by far the most profitable of the four size categories with $420 net earnings per cow in 2023 (Figure 14). In addition, compared to the rest of the sample, members of this group were:

- The most productive on a milk-sold-per-cow and per-worker measure.
- The lowest per-cow investor in productive assets. As a result, this group had the highest asset turnover ratio.
- The lowest cost producers per cwt., based on net cost of production.

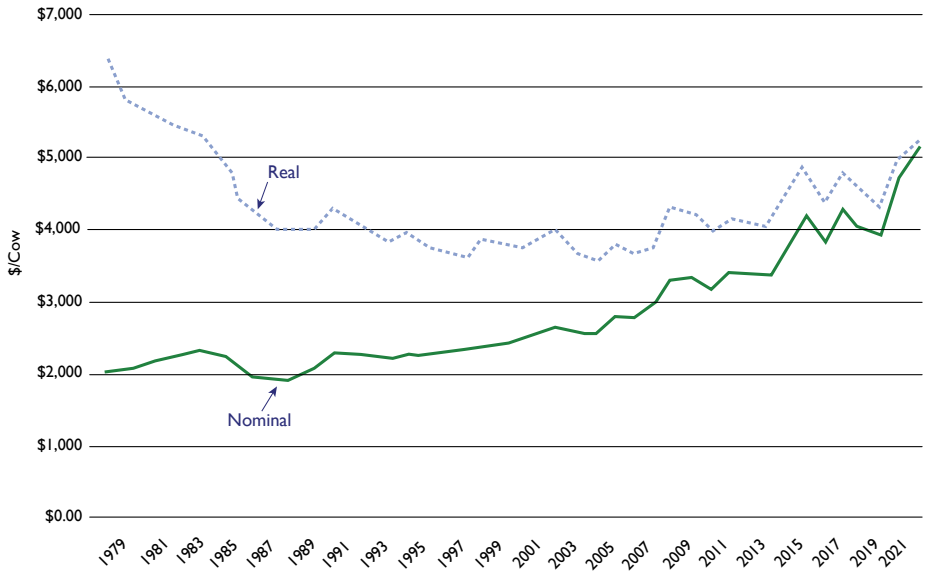
It is noteworthy that all four size categories were represented in the top profit quartile, while only about one-third of the 700+ cow size group had that distinction. This is important because it shows there is opportunity to achieve superior profitability over a range of farm sizes. It also shows, however, that, as a group, the largest farms also have the highest average earnings per cow.

FARM DEBT

We noted in 2016 that total liabilities exceeded $4,000 per cow for the first time in *DFS* history. This was worth mentioning because while it took 29 years for average debt-per-cow[11] to climb from $2,000 to $3,000, it took only eight years to exceed $4,000 per cow. In 2022, total liabilities exceeded $5,000 per cow, only six years since the $4,000 level was first reached. Of course, there is impact from inflation during this period, but it still raises concerns about the increasing leverage of the average farm, and their ability to maintain debt service and cash flow during periods of low margins. In 2023, we saw total debt per cow climb to $5,976, with intermediate and long-term debt totaling $5,081.

Figure 15

Total Liabilities Per Cow



Real = adjusted for inflation

[11] Total liabilities per cow, including current liabilities.

CONCLUSION

2023 Marked a sort of "return to the mean" for Northeast dairy production, as milk prices declined sharply from 2022's highs, and net earnings per cow reverted to that of a more "average" year. However, given the elevated levels of debt carried by the typical Northeast dairy farm, when debt service is factored in, the average cash flow per cwt. was negative.

Many producers used savings accumulated in 2022 to cover their shortfalls in 2023. While this was an effective strategy for one year, it is likely to be insufficient to cover ongoing cash shortfalls that may occur.

It is also worth noting that while the average farm in our study had positive net earnings ($+292 per cow), nearly 1/3 of the farms in our sample lost money on an accrual basis.

Nonetheless, the Northeast farm community has faced difficult times before and has proven remarkably resilient, despite all manner of challenges.

During these periods of unpredictable markets and low prices, managing risk is more important than ever, given the high levels of debt carried by many farms, and the uncertainty they face in commodity prices on both the input and output sides.

The greatest risk management tool remains smart management and cost control. By continuing to invest in property, livestock and equipment, Northeast producers are generally well-positioned to manage tight margins in the future.

One of the key takeaways from the Northeast Dairy Farm Summary is that there are multiple paths to dairy farm profitability. Strategies are as different as the individual characteristics of farms within this study, and there is certainly more than one way to achieve industry-leading returns. Working closely with your Farm Credit loan officer and/or business consultant to assess your strengths and weaknesses and develop a strategy to position your farm to meet industry challenges and take advantage of business opportunities is now more critical than ever.

If you are interested in improving your profitability, the *DFS* is only the beginning. Farm Credit's Success Strategies Dairy Benchmarks delves much deeper into not only farm financial data, but a host of production and herd management metrics as well. Membership includes a personalized profit assessment of your farm. For more information on this program, a joint project between Farm Credit East and Horizon Farm Credit, contact a representative of one of those partner organizations.

We hope that this year's Northeast Dairy Farm Summary is a useful tool for managing your farm and business. It remains essential that dairy farmers and those who serve them continue to have good data upon which to make decisions in order to have a healthy, economically sustainable Northeast dairy industry. The entire Farm Credit team of loan officers, farm accounting professionals and business consultants are eager and prepared to help Northeast dairy farmers achieve financial success. On behalf of our entire team, thank you for your interest and participation.

SEISMIC SHIFTS ARE TAKING PLACE WITHIN DAIRY

BY COREY A. GEIGER, LEAD ECONOMIST FOR DAIRY, COBANK

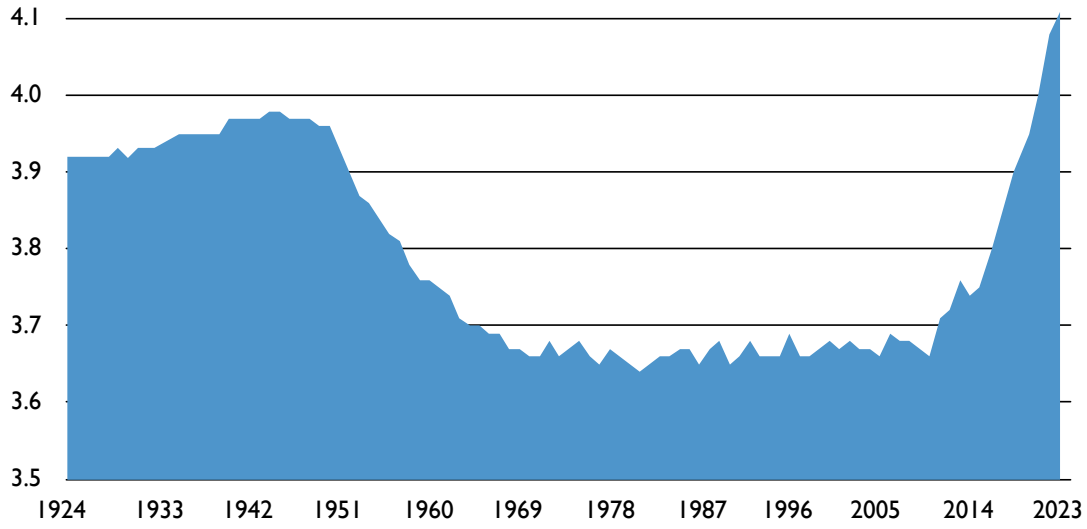
There have been a number of structural shifts in our industry that appear to have some staying power. It's important to gain a better understanding of these changes to implement on-farm strategies to capitalize on the market opportunities.

In the pole position would be milk's butterfat composition. With each passing year, milk from our nation's dairy farms yields more processed dairy products. That's an important distinction in an era where consumers are purchasing more full-fat dairy products and ultimately eating their dairy in forms like cheese, butter and yogurt versus drinking their dairy as a fluid beverage.

