2013

# *Northeast* DAIRY FARM SUMMARY

# 2013 Northeast Dairy Farm Summary

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

# HIGHLIGHTS OF THE 2013 NORTHEAST DAIRY FARM SUMMARY

- 517 dairy farms participated in the 2013 Northeast Dairy Farm Summary.
- Profitability improved by 18 percent in 2013. Net earnings rose to $490 per cow in 2013, up from $415 per cow in 2012. Farm milk price increased by $1.56 per hundredweight (cwt.) to $21.30.
- Many costs were also up in 2013, reaching record levels in some categories. Total cost of production increased to $22.82 per cwt. in 2013, including depreciation and family living.
- Net cost of production (NCOP) was $19.23 per cwt., $1 higher than 2012.
- Specific operating cost categories also increased in 2013. Feed expense increased from $1,767 per cow in 2012 to $1,849 in 2013. Labor, a dairy farm's second greatest expense, was up 2 percent and crop inputs, such as fertilizer and seed, were up 8 percent per cow.
- Productivity measures were mixed. Per cow production was up by 1.3 percent from 2012 at 23,848 pounds (lbs.). Milk sold per worker was down 1.7 percent to 1,097,288 lbs.
- Cash flow was more than sufficient to meet all financial commitments (e.g., operating expenses, debt repayment, family living and income taxes) and to cover some capital purchases.
- Percent net worth increased to 73 percent. Debt-per-cow increased from $3,136 per cow to $3,384.

## PROFILE OF THE AVERAGE DAIRY FARMER

| | 2012 | 2013 |
|---|---|---|
| Number of Cows | 343 | 315 |
| Milk Sold per Cow | 23,552 lbs. | 23,848 lbs. |
| Milk Sold per Worker | 1,115,785 lbs. | 1,097,288 lbs. |
| Milk Price per Cwt. | $19.74 | $21.30 |
| NCOP per Cwt. | $18.23 | $19.23 |
| Net Worth | 72% | 73% |
| Net Earnings per Cow | $415 | $490 |
| Return on Assets | 4.7% | 4.8% |

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# INTRODUCTION

The purpose of Farm Credit's annual Dairy Farm Summary (DFS) is to assess the financial health and progress of Northeast dairy farm businesses. It is intended to provide dairy producers, Farm Credit personnel, Northeast public policymakers and dairy leaders with a better understanding of the current status and future prospects of the Northeast's largest farm industry.

As a major regional summary of actual dairy farm business results, the Dairy Farm Summary is a unique annual project within the U.S. dairy industry. It is the result of cooperation and hard work by many people. We are grateful, first and foremost, to the 517 dairy producers who allowed their financial and production records to be used in this study. Further, we appreciate the teamwork and timeliness of Farm Credit staff across the Northeast who helped customers provide that information. The DFS contains five years of financial data for dairy farms in New York, New England and New Jersey.

We believe this sample of 517 farm operations represents a solid cross section of better-than-average Northeast dairy farm businesses, most of which maintain loan relationships with Farm Credit. All farms received the majority of their income from milk sales, but many farms have additional business income, such as custom work or crop sales. We have purposely not excluded these farms from the sample (unless such income comprises a majority of farm income) as we feel it reflects the diverse face of Northeast dairying, where many producers have added supplementary income streams to increase earnings.

Partnerships and corporations were adjusted to a sole proprietor basis for consistency. Farms with unusual events, such as a large expansion, a major herd-health problem, an inheritance, significant unexplained gains or losses (>10 percent 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. This approach ensures a high level of integrity for the financial results presented in the 2013 Dairy Farm Summary.

The DFS tends to focus discussion on the "average farm," which, in reality, does not exist. By focusing on the average, we are able to highlight changes: 1) of Northeast dairy farms over time; 2) within individual herd-size groups; and 3) within the top and bottom profitability groups. While the use of averages leads to an effective discussion with respect to change, it tends to minimize both the best and worst conditions experienced by farms within the sample, as it pushes everything to the mathematical middle. This is again true in a year such as 2013. While the "average farm" had $490 per cow in net income in 2013, 88 farms (17 percent) in our sample had negative net farm income. Focusing on average results belies the fact that some producers, of all sizes, still struggle to make a profit. It should also be noted that the DFS benchmark uses weighted averages based on hundredweights (cwts.) of milk sold.

Without question, navigating through the past decade has been challenging for dairy farm management. As you read this summary, it is important to keep the following in mind:

- Milk prices rose significantly in 2013. Costs of production, particularly feed and crop input costs, increased to a lesser extent.
- 2012 marked a "soft landing" for Northeast dairy farmers, if you believe in three-year cycles. Net earnings fell from $797 in 2011 to $415 in 2012, a 48 percent decline. This was still a healthy level for dairy's down year. In 2013, milk prices rebounded and net earnings subsequently rose to $490.
- Debt per cow increased 8 percent in 2013, from the previous year.
- Cash flow for many farms supported greater capital replacement. Capital purchases increased roughly 5 percent from the prior year at $813 per cow.

## A CHANGE TO THE DAIRY FARM SUMMARY

We are using a gross margin format in our "1" tables this year, starting with A-1. The gross margin format separates expenses into variable (cost of goods sold) and fixed (overhead) costs. Variable costs are those that vary directly with quantity produced, such as feed and labor. Fixed costs are those that generally do not change with incremental adjustments in production, such as property taxes and insurance.

The gross margin format helps us look deeper into the earnings statement. When looking at cost of goods sold and gross margin, we can gain insight into how efficient farms are at converting raw materials into finished product (production efficiency). When looking at overhead costs, we can gain insight into how effectively farms are at utilizing their capital investment in land, buildings and equipment (capital efficiency).

# Analysis of 2013

# PROFITABILITY CLIMBED IN 2013

In 2013, profitability climbed for the Northeast dairy industry with an increase of $75 in average net earnings per cow. Net earnings were $490 per cow, bringing the three-year average to $567.

Income was up as the milk price rose by $1.56 per cwt. to an average of $21.30. Cost of production increased as well by $1 per cwt. to $19.23, preventing producers from realizing the full gain from the higher milk price.

Nonetheless, in terms of actual (not adjusted for inflation) dollars, 2013 was the fourth most profitable year in the history of the DFS, after 2007, 2011 and 2004.

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 relative to the size of the operation and includes all sources of income, including nonfarm sources.
- **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 how it might pay off if invested another way.

The importance of risk management cannot be overstated given the year-to-year fluctuations in milk price, cost of inputs and profitability experienced by the Northeast dairy industry. That a single year does not provide an accurate picture of the industry's long-term operating performance is still true. To further illustrate, when ranked, four of the last eight years account for both the top two years for profitability in the DFS history and also for the bottom two. Given these extremes, multiyear averages create a more accurate picture of the industry. If we look at both a shorter- and longer-term average, we see similar results (Figure 2A). Continued year-to-year volatility confirms the challenges and opportunities that Northeast dairy producers face. The reality is that higher average returns over the course of the cycle may be possible for those who are able to manage the ups and downs.

*Figure 1*

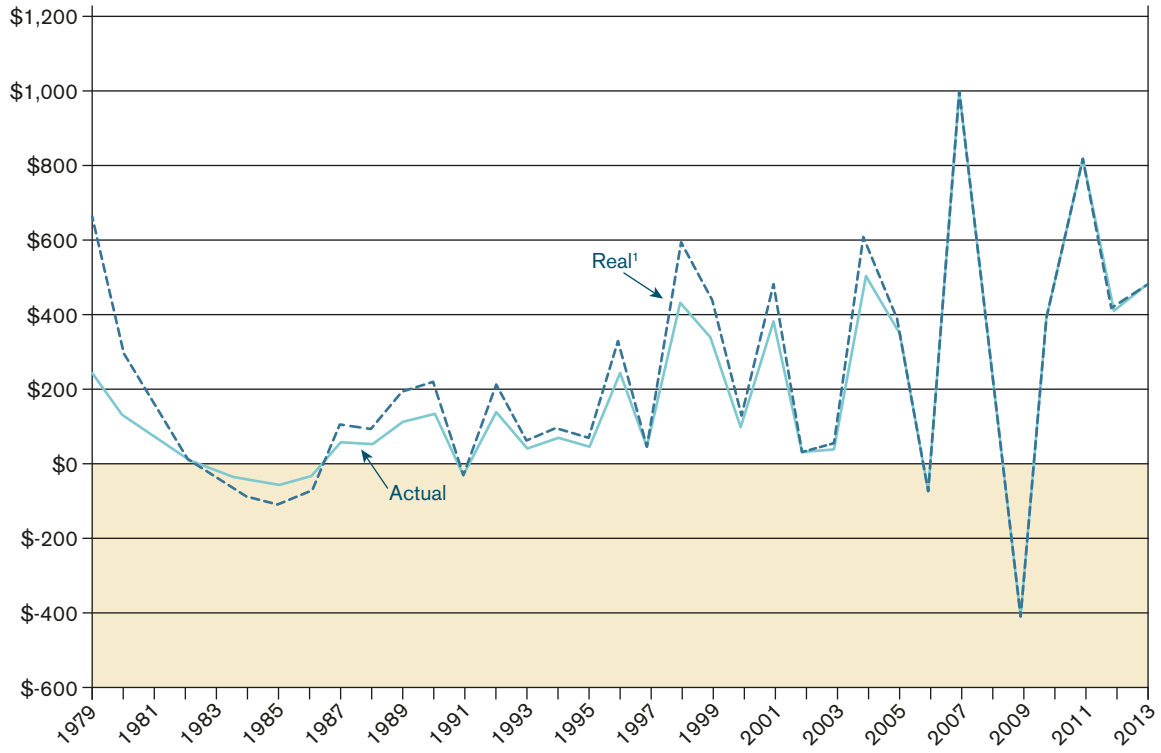
## DAIRY FARM PROFITABILITY

| | Net Earnings per Cow[1] | Return on Assets[2] | Return on Equity[3] |
|---|---|---|---|
| **2009** | **$ -386** | **-2.6%** | **-5.4%** |
| **2010** | **$ 396** | **5.2%** | **5.8%** |
| **2011** | **$ 797** | **8.4%** | **10.7%** |
| **2012** | **$ 415** | **4.7%** | **5.0%** |
| **2013** | **$ 490** | **4.8%** | **5.3%** |
| **3-Year Average** | **$ 567** | **6.0%** | **7.0%** |
| **5-Year Average** | **$ 342** | **4.1%** | **4.3%** |

[1] Net earnings includes 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




[1] Real price is actual price adjusted for inflation.

*Figure 2A*

## COMPARISON OF MULTIYEAR AVERAGES

| | Three-Year Average | Five-Year Average | Ten-Year Average |
|---|---|---|---|
| Net Earnings per Cow | **$567** | **$342** | **$379** |
| Return on Assets | **6.0%** | **4.1%** | **5.1%** |
| Return on Equity | **7.0%** | **4.3%** | **5.4%** |

It is important to differentiate net earnings (profit) from cash flow. Farmers 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 most complete picture of a farm's profitability by adjusting cash farm income and expenses to reflect changes in inventories, accounts receivable, accounts payable and prepaid expenses. (See Glossary.)

## MILK PRICE RISES

The average farm milk price at $21.30 per cwt. was up nearly 8 percent from 2012's $19.74. It was $2.49 above the five-year average of $18.81/cwt. (Figure 3A). In terms of actual milk prices, 2013 ranked third highest in the 32 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 3B). In terms of "real" inflation-adjusted rankings, 2013 drops to 14th. The first year of the DFS, 1979, ranks first. Milk Income Loss Contract (MILC) Program payments were triggered in the first seven months of 2013.

Monthly milk price (Boston blend) began 2013 at a reasonably strong $19.73/cwt. The monthly price fell for a few months, dipping to $19.32 in March before recovering to $19.78 in May. It then increased each month, peaking in December at $21.79. The average Boston blend price for 2013 was $20.25. Several factors contributed to increased milk price volatility in recent years. Changes in export markets and domestic demand as well as shifts in supply affect prices. Increased global market activity quickened the pace by which production is required to adjust, further contributing to price volatility. Investment decisions should include an analysis of management's ability to cope with price and earnings volatility.

*Figure 3A*

## FARM MILK PRICES PER CWT.

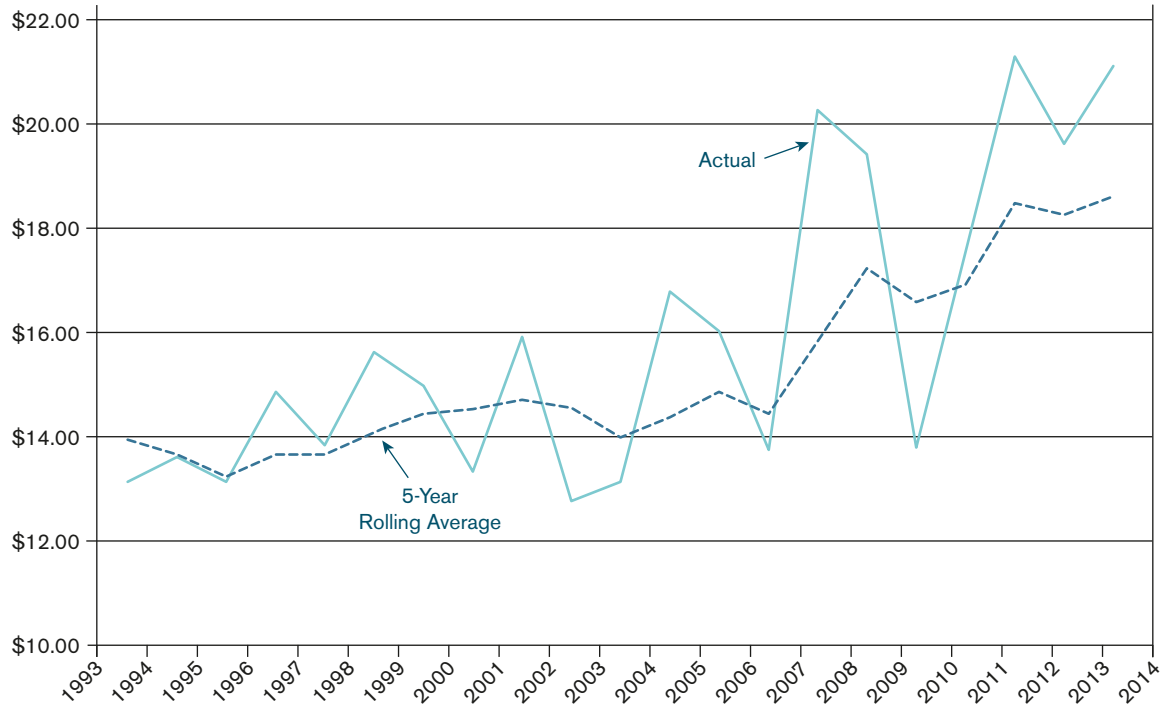
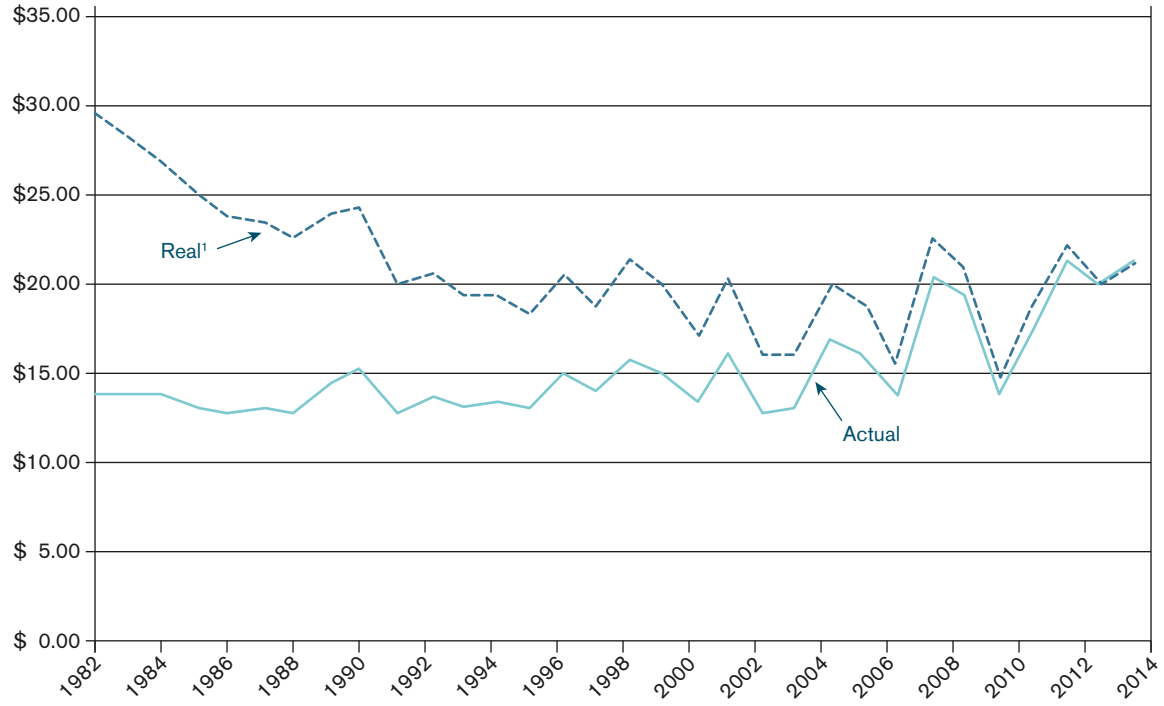



*Figure 3B*

## FARM MILK PRICES PER CWT.




[1] Real price is actual price adjusted for inflation.

## COST OF PRODUCTION UP SIGNIFICANTLY

The net cost of production (NCOP) increased by 5.5 percent from 2012 to a new record high. 2012's NCOP was $18.23/cwt. 2013's NCOP rose to $19.23, the highest in DFS history. Three key figures to review for 2013's cost of production analysis of the average dairy farm in the DFS include:

- Cash operating expenses were $20.63 per cwt., up slightly from 2012.
- Total costs, including depreciation and family living were $22.82 per cwt., up $0.35.
- After subtracting non-milk income, NCOP was $19.23 per cwt., up $1.00 per cwt. from the previous year.

A substantial decrease in non-milk income in 2013 magnified the increase in NCOP.

*Figure 4A*

## COST OF PRODUCING MILK – ACCRUAL BASIS

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Feed | $ 5.58 | $ 5.58 | $ 6.79 | $ 7.61 | $ 7.75 |
| Labor | 2.88 | 2.81 | 2.97 | 3.11 | 3.09 |
| Interest | 0.55 | 0.58 | 0.52 | 0.50 | 0.49 |
| Freight & Marketing | 0.93 | 0.94 | 0.87 | 0.95 | 0.95 |
| Crop | 1.12 | 1.10 | 1.28 | 1.54 | 1.61 |
| Other | 5.78 | 6.08 | 6.87 | 6.78 | 6.74 |
| Adjusted Cash Operating Expenses | $ 16.84 | $ 17.09 | $ 19.29 | $ 20.49 | $ 20.63 |
| + Depreciation | 1.32 | 1.23 | 1.33 | 1.34 | 1.43 |
| + Family Living | 0.74 | 0.67 | 0.69 | 0.64 | 0.76 |
| Total Costs | $ 18.90 | $ 18.99 | $ 21.31 | $ 22.47 | $ 22.82 |
| - Non-Milk Income[1] | 3.37 | 3.02 | 3.21 | 4.24 | 3.59 |
| Net Cost of Production[2] | $ 15.53 | $ 15.97 | $ 18.10 | $ 18.23 | $ 19.23 |

[1] Non-milk income includes cattle, crop and other income adjusted for inventory changes.
[2] Before any return on equity. Each 1 percent return on equity would be equivalent to another $0.38 added to the NCOP for 2013.

Driven by continued high feed expenses in 2013, high total costs are not a surprise. Feed remained expensive throughout 2013, due to the drought-stricken grain crop of 2012. At the very end of the year, when the more abundant 2013 harvest became available, some relief was felt on the price of purchased feed.

Other categories with increases include crop inputs (chemicals and sprays, fertilizer and lime, and seeds and plants). Increases in most other items were modest and some categories even declined. Presumably Northeast dairy producers continued to catch up on deferred maintenance that they had put off in the lower margin years of the past as repair expenses remained high at $331 per cow in 2013 after averaging $235 for 2009 and 2010. Labor costs were close to inflation, with a 2 percent increase.

*Figure 4B*

## SPECIFIC COST CATEGORIES

| | 2012 | | 2013 | | % Change | |
|---|---|---|---|---|---|---|
| | per Cow | per Cwt. | per Cow | per Cwt. | per Cow | per Cwt. |
| Feed | $1,767 | $ 7.50 | $1,849 | $ 7.75 | 5% | 3% |
| Fuel | $ 253 | $ 1.07 | $ 251 | $ 1.05 | -1% | -2% |
| Crop Inputs | $ 357 | $ 1.52 | $ 384 | $ 1.61 | 8% | 6% |
| Freight & Marketing | $ 221 | $ 0.94 | $ 227 | $ 0.95 | 3% | 1% |
| Labor | $ 722 | $ 3.07 | $ 737 | $ 3.09 | 2% | 1% |

It is important to note that the $19.23 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. For the average DFS producer, each 1 percent return on equity is equivalent to an additional $0.38 per cwt. If we were to include a 5 percent ROE goal, for example, this would be equivalent to a $21.13 net cost of production.

Figure 4C compares NCOP by our three main regions for 2013. New York producers typically have an advantage in lower costs and higher production per cow over producers in New England. Additionally, with the ability to grow more feed, they generally have higher crop sales and are also able to grow more grain for their own use. However, Connecticut, Maine and Massachusetts have state support programs for dairy farmers, which help supplement farm income. Farms in the Southern New England sample had higher government payments (reflected in non-milk income in Figure 4C) than their New York or Northern New England counterparts, which helped make their NCOP more competitive. The difference in NCOP was narrower in 2013 than 2012 between the two regions, with New York producing milk at $0.63 per cwt. less than New England, when all six states are combined.

*Figure 4C*

## NCOP BY REGION

| Cost per CWT. | New York | Northern New England[1] | Southern New England[2] |
|---|---|---|---|
| Feed | $ 7.44 | $ 8.49 | $ 8.50 |
| Labor | 3.04 | 3.07 | 3.94 |
| Interest | 0.50 | 0.48 | 0.43 |
| Freight & Marketing | 0.94 | 0.96 | 1.18 |
| Crop | 1.71 | 1.31 | 1.58 |
| Other | 6.74 | 6.64 | 7.21 |
| Adjusted Cash Operating Expenses | $ 20.37 | $ 20.97 | $ 22.84 |
| + Depreciation | 1.48 | 1.28 | 1.42 |
| + Family Living | 0.78 | 0.67 | 0.88 |
| Total Costs | $ 22.63 | $ 22.91 | $ 25.14 |
| - Non-Milk Income | 3.63 | 3.07 | 5.72 |
| Net Cost of Production | $ 19.00 | $ 19.84 | $ 19.42 |

[1] Northern New England is Maine, New Hampshire and Vermont.

[2] Southern New England is Massachusetts, Connecticut and Rhode Island.

In Figure 4D, we compare the NCOP by herd-size category. NCOP increased about 6 percent across the board. Generally, larger herds have an advantage in spreading costs over more units, driving per-unit cost down. Smaller herds have lower labor costs and higher non-milk income per unit; however, family living and other costs are usually higher, when expressed on a per-unit basis.

*Figure 4D*

## NCOP BY HERD SIZE

| Cost per CWT. | < 100 cows 144 farms | 100-299 Cows 194 farms | 300-699 cows 114 farms | 700+ cows 65 farms |
|---|---|---|---|---|
| Feed | $ 6.85 | $ 7.52 | $ 7.75 | $ 7.97 |
| Labor | 1.85 | 2.91 | 3.26 | 3.19 |
| Interest | 0.65 | 0.57 | 0.47 | 0.45 |
| Freight & Marketing | 1.07 | 1.01 | 0.97 | 0.90 |
| Crop | 1.75 | 1.72 | 1.65 | 1.51 |
| Other | 7.78 | 7.35 | 6.89 | 6.26 |
| Adjusted Cash Operating Expenses | $ 19.96 | $ 21.07 | $ 20.98 | $ 20.28 |
| + Depreciation | 2.54 | 1.90 | 1.31 | 1.17 |
| + Family Living | 2.59 | 1.37 | 0.60 | 0.38 |
| Total Costs | $ 25.09 | $ 24.35 | $ 22.89 | $ 21.83 |
| - Non-Milk Income[1] | 5.02 | 3.97 | 3.66 | 3.17 |
| Net Cost of Production | $ 20.07 | $ 20.38 | $ 19.22 | $ 18.67 |

[1] Non-milk income includes cattle, crop and other income adjusted for inventory changes.

In an industry noted for volatile milk prices, the ability to control expenditures, improve efficiency and adjust to changing input costs is critical to a dairy producer's financial performance.

## HERD SIZE CHANGES

The sample of farms that participate in the Dairy Farm Summary changes slightly from year to year. Some farms drop out of the DFS, while other farms join. This year is unusual in that even though our sample, at 517 farms, increased in number, our average herd size declined 8 percent. This should not be interpreted to mean that the average Northeast dairy farm is downsizing, but merely that our 2013 farm sample includes a few more smaller farms and a few less larger farms than the year before. Specifically, our 2013 sample included 11 more farms in the 99 or fewer category and 5 fewer farms in the 700 or more category than the year before.

In the 2013 DFS sample, the number of cows per farm decreased from 343 head to 315. Milk sold per worker was down by 1.7 percent to 1,097,288 pounds in 2013. Milk sold per worker is the second highest in the history of the DFS, second only to 2012.

Still, as shown in Figure 5, the largest size group remains responsible for the greatest percentage of milk production in the DFS sample.