Butterfat and protein top the charts

Exhibit 1

Butterfat % – 1924–2023



Source: USDA NASS

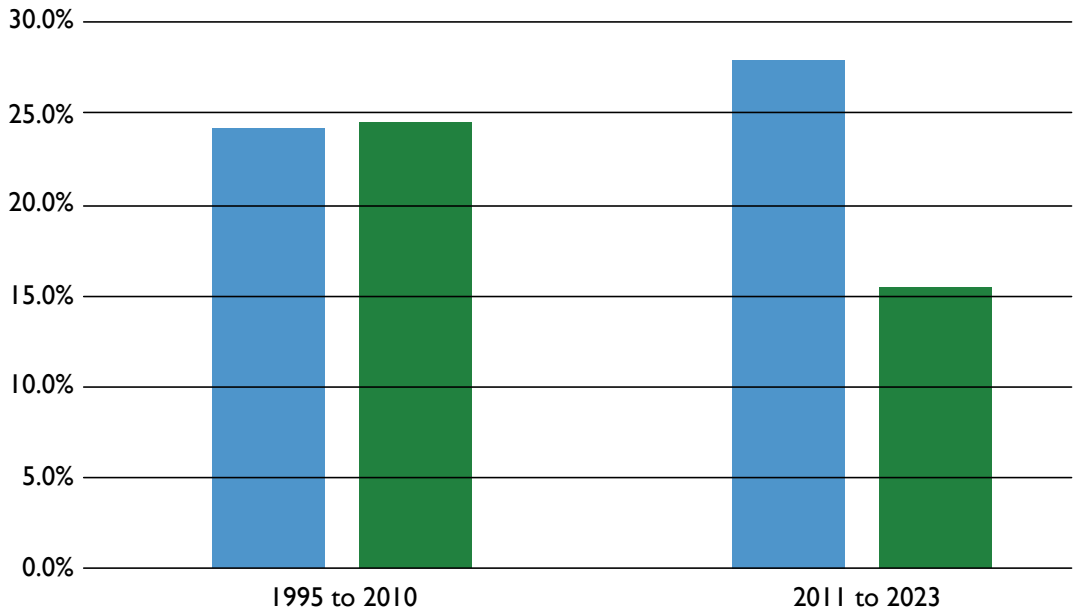
There's been a multitude of reasons for growth in the butterfat story. Consumer demand leads the list as the war on saturated fats has subsided with scientific evidence pointing to the fact that some saturated fats deliver healthy fats in the human diet. Even though the USDA and FDA Dietary Guidelines for Americans still don't recognize this fact, smart consumers are reading the scientific research and making their own decisions. There's another reason for the higher sales for full-fat products – food's flavor is found in fat.

In 2021, the U.S. dairy industry surpassed the previous record output of 3.98% butterfat set in 1945. In the following two years, the average butterfat test moved to 4.08% in 2022 and 4.11% in 2023 as shown in Exhibit 1. Data from the start of the 2024 production year indicates the collective U.S. dairy industry will post the fourth consecutive record year for butterfat.

This shift in milkfat composition has caused metrics for milk production and butterfat production to decouple. From 1995 to 2010, butterfat production and milk production were one in the same growing at 24.1% and 24.2% respectively. Since 2011, growth in butterfat production has far outpaced milk growth at 27.9% versus 15.4%. That's a 12.5% difference as shown in Exhibit 2. In the years ahead, this spread between butterfat and milk is only going to grow.

Exhibit 2

Butterfat Production Outpaced Milk Production by Over 12%



Source: USDA Economic Research Service

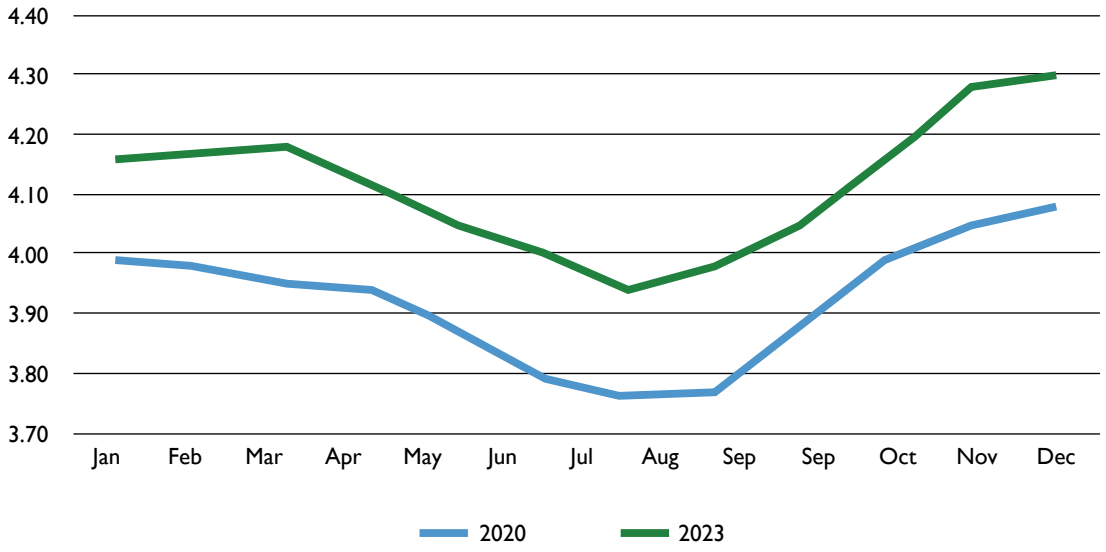
Given this market dynamic, it behooves every dairy farmer shipping milk under Multiple Component Pricing (MCP) provisions to find ways to maximize components. MCP provisions are the standard for 92% of the milk produced in the United States. In 2023, 58% of the MCP revenue came from butterfat, 31% from protein, 6% from the producer price differential and 5% from other solids. Given current market conditions, butterfat will continue to lead milk check revenue in 2024 and likely deep into 2025.

Also, the upside for butterfat and one of its main end products - butter - remains strong as the U.S. still does not produce enough butterfat to serve the domestic market. In fact, butter product imports into the U.S. have grown 13-fold from 2011 to 2023 moving from 10.2 to 123.9 million pounds.

Butterfat is just one part of the MCP story as protein is the other leading component. While national data on protein growth is somewhat limited and less historic when compared to butterfat, Federal Milk Marketing Order (FMMO) data is a solid source. Exhibits 3 and 4 show the four-year shift in milk's two main components.

Exhibit 3

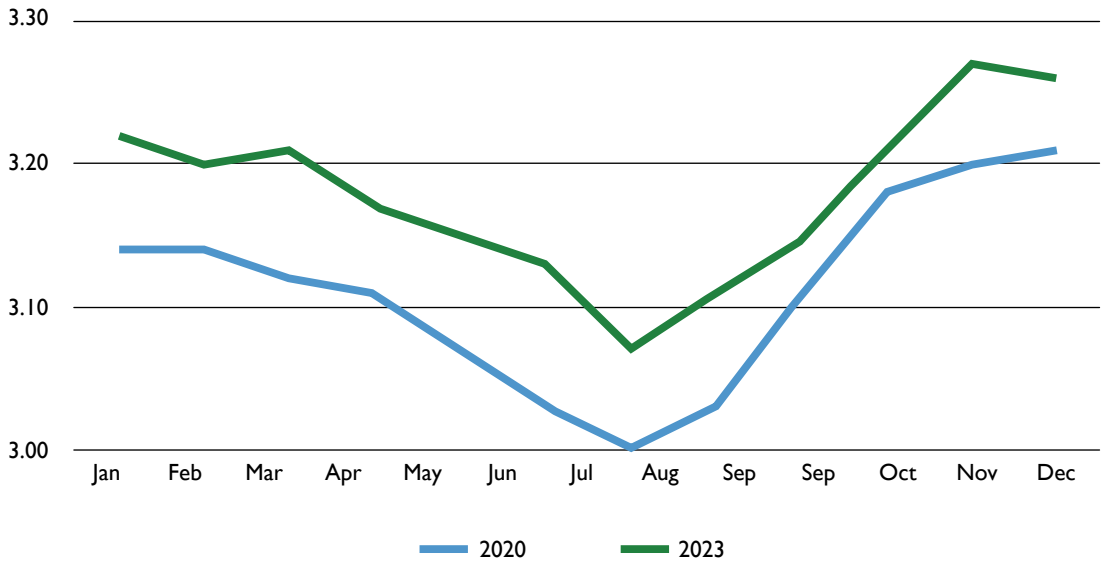
Northeast Butterfat % 2020 and 2023



Source: Federal Milk Marketing Order One

Exhibit 4

Northeast Protein % 2020 and 2023



Source: Federal Milk Marketing Order One

How is your farm meeting this market opportunity?