*Figure 5*

## FARM SIZE AND MILK PRODUCTION

| | 99 Cows or Fewer | 100-299 Cows | 300-699 Cows | 700 Cows or More |
|---|---|---|---|---|
| Number of Farms | **144** | **194** | **114** | **65** |
| Volume of Milk Produced[1] | **5%** | **19%** | **33%** | **43%** |

[1] As a percent of all farms in the 2013 DFS

In order to more accurately look at real growth in herd size as opposed to changes in the DFS sample, a group of the same farms, which have been included in the benchmark for the past 10 years, is shown in Figure 5A. Growth has been relatively steady over the past decade for this group of 51 farms, starting with an average 266 head in 2004 and ending with 352 head in 2013. Of course, each farm grew at a different rate, with individual farms having major expansions in some years and being flat in others. But collectively they averaged a 3.2 percent annual growth rate in individual farm herd size over the time period.

*Figure 5A*

## GROWTH IN HERD SIZE OF SAME DFS FARMS

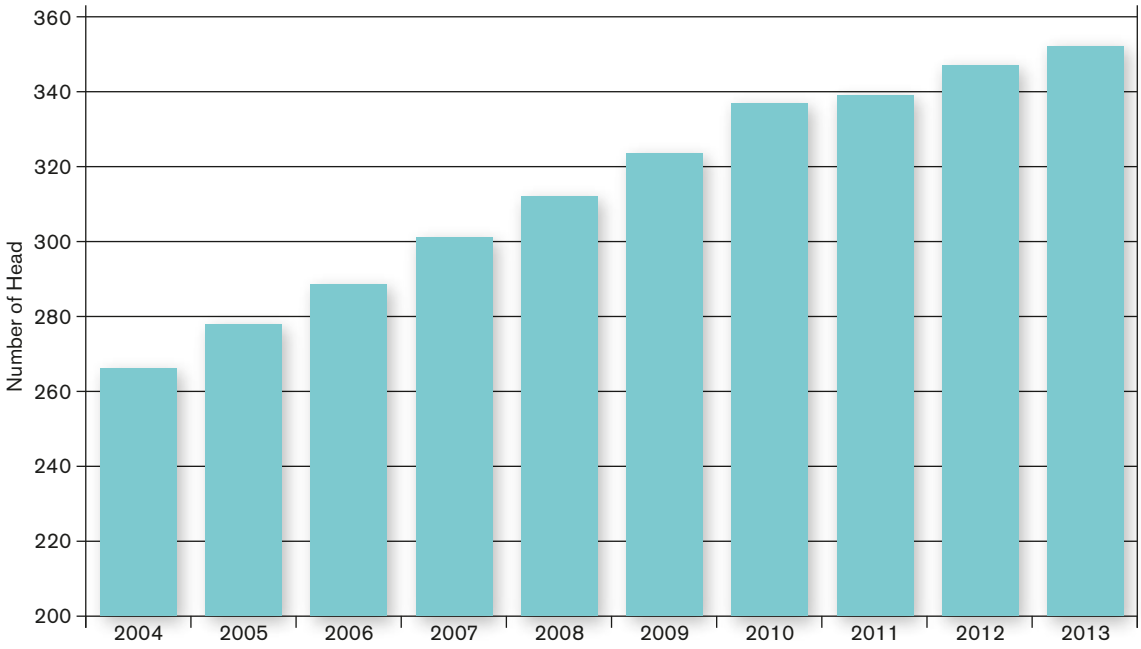



Figure 5B illustrates the close relationship between labor productivity, cow productivity and overall dairy farm profitability. As more cows are handled per worker, milk sold per worker increases. Milk sold per worker and per cow share a close positive relationship. That is, typically as one goes up, so does the other. More milk per cow is favorable in terms of greater productivity and total production. It also drives gross revenue, which is a key factor in profitability. While milk sold per cow correlates positively with adjusted net earnings per cow, more important is a low NCOP, which is enhanced by better labor efficiency.

Figure 5B also shows increasing labor and family living expenses per person as milk sold per worker increases. Farms with higher labor efficiency tend to have a lower cost per cwt. for labor and family living. For example, those farms selling less than 500,000 pounds of milk per worker have the lowest average labor and family living expense per person at $21,058, but on a per cwt. basis, their cost is $4.98 per cwt. In contrast, those selling 1.4 million or more pounds of milk per person have a lower labor and family living cost, or $3.10 per cwt., despite paying nearly 2.5 times more per person. Thus the efficiency gained also allows for greater flexibility with respect to employee compensation and family living draw.

*Figure 5B*

## LABOR PRODUCTIVITY SPURS PROFITS

| Pounds of Milk Sold per Worker | Percent of Farms | Number of Cows | Cows per Worker | Milk Sold per Cow | Avg. Labor & Family Living Per Person[1] | Adjusted Net Earnings Per Cow[2] |
|---|---|---|---|---|---|---|
| 499,000 or less | 8% | 72 | 24 | 17,895 | $ 21,058 | $ -347 |
| 500,000-599,000 | 8% | 91 | 30 | 18,871 | $ 29,130 | $ -325 |
| 600,000-699,000 | 9% | 128 | 33 | 19,917 | $ 30,198 | $ -7 |
| 700,000-799,000 | 9% | 137 | 36 | 1,269 | $ 31,437 | $ 171 |
| 800,000-899,000 | 9% | 222 | 39 | 22,804 | $ 39,344 | $ 50 |
| 900,000-999,000 | 11% | 325 | 45 | 21,736 | $ 40,020 | $ 145 |
| 1 to 1.09 million | 10% | 399 | 46 | 23,048 | $ 42,650 | $ 374 |
| 1.1 to 1.19 million | 11% | 460 | 49 | 23,624 | $ 42,506 | $ 495 |
| 1.2 to 1.39 million | 12% | 513 | 55 | 23,993 | $ 47,905 | $ 310 |
| 1.4 million or more | 12% | 553 | 68 | 24,787 | $ 51,303 | $ 597 |

[1] Includes operator and other family labor
[2] Net earnings per cow less net nonfarm income

When viewed on a per cow, or per cwt. basis, larger farms are able to spread costs and investments over more units. For example, the small farm group produced 43 percent less milk per worker than the average of all farms and had 72 percent more investment ($86 versus $50 per cwt.). Return on assets was positive for all groups, though the largest group was the most profitable with the greatest return on assets.

*Figure 6*

## CAPITAL EFFICIENCY

| Herd Size (No. of Cows) | Pounds Sold per Worker | Pounds Sold per Cow | Total Assets per Cwt.Sold[1] | Asset Turnover (Years)[2] | Return on Assets[3] |
|---|---|---|---|---|---|
| 99 or Fewer | **628,976** | **20,133** | **$86** | **0.29** | **1.6%** |
| 100 to 299 | **942,816** | **21,762** | **$65** | **0.38** | **2.1%** |
| 300 to 699 | **1,154,093** | **23,985** | **$49** | **0.51** | **5.4%** |
| 700 or More | **1,253,755** | **25,287** | **$43** | **0.56** | **7.0%** |
| All Farms | **1,097,288** | **23,848** | **$50** | **0.49** | **4.8%** |

[1] Total assets / cwt. of milk sold
[2] Total assets / cash receipts = number of years
[3] Return on assets = (net earnings + interest) / average farm assets

## CASH FLOW IMPROVES

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 principal payments and family living. What remains can be used for capital replacement, to build liquidity or to invest in a retirement fund. The cash margin rose in 2013 to $2.11 per cwt., up from $1.56 in 2012 (Figure 7). The highest cash margin in DFS history was 2007's $4.14 per cwt.

Figure 7 shows the trend in cash margins that the average dairy farm in the summary experienced since 2009. The cash margin has exhibited substantial volatility during this time. Due to the substantial inflation of farm costs in recent years, the breakeven milk price has moved up significantly from around $14 per cwt., which was common before 2007. Milk prices have moved up in most of these years, setting new records in 2007 and 2011. 2007's cash margin of $4.14 still stands as a record high.

*Figure 7*

## CASH FLOW ANALYSIS PER CWT.

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Actual Milk Price | $ 13.80 | $ 17.70 | $ 21.53 | $ 19.74 | $ 21.30 |
| Cash Required | $ 19.14 | $ 19.31 | $ 21.36 | $ 22.09 | $ 22.77 |
| - Other Income | $ 3.12 | $ 2.98 | $ 3.26 | $ 3.91 | $ 3.57 |
| Breakeven Milk Price | $ 16.02 | $ 16.33 | $ 18.10 | $ 18.18 | $ 19.19 |
| Cash Margin | $ -2.22 | $ 1.37 | $ 3.43 | $ 1.56 | $ 2.11 |

**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 & nonfarm income

= Other income

Given the high level of volatility in the dairy industry, making a financial decision based on a single year's performance would be dangerous. Figure 7 further illustrates this point:

- Cash margin in 2011 was very strong.
- 2010, 2012 and 2013 cash flow was adequate.
- Cash flow produced in 2009 was well below breakeven.

This level of variability makes financial management more challenging, stressing 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 also adopted risk management strategies involving both input costs and milk prices as well as linking employee compensation to annual operating results.

## DEBT CAPACITY AGAIN STRONG

Debt capacity measures the maximum amount of capital debt a farmer could repay from cash generated from the farm business and nonfarm sources. It is determined primarily by cash flow and, to a lesser extent, by interest rates. Reserve debt capacity is the difference between debt capacity and the actual amount of capital debt invested in the business. It is a buffer against financial adversity which could occur within the business, such as herd health problems or crop failure, or from the marketplace, such as low milk prices or high feed costs. It represents the amount by which capital debt can be increased above existing levels and still be repaid from that year's cash flow. In 2013, more than sufficient farm earnings provided adequate cash flow to service debt for the average DFS farm, maintaining debt capacity and reserve debt capacity at higher than the five-year average level (Figure 8).

Figure 8 shows the five-year average for reserve debt capacity. In 2013, it was $1,721 per cow, up from 2012, but below 2011's level. "Never borrow your last dollar during a good year" is time-tested financial wisdom in the farming community. The implication is that a prudent borrower wants to preserve significant liquidity in terms of unused borrowing capacity to fall back on during years of low income or other adversity.

Figure 8 shows that Northeast dairy farmers and their Farm Credit lenders have taken this advice to heart during the post-2000 period in terms of maintaining a healthy level of reserve debt capacity. During 2009, when Northeast dairy farmers had little cash flow capacity to repay debt, farmers and their lenders were better positioned to get through this difficult year than in other parts of the country where both farmers and lenders struggled. In today's increasingly volatile dairy business climate, liquidity is a critical factor to achieve long-term business viability and financial flexibility to deal with tough years. Whether cash in a savings account, prepaid expenses, inventories that can be quickly turned into cash or substantial unused capacity on one's line of credit, clearly strong liquidity is critical to dairy business success.

*Figure 8.*

## DEBT CAPACITY

| Average Farm Credit Interest Rate[1] | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Commercial (Intermediate Term) | 4.1% | 4.1% | 4.1% | 4.0% | 4.0% |
| Real Estate (Long Term) | 4.4% | 4.6% | 4.5% | 4.4% | 4.3% |
| Debt Capacity, per Cow | $ -383 | $ 4,770 | $ 8,074 | $ 5,322 | $ 6,108 |
| - Capital Debt | $ 3,038 | $ 3,126 | $ 2,939 | $ 3,080 | $ 3,104 |
| RESERVE DEBT CAPACITY | $ -3,421 | $ 1,644 | $ 5,135 | $ 2,242 | $ 3,004 |
| 3-Year Average Reserve Debt capacity[2] | $ 1,270 | $ 123 | $ 1,119 | $ 3,007 | $ 3,460 |
| 5-Year Average Reserve Debt Capacity[2] | $ 1,135 | $ 946 | $ 2,118 | $ 1,549 | $ 1,721 |
| Debt Payments as Percent of Milk Sales | 17% | 13% | 11% | 13% | 12% |

[1] Average interest rates for northeastern region ACAs excluding benefit of patronage dividends.
[2] Averages include pre-2009 data.

The current debt capacity is substantially impacted by historically low interest rates, which continued during 2013. In planning for the future, it is important not to be lulled into thinking that today's low interest rates will last indefinitely. At some point, the Federal Reserve will begin to increase short-term rates and this will impact debt service requirements and capacity for those farmers who have variable rate debt. If the average dairy farmer had to repay today's debt at 2007 interest rates (7.7 percent and 7.6 percent), it would reduce both debt capacity and reserve debt capacity by about $1,000 per cow – a major change in their repayment capacity.

## CAPITAL PURCHASES PER COW UP FROM LAST YEAR

Northeast dairy farmers increased capital spending by 5 percent per cow in 2013 (Figure 9). The majority of capital purchases were for replacement machinery and equipment, with some buildings and land improvement. Total capital purchases per farm were $256,095, which is also significantly above the five-year average of $207,736.

*Figure 9*

## CAPITAL PURCHASES

| | Per Farm | Per Cow | % of Total Assets[1] |
|---|---|---|---|
| **2009** | **$ 122,988** | **$ 444** | **4.3%** |
| **2010** | **$ 146,880** | **$ 480** | **4.6%** |
| **2011** | **$ 253,628** | **$ 778** | **6.9%** |
| **2012** | **$ 265,825** | **$ 775** | **7.1%** |
| **2013** | **$ 256,095** | **$ 813** | **6.5%** |
| **3-Year Average** | **$ 256,270** | **$ 782** | **6.4%** |
| **5-Year Average** | **$ 207,736** | **$ 654** | **5.6%** |

[1] Capital purchases as a percent of total assets show an approximate rate of reinvestment in the farm enterprise.

Figure 10 shows a cash flow statement on a per-cow basis for the average Northeast dairy farmer in the study. It includes sources and use of cash for the business, including what was available to cover capital purchases.

*Figure 10*

## CASH SOURCES AND USE STATEMENT

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Sources: | | | Dollars per Cow | | |
| Net Farm Income[1] | $ 113 | $ 507 | $ 916 | $ 613 | $ 617 |
| Net Nonfarm Income | 40 | 41 | 41 | 44 | 57 |
| Sale of Capital | 35 | 50 | 50 | 58 | 59 |
| Paid-in Capital[2] | 30 | 22 | 18 | 42 | 33 |
| Money Borrowed | 780 | 411 | 329 | 589 | 703 |
| TOTAL SOURCES | $ 998 | $ 1,031 | $ 1,354 | $ 1,346 | $ 1,469 |
| Uses: | | | | | |
| Family Living | $ 166 | $ 153 | $ 160 | $ 150 | $ 180 |
| Capital Purchases | 444 | 480 | 778 | 775 | 813 |
| Debt Principal Payments | 388 | 398 | 416 | 421 | 476 |
| TOTAL USES | $ 998 | $ 1,031 | $ 1,354 | $ 1,346 | $ 1,469 |
| Percent Capital Purchases Financed[3] | 176% | 86% | 42% | 76% | 86% |

[1] Net farm income is on a cash basis without accrual adjustments to expenses.
[2] Includes savings withdrawn, gifts, inheritances, grants and debt forgiven
[3] Money borrowed / capital purchases

Total sources of cash were up in 2013 to $1,469 per cow. Net cash farm income increased slightly from 2012, up less than 1 percent to $617 per cow. Capital purchases in 2013 were largely financed by increased borrowing, up 19 percent in the same period. However, farms also paid down some liabilities during the year, so net debt per cow increased at a much lower rate.

## BALANCE SHEETS STRENGTHEN

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

The average DFS dairy farmer's net worth in 2013 grew by $1,351 to $9,162 per cow from $8,441 in 2012. Percent net worth also increased to 73 percent (Figure 11). Solvency remains solid for the average DFS farm, meaning that the average DFS participant would have more than enough farm assets to liquidate, if needed, in order to satisfy all farm debts, selling fees and resulting income tax liability and also to leave money reserves.

*Figure 11*

## CHANGE IN FINANCIAL POSITION

| | Change in Net Worth per Cow | Percent Net Worth[1] | Current Ratio[2] | Quick Ratio[3] | Asset Turnover[4] |
|---|---|---|---|---|---|
| **2009** | **$ -637** | **68%** | **2.0** | **0.8** | **0.37** |
| **2010** | **$ 115** | **68%** | **2.3** | **0.9** | **0.47** |
| **2011** | **$ 1,087** | **72%** | **2.8** | **1.2** | **0.52** |
| **2012** | **$ -367** | **72%** | **2.8** | **1.2** | **0.52** |
| **2013** | **$ 1,351** | **73%** | **2.8** | **1.2** | **0.48** |

[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 cattle, while machinery and equipment ordinarily depreciate.

For the few years leading up to 2008, livestock asset values per cow (including youngstock) increased to $2,419. Cattle values then decreased two years in a row in 2009 and 2010. They were up by $61 per cow in 2011 to $2,307 and then they declined slightly to $2,300 in 2012. 2013 saw a further drop, to $2,286 per milking head (Table A-3). The average DFS farm raises a relatively large amount of replacement heifers as reflected in youngstock as a percent of cows.

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. Its importance cannot be overstressed in a volatile industry, such as dairy.

Current and quick ratios are two measures of liquidity. In 2013, the average dairy farm had a current ratio of 2.8, holding steady from 2.8 in 2011 and 2012 (Figure 11). Good cash flow in 2013 and sufficient inventories relative to current liabilities helped maintain this ratio.

However, since inventory on a dairy farm is primarily feed for onfarm use and not intended to be directly converted into cash to pay bills, subtracting inventory from the current ratio produces the quick ratio and provides a closer look at a dairy farm's true liquidity situation. The quick ratio of 1.2 at the end of the year further demonstrates strong liquidity positioning in 2013.

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: greater asset turnover should translate into a higher return on assets (ROA). In 2013, asset turnover for the average Northeast dairy business was 0.48, down from 0.52 in 2011 and 2012. This was largely a result of the increase in total assets per cow. This means $0.48 of gross revenue was generated for every $1 invested in assets, up from 2009 and 2010, but still below 2011 and 2012.

## NET MARGIN DIFFERENCES AGAIN SIGNIFICANT IN 2013

We again saw a wide range of profits around the $490 per cow average in 2013. Some farms lost more than $1,000 per cow while others posted more than a $2,000 gain. Figure 12 demonstrates the range of profitability between the top and bottom profit groups. Farms in the summary are ranked by profit margin and divided into four quartiles. For the sake of comparison, the all-farm average is also included.

*Figure 12*

## RANGE OF 2013 PROFITS

| | Bottom 25% | All Farms | Top 25% |
|---|---|---|---|
| Number of Farms | 130 | 517 | 129 |
| Average Number of Cows | 218 | 315 | 311 |
| Milk Sold per Cow (lbs.) | 21,585 | 23,848 | 25,287 |
| Milk Sold per Worker (lbs.) | 951,497 | 1,097,288 | 1,179,549 |
| Net Earnings | | | |
| Per Farm | $ 5,668 | $ 154,350 | $ 266,527 |
| Per Cow | $ 26 | $ 490 | $ 857 |
| Per Cwt. | $ 0.12 | $ 2.05 | $ 3.39 |
| Return on Assets[1] | 0.8% | 4.8% | 6.7% |
| Return on Equity[1] | 0.3% | 5.3% | 7.7% |

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

There was an $831 difference in net earnings per cow between the top and bottom quartile groups. This is smaller than last year's difference, which stood at $1,257. Similarly on a per cwt. basis, the top farms posted $3.27 more net earnings than the least profitable farms with earnings of $3.39 while the bottom group earned only $0.12 per cwt. Several management factors contribute to this disparity. Also shown in Figure 12 are two productivity measures. The Top 25% group sells 17 percent more milk per cow and 24 percent more milk per worker than the Bottom 25%, which contributes to the bottom line.

Another area where the top profit group excels is in the NCOP. Figure 13 shows the difference in the cost of producing milk between the most and least profitable groups. In 2013, the top profit group was able to control costs better with an increase of 3 percent while the bottom group saw a 5 percent rise. The difference between the two came to $3.12 per cwt. in 2013, which is the second smallest of the preceding five years. Interesting to note, the bottom group also received a slightly higher milk price of $21.25 per cwt. compared to the top group's $21.18.

*Figure 13*

## COST OF PRODUCING MILK BY PROFIT GROUPS

| NCOP[1] | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| | | | Dollars per Cwt. | | |
| Bottom 25% | $ 18.22 | $ 18.91 | $ 22.53 | $ 20.03 | $ 21.11 |
| Top 25% | 13.12 | 14.16 | 15.91 | 17.40 | 17.99 |
| Difference | $ 5.10 | $4.75 | $ 6.62 | $ 2.44 | $ 3.12 |

[1]Before any return on equity

Certainly, high milk production per cow influences profitability. However, Figure 14A illustrates that by itself, high production per cow does not guarantee superior profitability, as a significant number of high production farms fall in the lower profit groups. However, very few low production farms fall in the top profit group.

The importance of balancing production with total costs to achieve profitability is much more obvious (Figure 14B). As NCOP decreases, the possibility of higher profits increases on nearly a straight line. Cost control, production ability, buying savvy, labor management and wise capital spending determine the cost of production. The ability of dairy producers to consistently stay on top of these challenges determines profitability.

*Figure 14A*

## PROFIT VS. MILK SOLD PER COW

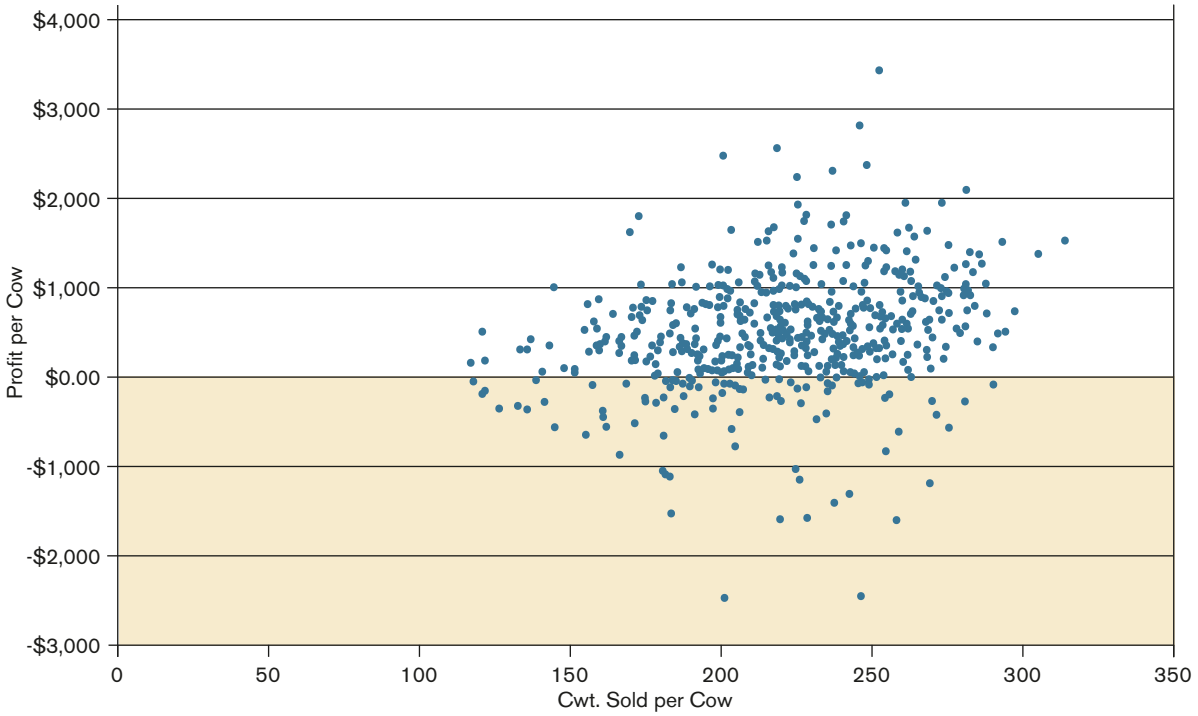
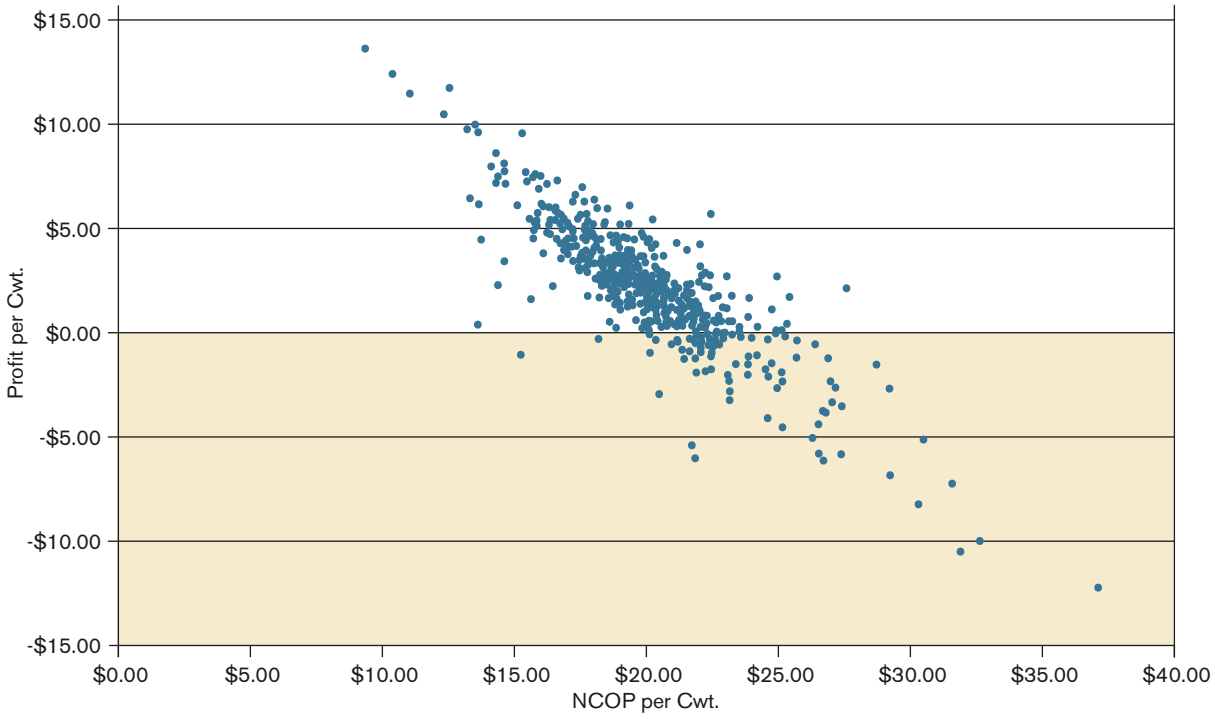



*Figure 14B*

## PROFIT VS. NCOP



## MANAGEMENT STYLE AND DAIRY PROFITS

Above average management is critical to profits, but "above average" is difficult to succinctly describe. Successful managers have been able to identify and leverage their individual management strengths on which to build a profitable dairy business. In short, these managers have developed a management strategy that fits their personalities and resources.