You can easily compare your milk shipments to the national average to track your progress. The amino acids found in dairy are the most complete known to humanity, making whey proteins a high-demand product by those looking to consume high-quality protein. That will make whey protein a growth sales category for many years to come.

Changing genetics to meet changing markets

The original A.I., as in artificial insemination, has long been used by dairy farmers to improve their dairy herds. However, two relatively recent market tools have stepped up the importance of an A.I. program on everyone's dairy farm – genomics and sexed semen.

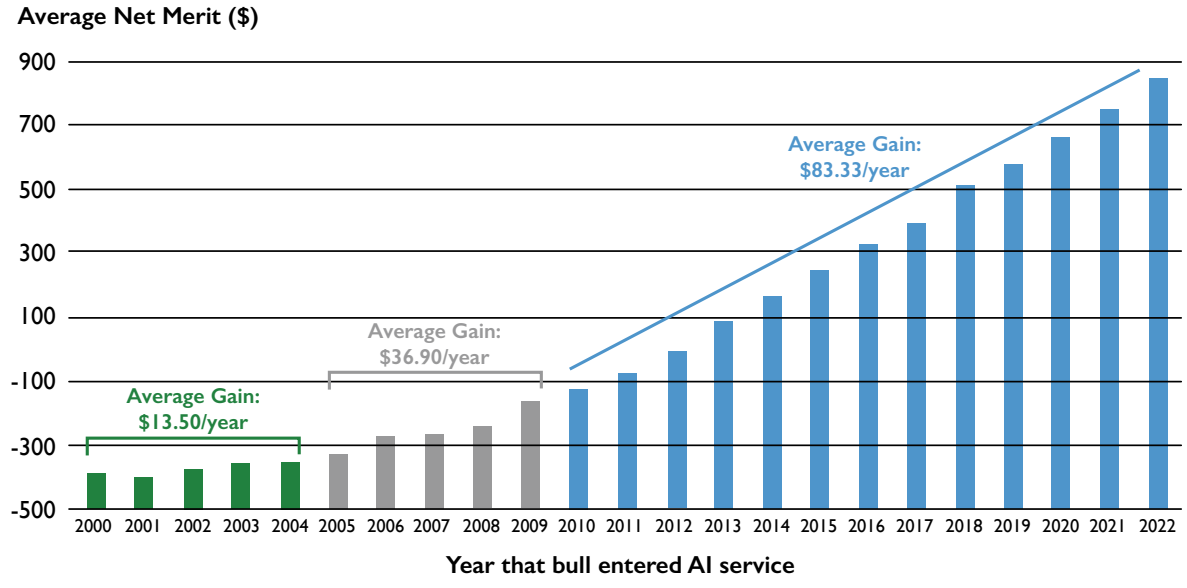
Genomics first came upon the scene in 2008. Very quickly it began to change the pace of genetic progress. Prior to 2008, by using the best available Holsteins bulls on your herd the pace of genetic progress would improve by $13.50 Net Merit each year as shown in Exhibit 5. By 2010 that number leapt to $83.33 annually as calculated by George Wiggans with the Council on Dairy Cattle Breeding. And since dairy cattle are often kept on dairy farms for successive generations, this area has become the most important investment in genetics, even dare I say topping that found in seed genetics for crops. That's because those dairy farmers who raise their heifer calves for the next generation of herd replacements can capitalize on these additive genetics just like compounding interest.

While a great deal of the progress from genomics can be found on the sire side, the female side is growing in importance with each passing year. In May 2024, the collective U.S. dairy industry ran its 9 millionth genomic test making the dairy cow the most studied domestic animal on the planet. By running that test on a newborn dairy calf, we instantly know with 70% accuracy how that calf will perform as a dairy cow and thus no longer need to place capital resources into future replacements that will under achieve.

Sexed semen has been a near equal to genomics and dairy farmers are voting with their accounts payable. In 2022, 49% of the dairy bull semen sold in the United States was reverse sorted to create heifer calves. By the very next year, that number moved to 54% as dairy farmers are planning their future replacements from the very best heifers and cows in the dairy herd. This is the first time that conventional bull semen with 50-50 sex ratios has been in second place in market share. That number will continue to dwindle given the emerging market opportunities.

Exhibit 5

Genetic Merit of Marketed Holstein Bulls



Source: Data computed by George Wiggans, Council on Dairy Cattle Breeding

The door opens to beef on dairy

Sexed dairy semen to yield a far higher ratio of heifer calves flung the doors open on a new opportunity – using beef semen on dairy cows to capitalize higher beef yields from the resulting offspring and the limited supply of beef in current U.S. markets.

This move happened swiftly as the U.S. A.I. industry collectively sold 2.5 million units of beef semen in 2017. By 2019 that number vaulted to 5.8 million units and then bounded for a new record of 9 million units by 2023, as reported by the National Association of Animal Breeders (NAAB) that represents nearly 95% of the A.I. market. Of that 9-million-unit total in 2023, 7.9 million units were sold to dairy farmers meaning that only 1.5 million units were sold to cattle ranchers. This doubles down on the narrative that the dairy cow is the most studied animal on the planet and one day a beef brand could emerge backed by the data collected by the dairy industry.

The beef-on-dairy trend will not be fading any time soon given the value of the newborn crossed calves. In addition, there are market dynamics in the greater livestock sector that point to this being a long-term opportunity. That value proposition is being driven by three fundamental factors:

- The total cattle inventory of 87.15 million head. This number, which includes both beef and dairy, is at the lowest levels since 1951.
- The total beef cow inventory at 28.2 million head stands at the lowest mark since 1961.
- Feeder cattle supplies have fallen to 24.2 million head, which is the smallest total since 1972.

Keep in mind that the U.S. population included 148 million people in 1951. Fast forward to the present and the U.S. population has grown 126%. That means there are 335 million Americans vying to purchase smaller beef inventories.

With some 3 to 3.25 million head of beef-on-dairy crossed animals in the countryside, as estimated by Dale Woerner of Texas Tech University, it stands to reason that dairy replacement inventories are down, too. The beef-on-dairy trend has presented such a seismic shift that dairy replacements 500-pounds and larger, a proxy of the number of females available to enter the dairy herd in the upcoming year, is down 709,100 head from just six years ago. This represents a 20-year low based on USDA data.

That means higher prices for dairy farmers looking to purchase dairy replacements. Just two years ago, a buyer could have had their pick of heifers for as little as $1,600 per head. That number has catapulted to prices near $3,000 and given the supply situation, that number will remain strong for the next two to three years. For those dairy farmers looking to grow their dairy farms by purchasing heifers, that line item will need an adjustment.

Given these high prices and scarcity of replacements, dairy farmers have pulled way back on culling. Through May 2024, dairy cow culling was off 177,100 head. This emerging culling trend is another situation that warrants monitoring throughout the coming months and years.

HPAI remains a concern

In March, dairy farmers came to learn that cows can get avian influenza. By mid-June, the Highly Pathogenic Avian Influenza (HPAI) strain known as H5N1 was documented to be in dairy cattle in over a dozen states. It stands to reason that the virus will spread further given the migration patterns of wild bird flocks. Fortunately for those of us in the dairy industry, cows have proven to be resilient and recover from an infection.

So far, consumer demand has largely not been impacted by HPAI concerns even though the topic receives near-daily coverage in national media outlets. There are two reasons for largely unwavering consumer demand – pasteurization has been proven to deactivate the virus and the proper cooking of beef is a great method for food safety.

To double down on beef safety, USDA conducted meat tissue samples on 96 cull dairy cows that were condemned for systemic diseases at select Food and Safety Inspection Service (FSIS) facilities. Once condemned, meat from those cows is prohibited from entering the human food supply. While one cow did test positive for the H5N1 virus that causes HPAI in dairy cows, the other 95 cows tested negative for viral particles.