*Figure 15*

## WINNING MANAGEMENT STYLES OF TOP 25%

| | Great with Cows | Labor Efficient | Better Milk Price | Tight with a Buck | Balanced |
|---|---|---|---|---|---|
| Number of Farms | **27** | **24** | **23** | **31** | **24** |
| Average Number of Cows | **407** | **593** | **290** | **272** | **185** |
| Milk Sold per Cow (lbs.) | **27,193** | **25,658** | **21,263** | **22,699** | **21,648** |
| Milk Sold per Worker (lbs.) | **1,071,008** | **1,581,269** | **838,540** | **996,885** | **898,686** |
| NCOP Per Cwt. | **$17.74** | **$17.16** | **$20.96** | **$15.41** | **$19.58** |
| Milk Price per Cwt. | **$21.13** | **$21.50** | **$22.12** | **$20.75** | **$20.79** |
| Net Earnings per Cow | **$988** | **$1,021** | **$722** | **$1,021** | **$788** |
| Net Earnings per Cwt. | **$3.63** | **$3.98** | **$3.40** | **$4.50** | **$3.64** |
| Return on Assets (%) | **6.6%** | **7.7%** | **4.7%** | **5.6%** | **5.3%** |
| Percent Net Worth (%) | **81%** | **75%** | **81%** | **74%** | **72%** |

Of the 129 farms included in 2013's top profit quartile, 105 exhibited distinct management styles, while the remaining 24 farms displayed a more balanced approach, doing well in multiple areas. Figure 15 breaks down these styles of farms excelling in the corresponding management factor. For example, farms included in the Great-with-Cows group outperformed all others in producing the most milk per cow.

**Great with Cows.** These farmers spend more time and money on cow productivity. Average milk sold of 27,193 pounds per cow is the highest among the five styles. High production allowed them to produce and sell 1,071,008 pounds of milk per worker, second only to the Labor Efficient group.

**Labor Efficient.** Superior labor management and the largest herd size enabled this group to be the most labor efficient, with milk sold per worker of more than 1.5 million pounds. In addition to labor efficiency, this group reported the second highest milk sold per cow. Consisting mainly of larger farms, this management style typically gains labor efficiencies from economies of scale and high output per cow. This labor productivity is the highest in DFS history.

**Better Milk Price.** This group received $22.12 per cwt. for their milk, $0.94 more than average for the top profit group. Higher milk prices could be the result of high milk fat or protein content; negotiated premiums for quality and volume; and/or specialty markets.

**Tight with a Buck.** These operators excel at cost control, achieving the lowest cost of production at $15.41 per cwt. Although milk per cow and milk per worker are below the top profit group average, these farmers have implemented tight cost control to achieve superior results. The rewards of managing costs are easily seen in the highest earnings per cow and per cwt.

**Balanced.** These are good, all-around managers. Instead of excelling in one aspect, these farms performed well in all areas. Although profits are less than some of the other styles, these farmers are able to respond quickly to adversity affecting their businesses. This management style is well suited to smaller farms where family members provide much of the production labor.

The common theme is that top-profit farmers have reached a profitable balance between milk production per cow and costs through a variety of management styles. At some point, farmers who are not satisfied with the returns from their operation might consider adjusting their strategy to better compete in a dynamic business climate.

## DO LARGER FARMS HAVE THE EDGE ON PROFITABILITY?

Average farm sizes in the Northeast and across the country have continually increased for many decades. The DFS has concluded that profitability has more to do with successful management of all aspects of the business than any other factor, including size. However, there are strong correlations in the data regarding size of farm, efficiency, pounds of milk sold per cow, cost of production and, ultimately, profitability.

As a group, the largest-size group was by far the most profitable of the four size groups with $664 net earnings per cow in 2013 (Figure 16). In addition, this group was:

- 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 rate.
- The lowest cost producer.

It is noteworthy that the other three size groups were represented in the top profit quartile. This is important because it shows there is opportunity to achieve superior profitability over a range of farm sizes.

In short, being large is no guarantee of profitability. Of the 65 farms in the 700+ cow group, only 32 percent were in the top profit group. There were 18 farms in this largest size group (28 percent) achieving below-average profitability (less than $490/cow), and five had negative net earnings. Again, this is indicative that success is not just about scale.

*Figure 16*

## FARM SIZE AND PROFITABILITY

| | 99 Cows or Fewer | 100-299 Cows | 300-699 Cows | 700 Cows or More |
|---|---|---|---|---|
| Average Number of Cows | **70** | **175** | **462** | **1,021** |
| Milk Sold Per Cow (lbs.) | **20,133** | **21,762** | **23,985** | **25,287** |
| Milk Sold Per Worker (lbs.) | **628,976** | **942,816** | **1,154,093** | **1,253,755** |
| Net Cost of Production per Cwt. | **$20.07** | **$20.38** | **$19.22** | **$18.67** |
| Milk Price per Cwt. | **$21.00** | **$21.22** | **$21.42** | **$21.29** |
| Assets per Cow | **$18,631** | **$14,514** | **$11,924** | **$11,069** |
| Asset Turnover | **0.27** | **0.37** | **0.50** | **0.56** |
| Percentage Net Worth | **82%** | **76%** | **74%** | **68%** |
| Net Earnings per Cow | **$168** | **$186** | **$528** | **$664** |
| Return on Assets % | **1.6%** | **2.1%** | **5.4%** | **7.0%** |

## CONCLUSION

Northeast dairy producers are consistently getting better at sharpening the skills needed to manage through dairy cycles. Strategies are as different as individual characteristics of the farms within this study. Positioning your farm for success is crucial to meeting industry challenges. This summary presented various proven management strategies that have consistently resulted in above-average performance. 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 is now more critical than ever.

We hope this year's Northeast Dairy Farm Summary is a useful tool for doing just that. It remains essential that dairy farmers and those who serve them continue to seek answers 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.

# FINANCIAL RECORDS

The following 17 tables present the detailed financial data on which this summary was based. These tables are organized into four sets:

- Tables A-1 through A-5 are COMPARISONS BETWEEN YEARS
- Tables B-1 through B-3 are DATA BY HERD SIZES
- Tables C-1 through C-6 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 comparison-between-years also includes a trend sheet (Table A-5). Tables C-4 through C-6 cover the cost of producing milk, cash margin and debt capacity by profit groups. The 2009-to-2013 data series includes New England, New Jersey and New York farms.

Please note the following cautions 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 is calculated by applying a standard percentage of depreciation to various asset classes in order to be able to compare consistent numbers from year to year and avoid variations driven by changes in tax laws.
- 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.
- The depreciation categories were combined into one single line item.
- Government payments include MILC and state program payments, but do not include significant one-time grants.
- Supply expenses include BST costs, if used.

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.

For further information, please contact your local Farm Credit office.

# A NEW LOOK AT THE DFS'S EARNINGS WORKSHEETS NOW USING THE GROSS MARGIN FORMAT

Unleashing the power that resides in a business's earning worksheet provides strategic value to a business manager. For this reason, we reorganized the Dairy Farm Summary's traditional earnings worksheet by using a gross margin format.

The gross margin format splits business expenses between variable costs or cost-of-goods sold (COGS) and overhead expenses (fixed costs). Figure A shows which expenses are variable versus fixed:

### Figure A: COGS (Variable) versus Overhead (Fixed) Expenses

COGS (Variable)

These costs are consumed to produce a product and are gone once the product is produced. If a farm produces more output, variable costs generally increase pro-rata for each added unit of product.

- Labor
- Purchased feed
- Crop costs (inputs plus fuel)
- Livestock costs (supplies, breeding, vet)
- Freight & Marketing
- Custom work
- Purchased replacements

Overhead (Fixed)

These expenses result from investment in assets that are used in production, but are not consumed. If a farm produces more output with the same investment, that farm can spread these costs over more units.

- Depreciation
- Interest
- Repairs
- Property taxes
- Property & liability insurance
- Utilities
- Rent or lease
- Owner draw

These sets of expenses increase the totals on an earnings worksheet from three lines to five:

| Convert from traditional format: | | To gross margin format: | |
|---|---|---|---|
| Gross revenue | $ 1.00 | Gross revenue | $ 1.00 |
| - Expenses | $ .85 | Cost of goods sold | $ .60 |
| = Net margin | $ .15 | = Gross margin | $ .40 |
| | | - Overhead expenses | $ .25 |
| | | = Net margin | $ .15 |

### Why this change is valuable

This change is not new. Manufacturing and retail businesses routinely use the gross margin format to provide insight into business performance that is not evident on a traditional earnings worksheet:

1. COGS are the raw materials that go into making products. On a dairy farm, for example, labor, feed, crops and supplies are consumed and converted into milk. These make up most COGS on a dairy. High COGS relative to revenue leads to low gross margin and indicates poor production efficiency. It means that the farm is using more consumable inputs to produce a unit of milk as well as too much labor, feed, bedding, etc. To the business manager, gross margin (COGS) is tied to managing the most effective use of consumable inputs on the farm.

2. Fixed expenses are costs that result from equipment, facility and land investment. The "DIRTI 5" (depreciation, interest, repairs, taxes, insurance) make up most overhead expenses. High overhead expenses indicate that a dairy farm may have too much capital investment relative to the amount of milk produced. To the business manager, fixed or overhead costs are tied to managing the farm's capital asset investment.

From a management perspective, these sets of costs (and the message they deliver) are strategically different. A manager can build sound business strategy using this information. For example:

- A low percent gross margin business generally should improve efficiency before expanding.
- A high percent gross margin business with high overhead generally needs to expand production and spread fixed costs to more units of output in order to improve profitability.
- A low percent gross margin business with low overhead perhaps should consider investing in facilities and/or equipment to support better efficiency and, in turn, improve gross margin and profitability.

A traditional earnings statement does not provide strategic insight into what is going on with a business beyond whether it is profitable not. The gross margin format immediately unleashes significant decision-making power that the business manager can use to improve business performance. Consider the following:

**Figure B: Comparison of Top and Bottom 25 Percent Profit Groups**

| Traditional Format | TOP 25% | BOTTOM 25% |
|---|---|---|
| Gross revenue | 100% | 100% |
| - Expenses | 84% | 97% |
| = Net farm earnings | 16% | 3% |

| Gross Margin Format | TOP 25% | BOTTOM 25% |
|---|---|---|
| Gross Revenue | 100% | 100% |
| - COGS | 65% | 77% |
| = Gross margin | 35% | 23% |
| - Overhead expenses | 19% | 20% |
| = Net farm earnings | 16% | 3% |

Looking at the traditional format, we can see that the Top 25 percent profit group is much more profitable than the bottom 25 percent group. But we cannot tell any more than that.

With an earnings worksheet in the gross margin format, we begin to see strategic advantage that exists with the top group over the bottom group.

Most of the advantage results from improved production efficiency. The top farms have 12 more cents of each milk check dollar (35 percent versus 23 percent) left after paying variable inputs and available to cover overhead and generate profit.

In addition, top farms made somewhat better use of the equipment, buildings and land to produce milk, with a one percent advantage over the bottom farms (19 percent of farm production versus 20). The top farms made more effective use of capital investments by attaining increased productivity from fixed investments. This isn't a large difference, but it adds to the bottom line.

Ultimately, getting the most out of COGS and fixed expenses is important for profitability. Looking at financial records in the gross margin format can help manage both costs.