During this in-depth study, FSIS collected multiple tissue samples, including meat samples from the diaphragm. The working theory is that testing the diaphragm would yield the highest positive test results as this muscle is most closely connected to the lungs, which is where the HPAI virus infects cattle.

Dairy farmers have long used vaccinations to keep their herds safe and ultimately that may become the best solution to overcome this latest challenge. The federal government is nearing an agreement to bankroll a late-stage trial of Moderna's mRNA pandemic bird flu vaccine for humans. The federal funding could come as early as July. Also, the USDA is to begin testing a vaccine developed by University of Pennsylvania researchers by giving it to calves.

Dairy demand points mostly positive

There are three important channels to move dairy products – retail, food service and exports. Futures prices indicate that 2024 could be the third-highest milk price year on record. However, sluggish international dairy trade and tepid domestic consumer demand in restaurants due to four years of inflationary forces have been slowing growth in dairy product sales in the first half of 2024. On the international front, China, the world's largest dairy product importer, has pulled back on its purchases.

If consumer demand keeps building as it has in mid-2024, the remainder of this year could point to stronger sales. When coupled with lower forecasted feed prices, there could be some positive market opportunities for dairy farmers. To better secure positive returns, consider implementing risk mitigation strategies on both milk, feed and other inputs.

Corey Geiger is the Lead Economist for Dairy with CoBank's Knowledge Exchange Division and previously served on the editorial team for Hoard's Dairyman for 28 years. He earned degrees in agricultural economics and dairy science at the University of Wisconsin-Madison

FINANCIAL RECORDS

The following 13 tables present the detailed financial data on which this summary was based. These tables are organized into four sets:

- Tables A-1 through A-4 are **COMPARISONS BETWEEN YEARS**
- Tables B-1 through B-3 are **DATA BY HERD SIZES**
- Tables C-1 through C-3 are **DATA BY PROFIT GROUPS**
- Tables D-1 through D-3 are **DATA BY REGIONS**

Each set includes a condensed earnings worksheet, a balance sheet summary and a page of evaluation factors. The 2019-to-2022 data series includes farms in Connecticut, Maine, Massachusetts, New Hampshire, New York, and Vermont. The 2023 data includes farms from Connecticut, Maine, New Hampshire, Pennsylvania and Vermont.

Please note the following in order to properly use this data:

- Cattle purchased for replacements are considered operating expenses, but cattle purchased for expansion are capital purchases. The accrual adjustment change in the inventory of raised livestock is calculated by subtracting purchases for expansion from the total increase in cattle inventory value.
- Depreciation has been restated by applying a standard percentage of depreciation to various asset classes in order to compare consistent numbers from year to year and avoid variations driven by changes in tax laws.
- Incorporated farms were adjusted to sole proprietor status, and owner draw was recorded as Family Living Expense.
- Appreciation and revaluation of capital assets do not appear in the earnings statements. They are, however, included on the balance sheets.
- Current liabilities on the balance sheet include both current debts as well as the current portion of intermediate-term and long-term liabilities.
- Government payments include state program payments and those from FSA programs. Crop insurance indemnities are recorded as Crop Revenue.

Your Farm Credit team of ag finance specialists encourages you to review the following financial data thoughtfully and thoroughly. It allows you to identify your strengths and weaknesses and to improve your operation for the future.

TABLE A-1.

COMPARISON BETWEEN YEARS / Earnings Worksheet

	2019	2020	2021	2022	2023
Number of Farms	267	204	164	139	283
Average Number of Cows	600	685	568	821	726
Receipts					
Milk Sales	$2,966,932	$3,277,366	$2,823,528	$5,423,526	$4,127,552
Cattle Sales	173,905	222,798	178,352	325,937	397,364
Crop Sales	61,240	86,660	131,208	188,009	257,246
Government Payments	59,904	387,006	114,168	74,711	193,116
Other	101,902	121,123	116,440	209,355	322,102
CASH RECEIPTS	$3,363,883	$4,094,953	$3,363,696	$6,221,538	$5,297,380
Accrual Adjustments					
+ Change in Inventory-Raised Livestock	$31,735	$43,538	$1,136	$4,926	$726
VALUE OF FARM PRODUCTION (a)	$3,395,618	$4,138,491	$3,364,832	$6,226,464	$5,298,106
COST OF GOODS SOLD					
Chemicals & Sprays	$30,463	$40,486	$29,536	$56,649	$66,792
Custom Hire	125,235	146,854	89,176	165,842	178,596
Purchased Feed	974,821	1,176,693	1,012,176	1,635,432	1,438,932
Fertilizer & Lime	65,732	86,408	100,536	216,744	136,730
Freight & Trucking (Marketing)	176,247	216,074	189,144	289,813	355,740
Gasoline, Fuel & Oil	97,545	85,308	98,832	254,510	156,816
Hired Labor	504,463	593,447	502,112	629,707	514,734
Seed & Plants	67,810	87,770	64,752	116,852	121,000
Supplies	142,134	164,164	138,024	260,257	218,042
Veterinary, Medicine & Breeding	117,363	133,869	110,760	146,959	149,556
Cow Replacements	3,028	11,897	6,248	54,186	36,058
Total Cost of Goods Sold	$2,304,841	$2,742,970	$2,341,296	$3,826,951	$3,372,996
Gross Margin	$1,090,777	$1,395,521	$1,023,536	$2,399,513	$1,925,110
OVERHEAD					
Insurance	36,247	40,344	44,304	87,026	69,260
Interest	124,507	101,153	87,472	171,589	209,330
Rent	78,175	95,207	57,936	95,236	145,442
Repairs	187,387	266,248	208,456	363,703	302,500
Property & Misc. Taxes	45,177	47,416	43,736	78,816	65,340
Utilities	52,370	59,696	62,480	113,298	100,672
Other	48,600	65,418	56,800	201,966	265,958
Accrual Adjustments					
+ Depreciation	186,303	204,913	191,416	369,450	348,964
Total Overhead Expenses	$758,766	$880,395	$752,600	$1,481,084	$1,507,466
Total Farm Production Costs (b)	$3,063,607	$3,623,365	$3,093,896	$5,308,035	$4,880,462
NET FARM EARNINGS (a) - (b)	$332,011	$515,126	$270,936	$918,429	$417,644
- Family Living & Income Taxes	62,963	60,795	58,504	142,854	205,700
NET EARNINGS	**$269,048**	**$454,331**	**$212,432**	**$775,575**	**$211,944**
+ Net Nonfarm Income	13,357	13,063	22,720	48,439	48,642
NET HOUSEHOLD INCOME	$282,405	$467,394	$235,152	$824,014	$260,586

Note: Expenses are adjusted for changes in accounts payable, prepaid expenses, and supply inventories to remove the effects of tax planning and reflect only 1 year's expenses.

TABLE A-2.

COMPARISON BETWEEN YEARS / Earnings Worksheet Per Cwt.