*TABLE A-1.*

# COMPARISON BETWEEN YEARS–EARNINGS WORKSHEET

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Number of Farms | 544 | 524 | 532 | 504 | 517 |
| Average Number of Cows | 277 | 306 | 326 | 343 | 315 |
| **Receipts** | | | | | |
| Milk Sales | $ 849,215 | $ 1,235,483 | $ 1,631,221 | $ 1,594,407 | $ 1,600,058 |
| Cattle Sales | 42,725 | 59,075 | 86,137 | 112,841 | 96,009 |
| Crop Sales | 23,782 | 61,818 | 65,395 | 98,865 | 52,877 |
| Government Payments[1] | | | | | 28,185 |
| Other | 105,029 | 56,094 | 65,441 | 88,846 | 54,794 |
| CASH RECEIPTS | $ 1,020,751 | $ 1,412,470 | $ 1,848,194 | $ 1,894,959 | $ 1,831,923 |
| **Accrual Adjustments** | | | | | |
| + Change in Inventory-Raised Livestock | $ 25,055 | $ 21,431 | $ 12,927 | $ 22,814 | $ 19,198 |
| VALUE OF FARM PRODUCTION (a) | $ 1,045,806 | $ 1,433,901 | $ 1,861,121 | $ 1,917,773 | $ 1,851,121 |
| **COST OF GOODS SOLD** | | | | | |
| Chemicals & Sprays | $ 13,346 | $13,733 | $17,202 | $18,266 | $18,525 |
| Custom Hire | 35,469 | 44,716 | 48,485 | 50,175 | 48,814 |
| Purchased Feed | 343,271 | 389,544 | 514,478 | 606,162 | 582,279 |
| Fertilizer & Lime | 33,246 | 35,966 | 48,540 | 63,550 | 61,429 |
| Freight & Marketing | 57,543 | 65,645 | 65,960 | 75,749 | 71,550 |
| Gasoline, Fuel & Oil | 41,983 | 54,964 | 81,067 | 86,746 | 78,925 |
| Hired Labor | 177,165 | 195,873 | 224,937 | 247,698 | 232,019 |
| Seed & Plants | 22,397 | 27,267 | 30,883 | 40,965 | 40,896 |
| Supplies | 64,877 | 76,957 | 82,408 | 96,904 | 83,997 |
| Veterinary, Medicine & Breeding | 34,861 | 39,649 | 63,570 | 66,622 | 62,360 |
| Other | 34,594 | 37,819 | 34,968 | 27,262 | 17,310 |
| Cow Replacements | 3,046 | 3,441 | 4,063 | 3,848 | 4,121 |
| **Total Cost of Goods Sold** | $ 861,798 | $ 985,574 | $ 1,216,561 | $ 1,383,947 | $ 1,302,225 |
| **Gross Margin** | $ 184,008 | $ 448,327 | $ 644,560 | $ 533,826 | $ 548,896 |
| **OVERHEAD** | | | | | |
| Insurance | 15,954 | 17,242 | 19,944 | 20,196 | 19,464 |
| Interest | 34,011 | 40,519 | 39,733 | 40,140 | 37,049 |
| Rent | 19,113 | 23,144 | 26,920 | 27,910 | 29,358 |
| Repairs | 61,789 | 75,888 | 103,965 | 104,147 | 104,372 |
| Property & Misc. Taxes | 16,027 | 17,605 | 19,533 | 21,464 | 22,402 |
| Utilities | 27,839 | 32,751 | 35,328 | 35,014 | 35,256 |
| **Accrual Adjustments** | | | | | |
| + Depreciation | 81,399 | 86,142 | 100,598 | 106,684 | 107,267 |
| **Total Overhead Expenses** | $ 256,132 | $ 293,291 | $ 346,021 | $ 355,555 | $ 355,168 |
| **Total Farm Production Costs (b)** | $ 1,117,930 | $ 1,278,865 | $ 1,562,582 | $ 1,739,502 | $ 1,657,393 |
| NET FARM EARNINGS (a) - (b) | $ -72,124 | $ 155,036 | $ 298,539 | $ 178,271 | $ 193,728 |
| + Net Nonfarm Income | 10,981 | 12,512 | 13,437 | 14,924 | 17,799 |
| - Family Living & Income Taxes | 45,681 | 46,587 | 52,147 | 51,371 | 56,837 |
| NET EARNINGS | $ -106,824 | $ 120,961 | $ 259,829 | $ 141,824 | $ 154,690 |

Note: Expenses are 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.

[1] Prior to 2013, government payments have been included in "other."

*TABLE A-2.*

# COMPARISON BETWEEN YEARS–EARNINGS WORKSHEET PER CWT.

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Number of Farms | 544 | 524 | 532 | 504 | 517 |
| Average Number of Cows | 277 | 306 | 326 | 343 | 315 |
| **Receipts** | DOLLARS PER CWT. OF MILK | | | | |
| Milk Sales | $ 13.80 | $ 17.70 | $ 21.53 | $ 20.01 | $ 21.30 |
| Cattle Sales | 0.69 | 0.85 | 1.14 | 1.42 | 1.28 |
| Crop Sales | 0.39 | 0.89 | 0.86 | 1.24 | 0.70 |
| Government Payments | | | | | 0.38 |
| Other | 1.70 | 0.79 | 0.86 | 1.11 | 0.73 |
| CASH RECEIPTS | $ 16.58 | $ 20.23 | $ 24.39 | $ 23.7 | $ 24.39 |
| **Accrual Adjustments** | | | | | |
| + Change in Inventory-Raised Livestock | $ 0.41 | $ 0.31 | $ 0.17 | $ 0.29 | $ 0.26 |
| VALUE OF FARM PRODUCTION (a) | $ 16.99 | $ 20.54 | $ 24.56 | $ 24.07 | $ 24.64 |
| **COST OF GOODS SOLD** | | | | | |
| Chemicals & Sprays | $ 0.22 | $ 0.20 | $ 0.23 | $ 0.23 | $ 0.25 |
| Custom Hire | 0.58 | 0.64 | 0.64 | 0.63 | 0.65 |
| Purchased Feed | 5.58 | 5.58 | 6.79 | 7.61 | 7.75 |
| Fertilizer & Lime | 0.54 | 0.52 | 0.64 | 0.80 | 0.82 |
| Freight & Marketing | 0.93 | 0.94 | 0.87 | 0.95 | 0.95 |
| Gasoline, Fuel & Oil | 0.68 | 0.79 | 1.07 | 1.09 | 1.05 |
| Hired Labor | 2.88 | 2.81 | 2.97 | 3.11 | 3.09 |
| Seed & Plants | 0.36 | 0.39 | 0.41 | 0.51 | 0.54 |
| Supplies | 1.05 | 1.10 | 1.09 | 1.21 | 1.12 |
| Veterinary, Medicine & Breeding | 0.57 | 0.57 | 0.84 | 0.84 | 0.83 |
| Other | 0.57 | 0.53 | 0.46 | 0.34 | 0.23 |
| Cow Replacements | 0.05 | 0.05 | 0.05 | 0.05 | 0.05 |
| **Total Cost of Goods Sold** | $ 14.01 | $ 14.12 | $ 16.06 | $ 17.37 | $ 17.34 |
| **Gross Margin** | $ 2.98 | $ 6.42 | $ 8.50 | $ 6.70 | $ 7.31 |
| **OVERHEAD** | | | | | |
| Insurance | 0.26 | 0.25 | 0.26 | 0.25 | 0.26 |
| Interest | 0.55 | 0.58 | 0.52 | 0.50 | 0.49 |
| Rent | 0.31 | 0.33 | 0.36 | 0.35 | 0.39 |
| Repairs | 1.00 | 1.09 | 1.37 | 1.31 | 1.39 |
| Property & Misc. Taxes | 0.26 | 0.25 | 0.26 | 0.27 | 0.30 |
| Utilities | 0.45 | 0.47 | 0.47 | 0.44 | 0.47 |
| **Accrual Adjustments** | | | | | |
| + Depreciation | 1.32 | 1.23 | 1.33 | 1.34 | 1.43 |
| **Total Overhead Expenses** | $ 4.15 | $ 4.20 | $ 4.57 | $ 4.46 | $ 4.73 |
| **Total Farm Production Costs (b)** | $ 18.16 | $ 18.32 | $ 20.63 | $ 21.83 | $ 22.06 |
| NET FARM EARNINGS (a) - (b) | $ -1.17 | $ 2.22 | $ 3.93 | $ 2.24 | $ 2.58 |
| + Net Nonfarm Income | 0.18 | 0.18 | 0.18 | 0.18 | 0.24 |
| - Family Living & Income Taxes | 0.74 | 0.67 | 0.69 | 0.60 | 0.76 |
| NET EARNINGS | $ -1.73 | $ 1.73 | $ 3.42 | $ 1.82 | $ 2.06 |

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 - DECEMBER 31

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Number of Farms | 544 | 524 | 532 | 504 | 517 |
| Average Number of Cows | 277 | 306 | 326 | 343 | 315 |
| **Assets** | | | DOLLARS PER FARM | | |
| Livestock | $ 624,350 | $ 687,340 | $ 752,107 | $ 788,849 | $ 720,116 |
| Feed & Crops | 232,653 | 280,216 | 328,481 | 394,507 | 356,717 |
| Machinery & Equipment | 521,389 | 560,602 | 662,191 | 699,551 | 725,365 |
| Farm–Land & Buildings | 1,210,781 | 1,345,946 | 1,422,083 | 1,696,332 | 1,675,190 |
| All Other | 267,604 | 317,016 | 532,822 | 472,771 | 474,546 |
| TOTAL ASSETS | $ 2,856,777 | $ 3,191,120 | $ 3,697,684 | $ 4,052,010 | $ 3,951,934 |
| TOTAL LIABILITIES | $ 924,444 | $ 1,021,138 | $ 1,032,076 | $ 1,156,617 | $ 1,066,046 |
| TOTAL NET WORTH | $ 1,932,333 | $ 2,169,982 | $ 2,665,608 | $ 2,895,393 | $ 2,885,888 |
| **Assets** | | | DOLLARS PER COW | | |
| Livestock | $ 2,254 | $ 2,246 | $ 2,307 | $ 2,300 | $ 2,286 |
| Feed & Crops | 840 | 916 | 1,008 | 1,150 | 1,132 |
| Machinery & Equipment | 1,882 | 1,832 | 2,031 | 2,040 | 2,303 |
| Farm-Land & Buildings | 4,372 | 4,398 | 4,362 | 4,946 | 5,141 |
| All Other | 965 | 1,036 | 1,634 | 1,378 | 1,684 |
| TOTAL ASSETS | $ 10,313 | $ 10,428 | $ 11,342 | $ 11,813 | $ 12,546 |
| TOTAL LIABILITIES | $ 3,337 | $ 3,337 | $ 3,164 | $ 3,372 | $ 3,384 |
| TOTAL NET WORTH | $ 6,976 | $ 7,091 | $ 8,178 | $ 8,441 | $ 9,162 |
| **Assets** | | | DOLLARS PER CWT.OF MILK | | |
| Livestock | $ 10.14 | $ 9.85 | $ 9.93 | $ 9.90 | $ 9.59 |
| Feed & Crops | 3.78 | 4.01 | 4.33 | 4.95 | 4.75 |
| Machinery & Equipment | 8.48 | 8.03 | 8.74 | 8.78 | 9.66 |
| Farm–Land & Buildings | 19.67 | 19.29 | 18.77 | 21.29 | 22.30 |
| All Other | 4.35 | 4.54 | 7.03 | 5.93 | 6.32 |
| TOTAL ASSETS | $ 46.42 | $ 45.72 | $ 48.80 | $ 50.85 | $ 52.61 |
| TOTAL LIABILITIES | $ 15.02 | $ 14.63 | $ 13.62 | $ 14.51 | $ 14.19 |
| TOTAL NET WORTH | $ 31.40 | $ 31.09 | $ 35.18 | $ 36.34 | $ 38.42 |
| PERCENT NET WORTH | 68% | 68% | 72% | 72% | 73% |

*TABLE A-4.*

# COMPARISON BETWEEN YEARS–EVALUATION FACTORS

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Number of Farms | 544 | 524 | 532 | 513 | 517 |
| Average Number of Cows | 277 | 306 | 326 | 339 | 315 |
| Worker Equivalents | 6.0 | 7.0 | 7.0 | 7.2 | 6.8 |
| Cows Per Worker | 46 | 44 | 47 | 47 | 46 |
| Pounds of Milk Sold Per Worker | 1,025,783 | 997,100 | 1,085,617 | 1,115,785 | 1,097,288 |
| Pounds of Milk Sold | 6,154,700 | 6,979,700 | 7,577,606 | 8,078,285 | 7,512,009 |
| Pounds of Milk Sold Per Cow | 22,219 | 22,809 | 23,244 | 23,552 | 23,848 |
| Milk Price Per Cwt. | $ 13.80 | $ 17.70 | $ 21.53 | $ 19.74 | $ 21.30 |
| Total Crop Acres | 653 | 714 | 769 | 822 | 766 |
| Crop Acres Per Cow | 2.4 | 2.3 | 2.4 | 2.4 | 2.4 |
| Feed Cost Per Cow | $ 1,239 | $ 1,273 | $ 1,578 | $ 1,767 | $ 1,849 |
| Feed as a Percent of Milk Sales | 40% | 32% | 32% | 38% | 36% |
| Feed & Crop Expense Per Cow[1] | $ 1,488 | $ 1,525 | $ 1,875 | $ 2,123 | $ 2,233 |
| Feed & Crop Expense Per Cwt. | $ 6.70 | $ 6.69 | $ 8.07 | $ 9.01 | $ 9.36 |
| Machinery Costs Per Cow[2] | $ 667 | $ 723 | $ 869 | $ 1,016 | $ 910 |
| Machinery Costs Per Cwt. | $ 3.00 | $ 3.17 | $ 3.74 | $ 4.31 | $ 3.82 |
| Labor & Family Living Per Cow | $ 796 | $ 788 | $ 849 | $ 863 | $ 917 |
| Labor & Family Living Per Cwt. | $ 3.58 | $ 3.45 | $ 3.65 | $ 3.66 | $ 3.85 |
| Assets Per Cow | $ 10,313 | $ 10,428 | $ 11,342 | $ 11,408 | $ 12,546 |
| Debt Per Cow | $ 3,337 | $ 3,337 | $ 3,164 | $ 3,136 | $ 3,384 |
| Net Worth Per Cow | $ 6,976 | $ 7,091 | $ 8,178 | $ 8,272 | $ 9,162 |
| Percent Net Worth | 68% | 68% | 72% | 72% | 73% |

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

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

*TABLE A-5.*

# COMPARISON BETWEEN YEARS–TREND ANALYSIS

| ADJUSTED FINANCIAL CONDITION AS OF DECEMBER 31 | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Current Assets | $ 375,649 | $ 451,846 | $ 576,196 | $ 586,106 | $ 621,951 |
| Intermediate Assets | 1,263,302 | 1,384,848 | 1,582,712 | 1,589,227 | 1,642,957 |
| Fixed Assets | 1,217,826 | 1,354,426 | 1,538,776 | 1,568,586 | 1,687,026 |
| TOTAL ASSETS | $ 2,856,777 | $ 3,191,120 | $ 3,697,684 | $ 3,743,919 | $ 3,951,934 |
| Change (+ or -) from Prior Years | $ -10,875 | $ 334,343 | $ 506,564 | $ 46,235 | $ 208,015 |
| Current Liabilities | $ 190,121 | $1 92,897 | $ 209,387 | $ 207,872 | $ 219,220 |
| Intermediate Liabilities | 414,998 | 471,119 | 426,589 | 439,020 | 430,905 |
| Long-Term Liabilities | 319,325 | 357,122 | 396,100 | 417,587 | 415,921 |
| TOTAL LIABILITIES | $ 924,444 | $ 1,021,138 | $ 1,032,076 | $ 1,064,479 | $ 1,066,046 |
| Change (+ or -) from Prior Years | $ 127,465 | $ 96,694 | $ 10,938 | $ 32,403 | $ 1,567 |
| NET WORTH | $ 1,932,333 | $ 2,169,982 | $ 2,665,608 | $ 2,679,440 | $ 2,885,888 |
| Change (+ or -) from Prior Years | $ -138,340 | $ 237,649 | $ 495,626 | $ 13,832 | $ 206,448 |
| % Net Worth | 68% | 68% | 72% | 72% | 73% |

| I & E Farm (Cash Basis) | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Sales - Milk | $ 849,215 | $ 1,235,483 | $ 1,631,221 | $ 1,594,407 | $ 1,600,058 |
| Sales - Secondary Products | 42,725 | 59,075 | 86,137 | 112,841 | 96,009 |
| Other Farm Income | 128,811 | 117,912 | 130,836 | 187,711 | 135,856 |
| TOTAL FARM INCOME | $ 1,020,751 | $ 1,412,470 | $ 1,848,194 | $ 1,894,959 | $ 1,831,923 |
| FARM EXPENSES | $ 1,036,531 | $ 1,192,723 | $ 1,461,984 | $ 1,632,818 | $ 1,550,126 |
| NET FARM INCOME | $ -15,780 | $ 219,747 | $ 386,210 | $ 262,141 | $ 281,797 |
| ADD: Interest | $ 34,011 | $ 40,519 | $ 39,733 | $ 40,140 | $ 37,049 |
| TOTAL AVAILABLE - Farm | $ 18,231 | $ 260,266 | $ 425,943 | $ 302,281 | $ 318,846 |
| ADD: Net Nonfarm Income | $ 10,981 | $ 12,512 | $ 13,437 | $ 31,690 | $ 17,799 |
| Sale Capital Assets | $ 9,594 | $ 15,407 | $ 16,436 | $ 25,406 | $ 14,251 |
| TOTAL FUNDS AVAILABLE (a) | $ 38,806 | $ 288,185 | $ 455,816 | $ 359,377 | $ 350,896 |
| Family Living + Income Taxes | $ 45,681 | $ 46,587 | $ 52,147 | $ 51,371 | $ 56,837 |
| Debt Service Requirement | $ 141,497 | $ 162,520 | $ 175,259 | $ 183,882 | $ 180,421 |
| TOTAL FUNDS REQUIRED (b) | $ 187,178 | $ 209,107 | $ 227,406 | $ 235,253 | $ 237,258 |
| EXCESS (DEFICIT) (a – b) | $ -148,372 | $ 79,078 | $ 228,410 | $ 124,124 | $ 113,638 |

*TABLE B-1.*

# 2013 DATA BY HERD SIZE–EARNINGS WORKSHEET

| | HERD SIZE | | | | |
|---|---|---|---|---|---|
| | 99 COWS OR FEWER | 100-299 COWS | 300-699 COWS | 700 COWS OR MORE | ALL FARMS |
| Number of Farms | 144 | 194 | 114 | 65 | 517 |
| Average Number of Cows | 70 | 175 | 462 | 1021 | 315 |
| Receipts | DOLLARS PER COW | | | | |
| Milk Sales | $ 4,209 | $ 4,621 | $ 5,139 | $ 5,384 | $ 5,080 |
| Cattle Sales | 293 | 292 | 291 | 323 | 305 |
| Crop Sales | 226 | 134 | 220 | 135 | 168 |
| Government Payments | 102 | 133 | 82 | 71 | 89 |
| Other | 169 | 159 | 168 | 186 | 174 |
| CASH RECEIPTS | $ 4,999 | $ 5,339 | $ 5,900 | $ 6,099 | $ 5,816 |
| **Accrual Adjustments** | | | | | |
| + Change in Inventory-Raised Livestock | $ -9 | $ 48 | $ 59 | $ 79 | $ 61 |
| VALUE OF FARM PRODUCTION (a) | $ 4,990 | $ 5,387 | $ 5,959 | $ 6,178 | $ 5,877 |
| **COST OF GOODS SOLD** | | | | | |
| Chemicals & Sprays | $ 52 | $ 58 | $ 47 | $ 69 | $ 59 |
| Custom Hire | 90 | 150 | 173 | 153 | 155 |
| Purchased Feed | 1,380 | 1,636 | 1,858 | 2,015 | 1,849 |
| Fertilizer & Lime | 173 | 193 | 208 | 188 | 195 |
| Freight & Marketing | 216 | 219 | 232 | 228 | 227 |
| Gasoline, Fuel & Oil | 248 | 252 | 255 | 246 | 251 |
| Hired Labor | 373 | 634 | 781 | 806 | 737 |
| Seed & Plants | 127 | 123 | 140 | 126 | 130 |
| Supplies | 262 | 269 | 279 | 256 | 267 |
| Veterinary, Medicine & Breeding | 154 | 176 | 189 | 222 | 198 |
| Other | 87 | 65 | 83 | 28 | 55 |
| Cow Replacements | 16 | 30 | 11 | 5 | 13 |
| **Total Cost of Goods Sold** | $ 3,178 | $ 3,805 | $ 4,256 | $ 4,342 | $ 4,136 |
| **Gross Margin** | $ 1,812 | $ 1,582 | $ 1,703 | $ 1,836 | $ 1,741 |
| **OVERHEAD** | | | | | |
| Insurance | 85 | 71 | 60 | 54 | 62 |
| Interest | 131 | 124 | 113 | 115 | 118 |
| Rent | 50 | 89 | 93 | 102 | 93 |
| Repairs | 321 | 304 | 328 | 348 | 331 |
| Property & Misc. Taxes | 122 | 82 | 70 | 58 | 71 |
| Utilities | 131 | 111 | 111 | 110 | 112 |
| **Accrual Adjustments** | | | | | |
| + Depreciation | 512 | 413 | 315 | 296 | 341 |
| **Total Overhead Expenses** | $ 1,352 | $ 1,194 | $ 1,090 | $ 1,083 | $ 1,128 |
| **Total Farm Production Costs (b)** | $ 4,530 | $ 4,999 | $ 5,346 | $ 5,425 | $ 5,264 |
| NET FARM EARNINGS (a) - (b) | $ 460 | $ 388 | $ 613 | $ 753 | $ 613 |
| + Net Nonfarm Income | 229 | 97 | 59 | 7 | 57 |
| - Family Living & Income Taxes | 521 | 299 | 144 | 96 | 180 |
| NET EARNINGS | $ 168 | $ 186 | $ 528 | $ 664 | $ 490 |

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.*

# 2013 DATA BY HERD SIZE–BALANCE SHEET SUMMARY

DECEMBER 31, 2013

| | HERD SIZE | | | | |
|---|---|---|---|---|---|
| | 99 COWS OR FEWER | 100-299 COWS | 300-699 COWS | 700 COWS OR MORE | ALL FARMS |
| Number of Farms | 144 | 194 | 114 | 65 | 517 |
| Average Number of Cows | 70 | 175 | 462 | 1021 | 315 |
| | ASSETS PER COW | | | | |
| Cash & Accounts Receivable | $ 659 | $ 579 | $ 572 | $ 571 | $ 579 |
| Feed & Crop Inventory | 1,049 | 1,162 | 1,177 | 1,099 | 1,135 |
| Supplies & Prepaid Expenses | 116 | 144 | 192 | 223 | 190 |
| Other Current Assets | 204 | 58 | 96 | 34 | 70 |
| TOTAL CURRENT ASSETS | $ 2,028 | $ 1,943 | $ 2,037 | $ 1,927 | $ 1,974 |
| Dairy Livestock | $ 2,214 | $ 2,278 | $ 2,234 | $ 2,335 | $ 2,286 |
| Machinery & Equipment | 3,881 | 2,944 | 2,106 | 1,884 | 2,303 |
| Other Intermediate Assets | 1,371 | 852 | 583 | 432 | 627 |
| TOTAL INTERMEDIATE ASSETS | $ 7,466 | $ 6,074 | $ 4,923 | $ 4,651 | $ 5,216 |
| Farm Real Estate | $ 8,732 | $ 6,112 | $ 4,797 | $ 4,099 | $ 4,946 |
| Other Fixed Assets | 405 | 385 | 167 | 392 | 410 |
| TOTAL FIXED ASSETS | $ 9,137 | $ 6,497 | $ 4,964 | $ 4,491 | $ 5,356 |
| TOTAL ASSETS | $ 18,631 | $ 14,514 | $ 11,924 | $ 11,069 | $ 12,546 |
| | LIABILITIES PER COW | | | | |
| Accounts Payable | $ 73 | $ 119 | $ 99 | $ 70 | $ 90 |
| Farm Credit Short-Term Loans | 74 | 124 | 137 | 212 | 161 |
| Other Current Liabilities | 436 | 456 | 419 | 460 | 445 |
| TOTAL CURRENT LIABILITIES | $ 583 | $ 699 | $ 655 | $ 742 | $ 696 |
| Farm Credit Intermediate Term | $ 866 | $ 944 | $ 1,068 | $ 1,257 | $ 1,108 |
| Other Intermediate Liabilities | 458 | 373 | 231 | 194 | 260 |
| TOTAL INTERMEDIATE LIABILITIES | $ 1,324 | $ 1,317 | $ 1,299 | $1,451 | $ 1,368 |
| Farm Credit Long-Term Real Estate | $ 1,122 | $ 1,106 | $ 1,035 | $ 1,245 | $ 1,142 |
| Other Long-Term Liabilities | 314 | 298 | 154 | 115 | 178 |
| TOTAL LONG-TERM LIABILITIES | $ 1,436 | $ 1,404 | $ 1,189 | $ 1,360 | $ 1,320 |
| TOTAL LIABILITIES | $ 3,343 | $ 3,420 | $ 3,143 | $ 3,553 | $ 3,384 |
| | NET WORTH PER COW | | | | |
| OWNER'S NET WORTH | $ 15,288 | $ 11,094 | $ 8,781 | $ 7,516 | $ 9,162 |
| TOTAL LIABILITIES & NET WORTH | $ 18,631 | $ 14,514 | $ 11,924 | $ 11,069 | $ 12,546 |
| PERCENT NET WORTH | 82% | 76% | 74% | 68% | 73% |