	2019	2020	2021	2022	2023
Number of Farms	267	204	164	139	283
Average Number of Cows	600	685	568	821	726
Receipts			DOLLARS PER CWT. OF MILK		
Milk Sales	$19.18	$18.48	$19.21	$26.66	$22.75
Cattle Sales	1.12	1.25	1.22	1.60	2.19
Crop Sales	0.40	0.49	0.89	0.92	1.42
Government Payments	0.39	2.18	0.78	0.37	1.06
Other	0.65	0.69	0.79	1.03	1.78
CASH RECEIPTS	$21.74	$23.09	$22.89	$30.58	$29.20
Accrual Adjustments					
+ Change in Inventory-Raised Livestock	$0.21	$0.25	$0.01	$0.02	$0.00
VALUE OF FARM PRODUCTION (a)	$21.95	$23.34	$22.90	$30.60	$29.20
COST OF GOODS SOLD					
Chemicals & Sprays	$0.20	$0.23	$0.20	$0.28	$0.37
Custom Hire	0.81	0.83	0.61	0.82	0.98
Purchased Feed	6.30	6.64	6.90	8.04	7.93
Fertilizer & Lime	0.42	0.49	0.69	1.07	0.75
Freight & Trucking (Marketing)	1.14	1.22	1.29	1.42	1.96
Gasoline, Fuel & Oil	0.63	0.48	0.67	1.25	0.86
Hired Labor	3.26	3.35	3.42	3.10	2.84
Seed & Plants	0.44	0.50	0.44	0.57	0.67
Supplies	0.92	0.93	0.94	1.28	1.20
Veterinary, Medicine & Breeding	0.76	0.76	0.76	0.72	0.82
Cow Replacements	0.02	0.07	0.04	0.27	0.20
Total Cost of Goods Sold	$14.90	$15.50	$15.96	$18.82	$18.58
Gross Margin	$7.05	$7.84	$6.94	$11.78	$10.62
OVERHEAD					
Insurance	0.23	0.23	0.30	0.43	0.38
Interest	0.80	0.57	0.60	0.84	1.15
Rent	0.51	0.54	0.40	0.47	0.80
Repairs	1.21	1.50	1.42	1.79	1.67
Property & Misc. Taxes	0.29	0.27	0.30	0.39	0.36
Utilities	0.34	0.34	0.43	0.56	0.55
Other	0.31	0.34	0.38	0.99	1.49
Accrual Adjustments					
+ Depreciation	1.20	1.16	1.31	1.82	1.92
Total Overhead Expenses	$4.89	$4.95	$5.14	$7.29	$8.32
Total Farm Production Costs (b)	$19.79	$20.45	$21.10	$26.11	$26.90
NET FARM EARNINGS (a) - (b)	$2.16	$2.89	$1.80	$4.49	$2.30
- Family Living & Income Taxes	0.41	0.34	0.40	0.70	1.13
NET EARNINGS	**$1.75**	**$2.55**	**$1.40**	**$3.79**	**$1.17**
+ Net Nonfarm Income	0.09	0.07	0.16	0.24	0.27
NET HOUSEHOLD INCOME	$1.84	$2.62	$1.56	$4.03	$1.44

Note: Expenses adjusted for changes in accounts payable, prepaid expenses and supply inventories to remove the effects of tax planning and reflect only one year's expenses.

TABLE A-3.

COMPARISON BETWEEN YEARS / Balance Sheet Summary

	2019	2020	2021	2022	2023
Number of Farms	267	204	164	139	283
Average Number of Cows	600	685	568	821	726
			DOLLARS PER FARM		
Assets					
Livestock	$1,307,664	$1,499,770	$1,170,080	$1,751,193	$1,565,982
Feed & Crops	672,930	775,267	731,584	1,233,142	1,047,618
Machinery & Equipment	1,107,211	1,284,178	1,284,248	2,774,159	2,193,972
Farm–Land & Buildings	3,296,203	3,633,060	3,527,848	5,091,021	6,802,620
All Other	1,046,802	1,493,164	1,255,848	2,924,402	1,891,230
TOTAL ASSETS	7,430,810	8,685,439	7,969,608	13,773,917	13,501,422
TOTAL LIABILITIES	2,436,846	2,726,987	2,653,696	4,269,200	4,338,576
TOTAL NET WORTH	$4,993,964	$5,958,452	$5,315,912	$9,504,717	$9,162,846
			DOLLARS PER COW		
Assets					
Livestock	$2,179	$2,189	$2,060	$2,133	$2,157
Feed & Crops	1,122	1,132	1,288	$1,502	$1,443
Machinery & Equipment	1,845	1,875	2,261	$3,379	$3,022
Farm-Land & Buildings	5,494	5,304	6,211	$6,201	$9,370
All Other	1,745	2,180	2,211	$3,562	$2,605
TOTAL ASSETS	12,385	12,679	14,031	16,777	18,597
TOTAL LIABILITIES	4,061	3,981	4,672	5,200	5,976
TOTAL NET WORTH	$8,323	$8,698	$9,359	$11,577	$12,621
			DOLLARS PER CWT. OF MILK		
Assets					
Livestock	$8.45	$8.46	$7.98	$8.61	$8.23
Feed & Crops	4.35	4.37	4.99	$6.06	$5.51
Machinery & Equipment	7.16	7.24	8.76	$13.64	$11.54
Farm–Land & Buildings	21.31	20.49	24.06	$25.03	$35.77
All Other	6.77	8.42	8.56	$14.38	$9.94
TOTAL ASSETS	$48.04	$48.99	$54.34	$67.72	$70.99
TOTAL LIABILITIES	15.75	15.38	18.09	20.99	22.81
TOTAL NET WORTH	$32.28	$33.61	$36.25	$46.73	$48.18
PERCENT NET WORTH	67%	69%	67%	69%	68%

TABLE A-4.

COMPARISON BETWEEN YEARS / Evaluation Factors

	2019	2020	2021	2022	2023
Number of Farms	267	204	164	139	283
Average Number of Cows	600	685	568	821	726
Worker Equivalents	11.6	12.7	10.9	14.6	14.0
Cows Per Worker	52	54	52	50	49
Pounds of Milk Sold Per Worker	1,337,028	1,391,525	1,343,002	1,254,778	1,224,461
Pounds of Milk Sold	15,469,414	17,728,029	14,665,582	20,340,275	18,142,014
Pounds of Milk Sold Per Cow	25,793	25,884	25,823	24,775	24,989
Milk Price Per Cwt.	$19.18	$18.48	$19.21	$26.66	$22.76
Total Crop Acres	1,194	1,314	1,240	1,157	1,113
Crop Acres Per Cow	2.0	1.9	2.2	1.9	1.8
Feed Cost Per Cow	$1,625	$1,718	$1,782	$1,992	$1,982
Feed as a Percent of Milk Sales	33%	36%	36%	30%	35%
Feed & Crop Expense Per Cow*	$1,898	$2,031	$2,125	$2,468	$2,429
Feed & Crop Expense Per Cwt.	$7.36	$7.85	$8.23	$9.91	$9.72
Machinery Costs Per Cow**	$837	$853	$874	$1,246	$1,360
Machinery Costs Per Cwt.	$3.24	$3.30	$3.38	$5.16	$5.48
Labor & Family Living Per Cow	$941	$952	$983	$937	$992
Labor & Family Living Per Cwt.	$3.65	$3.68	$3.81	$3.81	$3.96
Assets Per Cow	$12,385	$12,679	$14,031	$16,777	$18,597
Debt Per Cow	$4,061	$3,981	$4,672	$5,200	$5,976
Net Worth Per Cow	$8,323	$8,698	$9,359	$11,577	$12,621
Percent Net Worth	67%	69%	67%	69%	68%

*Feed & Crop Expense = Feed + Seed & Plants + Fertilizer + Chemicals & Spray.

**Machinery Costs = Machinery Repairs + Fuel & Oil + Custom Hire + Machinery & Equipment Depreciation.

TABLE B-1.

2023 DATA BY HERD SIZE / Earnings Worksheet

	299 COWS OR FEWER	300-699 COWS	700 COWS OR MORE	ALL FARMS
Number of Farms	123	59	101	283
Average Number of Cows	168	471	1,540	726
Receipts		DOLLARS PER COW		
Milk Sales	$5,283	$5,734	$6,039	$5,685
Cattle Sales	$498	440	704	547
Crop Sales	$491	378	194	354
Government Payments	$332	311	155	266
Other	$659	324	348	444
CASH RECEIPTS	$7,263	$7,187	$7,440	$7,297
Accrual Adjustments				
+ Change in Inventory-Raised Livestock	-$3	$22	-$16	$1
VALUE OF FARM PRODUCTION (a)	$7,260	$7,209	$7,424	$7,298
COST OF GOODS SOLD				
Chemicals & Sprays	$101	$93	$82	$92
Custom Hire	$238	260	240	246
Purchased Feed	$1,750	1,985	2,211	1,982
Fertilizer & Lime	$211	185	169	188
Freight & Trucking (Marketing)	$510	490	470	490
Gasoline, Fuel & Oil	$219	233	196	216
Hired Labor	$361	766	1,000	709
Seed & Plants	$184	180	136	167
Supplies	$320	322	259	300
Veterinary, Medicine & Breeding	$191	191	236	206
Cow Replacements	$30	46	73	50
Total Cost of Goods Sold	$4,115	$4,751	$5,072	$4,646
Gross Margin	$3,145	$2,458	$2,352	$2,652
OVERHEAD				
Insurance	$87	110	89	95
Interest	$343	279	243	288
Rent	$231	170	200	200
Repairs	$398	445	407	417
Property & Misc. Taxes	$105	101	64	90
Utilities	$149	128	139	139
Other	$517	301	281	366
Accrual Adjustments				
+ Depreciation	$554	524	364	481
Total Overhead Expenses	$2,384	$2,058	$1,787	$2,076
Total Farm Production Costs (b)	$6,499	$6,809	$6,859	$6,722
NET FARM EARNINGS (a) - (b)	$761	$400	$565	$575
- Family Living & Income Taxes	$496	209	145	283
NET EARNINGS	**$265**	**$191**	**$420**	**$292**
+ Net Nonfarm Income	$111	70	20	67
NET HOUSEHOLD INCOME	$376	$261	$440	$359

Note: Expenses adjusted for changes in accounts payable, prepaid expenses, and supply inventories to remove the effects of tax planning and reflect only one year's expenses.

TABLE B-2.

2023 DATA BY HERD SIZE / Balance Sheet Summary

	299 COWS OR FEWER	300-699 COWS	700 COWS OR MORE	ALL FARMS
Number of Farms	123	59	101	283
Average Number of Cows	168	471	1,540	726
		ASSETS PER COW		
Cash & Accounts Receivable	$783	$570	$688	$680
Feed & Crop Inventory	$1,496	1,479	1,355	1,443
Supplies & Prepaid Expenses	$223	202	311	245
Other Current Assets	$144	109	290	181
TOTAL CURRENT ASSETS	$2,646	$2,360	$2,644	$2,550
Dairy Livestock	$2,116	$2,152	$2,202	$2,157
Machinery & Equipment	$3,834	3,022	2,209	3,022
Other Intermediate Assets	$1,794	1,010	495	1,100
TOTAL INTERMEDIATE ASSETS	$7,744	$6,184	$4,906	$6,278
Farm Real Estate	$13,422	$8,051	$6,637	$9,370
Other Fixed Assets	$647	161	388	399
TOTAL FIXED ASSETS	$14,069	$8,212	$7,025	$9,769
TOTAL ASSETS	$24,459	$16,756	$14,575	$18,597
		LIABILITIES PER COW		
Accounts Payable	$376	$168	$204	$249
Farm Credit Short-Term Loans	$127	171	204	167
Other Current Liabilities	$620	541	274	478
TOTAL CURRENT LIABILITIES	$1,123	$880	$682	$895
Noncurrent Liabilities	$6,819	4,082	4,341	5,081
TOTAL LIABILITIES	$7,942	$4,962	$5,023	$5,976
		NET WORTH PER COW		
OWNER'S NET WORTH	$16,517	$11,794	$9,552	$12,621
TOTAL LIABILITIES & NET WORTH	$24,459	$16,756	$14,575	$18,597
PERCENT NET WORTH	68%	70%	66%	68%

TABLE B-3.

2023 DATA BY HERD SIZE / Evaluation Factors

	299 COWS OR FEWER	300-699 COWS	700 COWS OR MORE	ALL FARMS
Number of Farms	123	59	101	283
Average Number of Cows	168	471	1,540	726
Worker Equivalents	3.9	9.0	29.2	14.0
Cows Per Worker	43	52	53	49
Pounds of Milk Sold Per Worker	993,138	1,310,008	1,417,644	1,224,461
Pounds of Milk Sold Per Farm	3,873,240	11,790,072	41,395,200	18,142,014
Pounds of Milk Sold Per Cow	23,055	25,032	26,880	24,989
Milk Price Per Cwt.	$22.91	$22.91	$22.47	$22.76
Total Crop Acres	349	910	2,081	1,113
Crop Acres Per Cow	2.1	1.9	1.4	1.8
Crop Acres Per Worker	89	101	71	87
Feed Cost Per Cow	$1,750	$1,985	$2,211	$1,982
Feed Cost Per Cwt.	$7.59	$7.93	$8.23	$7.93
Feed as a Percent of Milk Sales	33%	35%	37%	35%
Feed & Crop Expense Per Cow[1]	$2,246	$2,443	$2,598	$2,429
Feed & Crop Expense Per Cwt.	$9.74	$9.76	$9.67	$9.72
Machinery Cost Per Cow[2]	$1,409	$1,462	$1,207	$1,360
Machinery Costs Per Cwt.	$6.11	$5.84	$4.49	$5.44
Labor & Family Living Per Cow	$857	$975	$1,145	$992
Labor & Family Living Per Cwt.	$3.72	$3.90	$4.26	$3.97
Assets Per Cow	$24,459	$16,756	$14,575	$18,597
Debt Per Cow	$7,942	$4,962	$5,023	$5,976
Net Worth Per Cow	$16,517	$11,794	$9,552	$12,621
Return on Assets[3]	2.5%	4.5%	4.5%	3.1%
Return on Equity[4]	1.6%	1.6%	4.4%	2.3%

[1]Feed & Crop Expense = Feed + Seed & Plants + Fertilizer + Chemicals & Sprays.
[2]Machinery Cost = Machinery Repairs + Custom Hire + Fuel & Oil + Machinery & Equipment Depreci
[3]Return on Assets = (Net Earnings + Interest) ÷ Average Farm Assets.
[4]Return on Equity = Net Earnings ÷ Average Farm Net Worth.

TABLE C-1.

2023 DATA BY PROFIT GROUPS / Earnings Worksheet

Average Number of Cows	743	850	789	656	726
Receipts			DOLLARS PER COW		
Milk Sales	$5,567	$5,817	$5,971	$6,269	$5,685
Cattle Sales	507	528	707	640	547
Crop Sales	335	251	225	299	354
Government Payments	219	205	203	208	266
Other	383	315	350	331	444
CASH RECEIPTS	$7,011	$7,116	$7,456	$7,747	$7,296
Accrual Adjustments					
+ Change in Inventory-Raised Livestock	$17	-$16	$18	$5	$1
VALUE OF FARM PRODUCTION (a)	$7,028	$7,100	$7,474	$7,752	$7,297
COST OF GOODS SOLD					
Chemicals & Sprays	$99	$102	$101	$82	$92
Custom Hire	165	280	217	257	246
Purchased Feed	2,112	2,168	2,061	2,138	1,982
Fertilizer & Lime	188	134	177	245	188
Freight & Trucking (Marketing)	450	526	550	437	490
Gasoline, Fuel & Oil	207	193	208	213	216
Hired Labor	865	862	882	847	709
Seed & Plants	167	121	153	160	167
Supplies	286	302	276	261	300
Veterinary, Medicine & Breeding	237	212	228	209	206
Cow Replacements	83	103	45	9	50
Total Cost of Goods Sold	$4,859	$5,003	$4,898	$4,858	$4,646
Gross Margin	$2,169	$2,097	$2,576	$2,894	$2,651
OVERHEAD					
Insurance	102	102	83	85	95
Interest	310	252	220	224	288
Rent	183	241	177	236	200
Repairs	389	394	434	403	417
Property & Misc. Taxes	76	76	62	71	90
Utilities	147	127	136	133	139
Other	560	227	166	145	366
Accrual Adjustments					
+ Depreciation	479	403	389	399	481
Total Overhead Expenses	$2,246	$1,822	$1,667	$1,696	$2,076
Total Farm Production Costs (b)	$7,105	$6,825	$6,565	$6,554	$6,722
NET FARM EARNINGS (a) - (b)	-$77	$275	$909	$1,198	$575
- Family Living & Income Taxes	256	180	196	207	283
NET EARNINGS	**-$333**	**$95**	**$713**	**$991**	**$292**
+ Net Nonfarm Income	54	46	31	59	67
NET HOUSEHOLD INCOME	-$279	$141	$744	$1,050	$359

Note: Expenses adjusted for changes in accounts payable, prepaid expenses and supply inventories to remove the effects of tax planning and reflect only one year's expenses.

TABLE C-2.

2023 DATA BY PROFIT GROUPS / Balance Sheet Summary

	PROFIT GROUP				
	BOTTOM 25%	THIRD 25%	SECOND 25%	TOP 25%	ALL FARMS
Number of Farms	71	71	71	70	283
Average Number of Cows	743	850	789	656	726
	ASSETS PER COW				
Cash & Accounts Receivable	$520	$636	$645	$1,008	$680
Feed & Crop Inventory	1,344	1,290	1,420	1,443	1,443
Supplies & Prepaid Expenses	183	221	269	363	245
Other Current Assets	180	189	197	564	181
TOTAL CURRENT ASSETS	$2,227	$2,336	$2,531	$3,378	$2,549
Dairy Livestock	$2,225	$1,963	$2,257	$2,334	$2,157
Machinery & Equipment	2,445	2,259	2,500	2,991	3,022
Other Intermediate Assets	1,174	899	695	802	1100
TOTAL INTERMEDIATE ASSETS	$5,844	$5,121	$5,452	$6,127	$6,279
Farm Real Estate	$8,245	$6,848	$7,452	$7,934	$9,370
Other Fixed Assets	123	509	667	1120	399
TOTAL FIXED ASSETS	$8,368	$7,357	$8,119	$9,054	$9,769
TOTAL ASSETS	$16,439	$14,814	$16,102	$18,559	$18,597
	LIABILITIES PER COW				
Accounts Payable	$232	$283	$91	$100	$249
Farm Credit Short-Term Loans	274	184	194	157	167
Other Current Liabilities	497	495	449	525	478
TOTAL CURRENT LIABILITIES	$1,003	$962	$734	$782	$894
Noncurrent Liabilities	$4,991	$4,443	$3,831	$4,235	$5,081
TOTAL LIABILITIES	$5,994	$5,405	$4,565	$5,017	$5,975
	NET WORTH PER COW				
OWNER'S NET WORTH	$10,445	$9,409	$11,537	$13,542	$12,622
TOTAL LIABILITIES & NET WORTH	$16,439	$14,814	$16,102	$18,559	$18,597
PERCENT NET WORTH	64%	64%	72%	73%	68%

TABLE C-3.

2023 DATA BY PROFIT GROUPS / Evaluation Factors

	PROFIT GROUP				
	BOTTOM 25%	THIRD 25%	SECOND 25%	TOP 25%	ALL FARMS
Number of Farms	71	71	71	70	283
Average Number of Cows	743	850	789	656	726
Worker Equivalents	14.2	15.9	15.1	12.1	14.0
Cows Per Worker	52	51	51	52	49
Pounds of Milk Sold Per Worker	1,320,806	1,333,864	1,361,873	1,397,032	1,224,461
Pounds of Milk Sold Per Farm	18,755,445	21,208,438	20,564,282	16,904,087	18,142,014
Pounds of Milk Sold Per Cow	25,243	24,951	26,064	25,768	24,989
Milk Price Per Cwt.	$21.16	$22.11	$22.33	$23.29	$22.76
Total Crop Acres	894	1,042	859	757	1,113
Crop Acres Per Cow	1.2	1.2	1.1	1.2	1.8
Crop Acres Per Worker	63	66	57	63	87
Feed Cost Per Cow	$2,112	$2,168	$2,061	$2,138	$1,982
Feed Cost Per Cwt.	$8.37	$8.69	$7.91	$8.30	$7.93
Feed as a Percent of Milk Sales	38%	37%	35%	34%	35%
Feed & Crop Expense Per Cow[1]	$2,566	$2,525	$2,492	$2,625	$2,429
Feed & Crop Expense Per Cwt.	$10.17	$10.12	$9.56	$10.19	$9.72
Machinery Cost Per Cow[2]	$1,240	$1,270	$1,248	$1,272	$1,360
Machinery Cost Per Cwt.	$4.91	$5.09	$4.79	$4.94	$5.44
Labor & Family Living Per Cow	$1,121	$1,042	$1,078	$1,054	$992
Labor & Family Living Per Cwt.	$4.44	$4.18	$4.14	$4.09	$3.97
Assets Per Cow	$16,439	$14,814	$16,102	$18,559	$18,597
Debt Per Cow	$5,994	$5,405	$4,565	$5,017	$5,976
Net Worth Per Cow	$10,445	$9,409	$11,537	$13,542	$12,621
Return on Assets[3]	-0.1%	2.3%	5.8%	6.5%	3.1%
Return on Equity[4]	-3.2%	1.0%	6.2%	7.3%	2.3%

[1]Feed & Crop Expense = Feed + Seed & Plants + Fertilizer + Chemicals & Spray.

[2]Machinery Cost = Machinery Repairs + Custom Hire + Fuel & Oil + Machinery & Equipment Depreciation.

[3]Return on Assets = (Net Earnings + Interest) ÷ Average Farm Assets.

[4]Return on Equity = Net Earnings ÷ Average Farm Net Worth.

TABLE D-1.

2023 DATA BY REGIONS / Earnings Worksheet

	REGIONS		
	NY & NEW ENGLAND	PENNSYLVANIA	ALL FARMS
Number of Farms	140	143	283
Average Number of Cows	810	642	726
Receipts	DOLLARS PER COW		
Milk Sales	$5,676	$5,694	$5,685
Cattle Sales	577	517	547
Crop Sales	339	369	354
Government Payments	231	301	266
Other	560	326	444
CASH RECEIPTS	$7,383	$7,207	$7,296
Accrual Adjustments			
+ Change in Inventory-Raised Livestock	$4	-$2	$1
VALUE OF FARM PRODUCTION (a)	$7,387	$7,205	$7,297
COST OF GOODS SOLD			
Chemicals & Sprays	$56	$128	$92
Custom Hire	210	282	246
Purchased Feed	2,058	1,905	1,982
Fertilizer & Lime	199	178	188
Freight & Trucking (Marketing)	412	567	490
Gasoline, Fuel & Oil	242	190	216
Hired Labor	771	646	709
Seed & Plants	151	182	167
Supplies	306	298	300
Veterinary, Medicine & Breeding	194	217	206
Cow Replacements	38	56	50
Total Cost of Goods Sold	$4,637	$4,649	$4,646
Gross Margin	$2,750	$2,556	$2,651
OVERHEAD			
Insurance	90	101	95
Interest	351	225	288
Rent	164	236	200
Repairs	424	409	417
Property & Misc. Taxes	96	75	90
Utilities	128	149	139
Other	575	157	366
Accrual Adjustments			
Depreciation	446	530	481
Total Overhead Expenses	$2,274	$1,882	$2,076
Total Farm Production Costs (b)	$6,911	$6,531	$6,722
NET FARM EARNINGS (a) - (b)	$476	$674	$575
- Family Living & Income Taxes	176	390	283
NET EARNINGS	**$300**	**$284**	**$292**
+ Net Nonfarm Income	56	77	67
NET HOUSEHOLD INCOME	$356	$361	$359

Note: Expenses adjusted for changes in accounts payable, prepaid expenses and supply inventories to remove the effects of tax planning and reflect only one year's expenses.

TABLE D-2.

2023 DATA BY REGIONS / Balance Sheet Summary

	REGIONS		
	NY & NEW ENGLAND	PENNSYLVANIA	ALL FARMS
Number of Farms	140	143	283
Average Number of Cows	810	642	726
	ASSETS PER COW		
Cash & Accounts Receivable	$801	$559	$680
Feed & Crop Inventory	1,416	1,471	1,443
Supplies & Prepaid Expenses	192	298	245
Other Current Assets	314	47	181
TOTAL CURRENT ASSETS	$2,723	$2,375	$2,549
Dairy Livestock	$2,299	$2,013	$2,157
Machinery & Equipment	3,232	2,811	3,022
Other Intermediate Assets	1,475	724	1,100
TOTAL INTERMEDIATE ASSETS	$7,006	$5,548	$6,279
Farm Real Estate	$7,807	$10,932	$9,370
Other Fixed Assets	559	237	399
TOTAL FIXED ASSETS	$8,366	$11,169	$9,769
TOTAL ASSETS	$18,095	$19,092	$18,597
	LIABILITIES PER COW		
Accounts Payable	$274	$224	$249
Farm Credit Short-Term Loans	109	225	167
Other Current Liabilities	640	317	478
TOTAL CURRENT LIABILITIES	$1,023	$766	$894
Noncurrent Liabilities	5,525	4,636	5081
TOTAL LIABILITIES	$6,548	$5,402	$5,975
	NET WORTH PER COW		
OWNER'S NET WORTH	$11,547	$13,690	$12,622
TOTAL LIABILITIES & NET WORTH	$18,095	$19,092	$18,597
PERCENT NET WORTH	64%	72%	68%

*Regions are divided by state not Federal Milk Orders.

TABLE D-3.

2023 DATA BY REGIONS / Evaluation Factors

	REGIONS[1]		
	NY & NEW ENGLAND	PENNSYLVANIA	ALL FARMS
Number of Farms	140	143	283
Average Number of Cows	810	642	726
Worker Equivalents	14.6	13.4	14.0
Cows Per Worker	50	45	49
Pounds of Milk Sold Per Worker	1,254,778	1,150,287	1,224,461
Pounds of Milk Sold Per Farm	20,340,275	16,654,973	18,142,014
Pounds of Milk Sold Per Cow	24,775	25,203	24,989
Milk Price Per Cwt.	$22.93	$22.60	$22.76
Total Crop Acres[2]	1,157	1,070	1,113
Crop Acres Per Cow	1.4	2.0	1.8
Crop Acres Per Worker	79	90	87
Feed Cost Per Cow	$1,992	$1,905	$1,982
Feed Cost Per Cwt.	$8.04	$7.56	$7.93
Feed as a Percent of Milk Sales	30%	33%	35%
Feed & Crop Expense Per Cow[3]	$2,468	$2,393	$2,429
Feed & Crop Expense Per Cwt.	$9.96	$9.49	$9.72
Machinery Cost Per Cow[4]	$1,246	$1,395	$1,360
Machinery Cost Per Cwt.	$5.03	$5.54	$5.44
Labor & Family Living Per Cow	$937	$968	$992
Labor & Family Living Per Cwt.	$3.78	$3.84	$3.97
Assets Per Cow	$16,777	$19,114	$18,597
Debt Per Cow	$5,200	$5,419	$5,976
Net Worth Per Cow	$11,577	$13,695	$12,621
Return on Assets[5]	6.9%	2.8%	3.1%
Return on Equity[6]	8.2%	2.2%	2.3%

[1]Regions are divided by states not Federal Milk Orders.

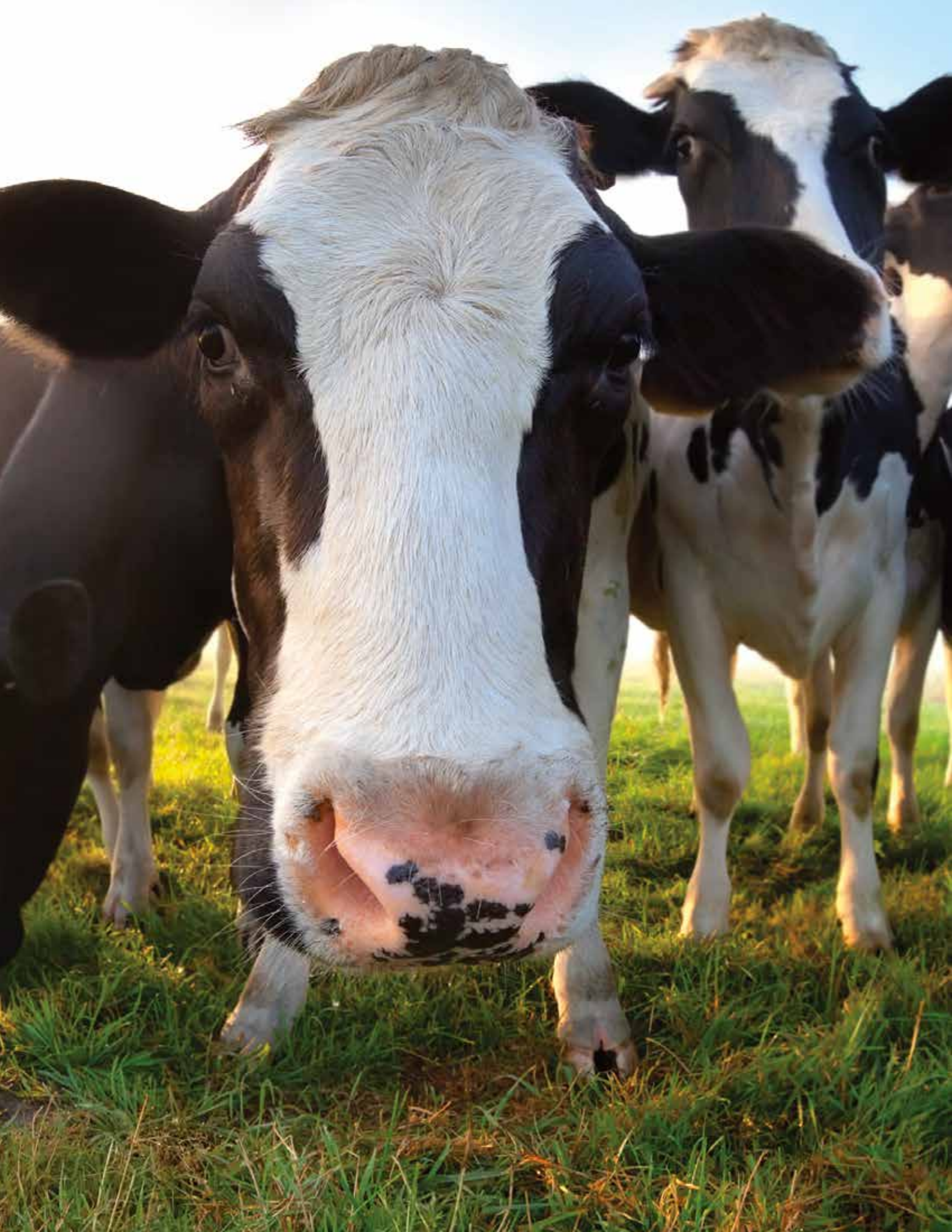
[2]Total Crop Acres For NY & New England includes both owned and rented land. For PA, it includes owned land only.

[2]Feed & Crop Expense = Feed + Seed & Plants + Fertilizer + Chemicals & Spray.

[3]Machinery Cost = Machinery Repairs + Custom Hire + Fuel & Oil + Machinery & Equipment Depreciation.

[4]Return on Assets = (Net Earnings + Interest) ÷ Average Farm Assets. In contrast, the Balance Sheet shows the year-end values.

[5]Return on Equity = Net Earnings ÷ Average Farm Net Worth.



GLOSSARY

Net Cash Farm Income

A measure of farm profitability in terms of cash flow and net cash farm income, reflects the ability of a farm business to meet its cost of production through cash income. It is equal to:

Cash Receipts — Adjusted Cash Operating Expenses

Accrual Adjusted Operating Expenses

Farm operating expenses adjusted to reflect 12 months of operation and to remove the effect of tax planning. Adjustments account for changes in supply inventories, accounts payable and prepaid expenses. Operating expenses do not include family living costs or capital expenditures.

Net Household Income

An accrual measure of overall household earnings, reflecting all revenues and costs, including both farm and non-farm sources. It is equal to:

Net Cash Farm Income
+ Change in Accounts Receivable
+ Change in Production Inventories
+ Net Nonfarm & Noncash Income
- Depreciation
- Family Living Expenses & Taxes

Return on Assets

Measures profit earned relative to total farm assets, including assets financed with debt and those financed with farm equity. Return on assets is equal to:

$$\frac{\text{Net Earnings + Interest Expense}}{\text{Average Assets}}$$

Return on Equity

Measures profit earned relative to a farmer's equity investment in the farm operation. Return on equity is equal to:

$$\frac{\text{Net Earnings}}{\text{Average Net Worth}}$$

Debt Capacity

The maximum amount of capital debt that can be repaid from a farm's cash flow, the calculation of debt capacity is described in the summary.

Reserve Debt Capacity

The amount of additional capital debt (beyond that already incurred) that a farm can service from cash flow. Reserve debt capacity represents a farm's buffer against financial adversity. It is equal to:

Debt Capacity – Capital Debt

Overhead Costs

Costs that do not vary with a change in production output, such as depreciation, interest, repairs, taxes and insurance, etc.

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