*TABLE B-3.*

# 2013 DATA BY HERD SIZE–EVALUATION FACTORS

| | HERD SIZE | | | | |
|---|---|---|---|---|---|
| | 99 COWS OR FEWER | 100-299 COWS | 300-699 COWS | 700 COWS OR MORE | ALL FARMS |
| Number of Farms | 144 | 194 | 114 | 65 | 517 |
| Average Number of Cows | 70 | 175 | 462 | 1,021 | 315 |
| Worker Equivalents | 2.2 | 4.0 | 9.6 | 20.6 | 6.8 |
| Cows Per Worker | 31 | 43 | 48 | 50 | 46 |
| Pounds of Milk Sold Per Worker | 628,976 | 942,816 | 1,154,093 | 1,253,755 | 1,097,288 |
| Pounds of Milk Sold Per Farm | 1,402,616 | 3,808,977 | 11,079,293 | 25,814,815 | 7,512,009 |
| Pounds of Milk Sold Per Cow | 20,133 | 21,762 | 23,985 | 25,287 | 23,848 |
| Milk Price Per Cwt. | $ 21.00 | $ 21.22 | $ 21.42 | $ 21.29 | $ 21.30 |
| Total Crop Acres | 259 | 493 | 1,073 | 2,092 | 766 |
| Crop Acres Per Cow | 3.7 | 2.8 | 2.3 | 2.0 | 2.4 |
| Crop Acres Per Worker | 118 | 123 | 112 | 102 | 113 |
| Feed Cost Per Cow | $ 1,380 | $ 1,636 | $ 1,858 | $ 2,015 | $ 1,849 |
| Feed Cost Per Cwt. | $ 6.85 | $ 7.52 | $ 7.75 | $ 7.97 | $ 7.75 |
| Feed as a Percent of Milk Sales | 33% | 35% | 36% | 37% | 36% |
| Feed & Crop Expense Per Cow[1] | 1,732 | 2,010 | 2,253 | 2,398 | 2,233 |
| Feed & Crop Expense Per Cwt. | $ 8.60 | $ 9.24 | $ 9.39 | $ 9.48 | $ 9.36 |
| Machinery Cost Per Cow[2] | $ 963 | $ 940 | $ 910 | $ 882 | $ 910 |
| Machinery Costs Per Cwt. | $ 4.78 | $ 4.32 | $ 3.80 | $ 3.49 | $ 3.82 |
| Labor & Family Living Per Cow | $ 894 | $ 933 | $ 925 | $ 902 | $ 917 |
| Labor & Family Living Per Cwt. | $ 4.44 | $ 4.29 | $ 3.86 | $ 3.57 | $ 3.85 |
| Assets Per Cow | $ 18,631 | $ 14,514 | $ 11,924 | $ 11,069 | $ 12,546 |
| Debt Per Cow | $ 3,343 | $ 3,420 | $ 3,143 | $ 3,553 | $ 3,384 |
| Net Worth Per Cow | $ 15,288 | $ 11,094 | $ 8,781 | $ 7,516 | $ 9,162 |
| Percent Return on Assets[3] | 1.6% | 2.1% | 5.4% | 7.0% | 4.8% |
| Percent Return on Equity[4] | 1.1% | 1.7% | 6.0% | 8.8% | 5.3% |

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

[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 C-1.*

# 2012 DATA BY PROFIT GROUPS–EARNINGS WORKSHEET

| | PROFIT GROUP | | | | |
|---|---|---|---|---|---|
| | BOTTOM 25% | THIRD 25% | SECOND 25% | TOP 25% | ALL FARMS |
| Number of Farms | 130 | 129 | 129 | 129 | 517 |
| Average Number of Cows | 218 | 370 | 362 | 311 | 315 |
| **Receipts** | DOLLARS PER COW | | | | |
| Milk Sales | $ 4,582 | $ 5,000 | $ 5,205 | $ 5,359 | $ 5,080 |
| Cattle Sales | 268 | 296 | 323 | 319 | 305 |
| Crop Sales | 150 | 135 | 140 | 250 | 168 |
| Government Payments | 96 | 83 | 80 | 104 | 89 |
| Other | 138 | 182 | 146 | 221 | 174 |
| CASH RECEIPTS | $ 5,234 | $ 5,696 | $ 5,894 | $ 6,253 | $ 5,816 |
| **Accrual Adjustments** | | | | | |
| + Change in Inventory-Raised Livestock | $ 64 | $ 70 | $ 55 | $ 55 | $ 61 |
| VALUE OF FARM PRODUCTION (a) | $ 5,298 | $ 5,766 | $ 5,949 | $ 6,308 | $ 5,877 |
| COST OF GOODS SOLD | | | | | |
| Chemicals & Sprays | $ 53 | $ 51 | $ 64 | $ 65 | $ 59 |
| Custom Hire | 202 | 176 | 131 | 124 | 155 |
| Purchased Feed | 1,839 | 1,874 | 1,885 | 1,778 | 1,849 |
| Fertilizer & Lime | 168 | 197 | 197 | 209 | 195 |
| Freight & Marketing | 224 | 238 | 231 | 212 | 227 |
| Gasoline, Fuel & Oil | 257 | 254 | 248 | 244 | 251 |
| Hired Labor | 725 | 734 | 737 | 745 | 737 |
| Seed & Plants | 111 | 122 | 138 | 142 | 130 |
| Supplies | 280 | 267 | 267 | 256 | 267 |
| Veterinary, Medicine & Breeding | 176 | 204 | 205 | 198 | 198 |
| Other | 11 | 8 | 64 | 126 | 55 |
| Cow Replacements | 32 | 12 | 9 | 7 | 13 |
| **Total Cost of Goods Sold** | $ 4,078 | $ 4,137 | $ 4,176 | $ 4,106 | $ 4,136 |
| **Gross Margin** | $ 1,220 | $ 1,629 | $ 1,773 | $ 2,202 | $ 1,741 |
| **OVERHEAD** | | | | | |
| Insurance | 62 | 56 | 64 | 65 | 62 |
| Interest | 120 | 125 | 124 | 100 | 118 |
| Rent | 96 | 95 | 81 | 103 | 93 |
| Repairs | 284 | 335 | 340 | 349 | 331 |
| Property & Misc. Taxes | 73 | 66 | 70 | 77 | 71 |
| Utilities | 114 | 109 | 114 | 112 | 112 |
| **Accrual Adjustments** | | | | | |
| + Depreciation | 3 01 | 309 | 338 | 407 | 341 |
| **Total Overhead Expenses** | $ 1,050 | $ 1,095 | $ 1,131 | $ 1,213 | $ 1,128 |
| **Total Farm Production Costs (b)** | $ 5,128 | $ 5,232 | $ 5,307 | $ 5,319 | $ 5,264 |
| NET FARM EARNINGS (a) - (b) | $ 170 | $ 534 | $ 642 | $ 989 | $ 613 |
| + Net Nonfarm Income | 44 | 37 | 61 | 83 | 57 |
| - Family Living & Income Taxes | 188 | 167 | 159 | 215 | 180 |
| NET EARNINGS | $ 26 | $ 404 | $ 544 | $ 857 | $ 490 |

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.*

# 2013 DATA BY PROFIT GROUPS–BALANCE SHEET SUMMARY

December 31, 2013

| | PROFIT GROUP | | | | |
|---|---|---|---|---|---|
| | BOTTOM 25% | THIRD 25% | SECOND 25% | TOP 25% | ALL FARMS |
| Number of Farms | 130 | 129 | 129 | 129 | 517 |
| Average Number of Cows | 218 | 370 | 362 | 311 | 315 |
| | ASSETS PER COW | | | | |
| Cash & Accounts Receivable | $ 447 | $ 508 | $ 582 | $ 751 | $ 579 |
| Feed & Crop Inventory | 1,100 | 1,104 | 1,107 | 1,226 | 1,135 |
| Supplies & Prepaid Expenses | 135 | 161 | 153 | 306 | 190 |
| Other Current Assets | 33 | 111 | 53 | 65 | 70 |
| TOTAL CURRENT ASSETS | $ 1,715 | $ 1,884 | $ 1,895 | $ 2,348 | $ 1,974 |
| Dairy Livestock | $ 2,189 | $ 2,263 | $ 2,406 | $ 2,235 | $ 2,286 |
| Machinery & Equipment | 1,981 | 2,010 | 2,274 | 2,898 | 2,303 |
| Other Intermediate Assets | 638 | 573 | 534 | 789 | 627 |
| TOTAL INTERMEDIATE ASSETS | $ 4,808 | $ 4,846 | $ 5,214 | $ 5,922 | $ 5,216 |
| Farm Real Estate | $ 4,832 | $ 4,564 | $ 4,805 | $5,582 | $ 4,946 |
| Other Fixed Assets | 288 | 458 | 375 | 518 | 410 |
| TOTAL FIXED ASSETS | $ 5,120 | $ 5,022 | $ 5,180 | $ 6,100 | $ 5,356 |
| TOTAL ASSETS | $11,643 | $ 11,752 | $ 12,289 | $ 14,370 | $ 12,546 |
| | LIABILITIES PER COW | | | | |
| Accounts Payable | $ 129 | $ 121 | $ 70 | $ 47 | $ 90 |
| Farm Credit Short-Term Loans | 164 | 227 | 104 | 147 | 161 |
| Other Current Liabilities | 382 | 442 | 479 | 453 | 445 |
| TOTAL CURRENT LIABILITIES | $ 675 | $ 790 | $ 653 | $ 647 | $ 696 |
| Farm Credit Intermediate Term | $ 980 | $ 1,099 | $ 1,082 | $ 1,234 | $ 1,108 |
| Other Intermediate Liabilities | 288 | 236 | 268 | 258 | 260 |
| TOTAL INTERMEDIATE LIABILITIES | $ 1,268 | $ 1,335 | $ 1,350 | $ 1,492 | $ 1,368 |
| Farm Credit Long-Term Real Estate | $ 1,047 | $ 1,256 | $ 1,316 | $ 870 | $ 1,142 |
| Other Long-Term Liabilities | 259 | 177 | 116 | 194 | 178 |
| TOTAL LONG-TERM LIABILITES | $ 1,306 | $ 1,433 | $ 1,432 | $ 1,064 | $ 1,320 |
| TOTAL LIABILITIES | $ 3,249 | $ 3,558 | $ 3,435 | $ 3,203 | $ 3,384 |
| | NET WORTH PER COW | | | | |
| OWNER'S NET WORTH | $ 8,394 | $ 8,194 | $ 8,854 | $ 11,167 | $ 9,162 |
| TOTAL LIABILITIES & NET WORTH | $ 11,643 | $ 11,752 | $ 12,289 | $ 14,370 | $ 12,546 |
| PERCENT NET WORTH | 72% | 70% | 72% | 78% | 73% |

*TABLE C-3.*

# 2013 DATA BY PROFIT GROUPS–EVALUATION FACTORS

| | PROFIT GROUP | | | | |
|---|---|---|---|---|---|
| | BOTTOM 25% | THIRD 25% | SECOND 25% | TOP 25% | ALL FARMS |
| Number of Farms | 130 | 129 | 129 | 129 | 517 |
| Average Number of Cows | 218 | 370 | 362 | 311 | 315 |
| Worker Equivalents | 4.94 | 7.84 | 7.93 | 6.67 | 6.80 |
| Cows Per Worker | 44 | 47 | 46 | 47 | 46 |
| Pounds of Milk Sold Per Worker | 951,497 | 1,099,680 | 1,116,026 | 1,179,549 | 1,097,288 |
| Pounds of Milk Sold Per Farm | 4,700,395 | 8,621,491 | 8,850,086 | 7,867,592 | 7,512,009 |
| Pounds of Milk Sold Per Cow | 21,585 | 23,284 | 24,421 | 25,287 | 23,848 |
| Milk Price Per Cwt. | $ 21.25 | $ 21.46 | $ 21.29 | $ 21.18 | $ 21.30 |
| Total Crop Acres | 546 | 859 | 827 | 797 | 766 |
| Crop Acres Per Cow | 2.5 | 2.3 | 2.3 | 2.6 | 2.4 |
| Crop Acres Per Worker | 111 | 110 | 104 | 119 | 113 |
| Feed Cost Per Cow | $ 1,839 | $ 1,874 | $ 1,885 | $ 1,778 | $ 1,849 |
| Feed Cost Per Cwt. | $ 8.52 | $ 8.05 | $ 7.72 | $ 7.03 | $ 7.75 |
| Feed as a Percent of Milk Sales | 40% | 37% | 36% | 33% | 36% |
| Feed & Crop Expense Per Cow[1] | 2,171 | 2,244 | 2,284 | 2,194 | 2,233 |
| Feed & Crop Expense Per Cwt. | $ 10.06 | $ 9.64 | $ 9.35 | $ 8.68 | $ 9.36 |
| Machinery Cost Per Cow[2] | $ 898 | $ 913 | $ 888 | $ 935 | $ 910 |
| Machinery Cost Per Cwt. | $ 4.16 | $ 3.92 | $ 3.63 | $ 3.70 | $ 3.82 |
| Labor & Family Living Per Cow | $ 913 | $ 901 | $ 896 | $ 960 | $ 917 |
| Labor & Family Living Per Cwt. | $ 4.23 | $ 3.87 | $ 3.67 | $ 3.80 | $ 3.85 |
| Assets Per Cow | $ 11,643 | $ 11,752 | $ 12,289 | $ 14,370 | $ 12,546 |
| Debt Per Cow | $ 3,249 | $ 3,558 | $ 3,435 | $ 3,203 | $ 3,384 |
| Net Worth Per Cow | $ 8,394 | $ 8,194 | $ 8,854 | $ 11,167 | $ 9,162 |
| Percent Return on Assets[3] | 0.8% | 4.5% | 5.4% | 6.7% | 4.8% |
| Percent Return on Equity[4] | 0.3% | 4.9% | 6.1% | 7.7% | 5.3% |

[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 C-4.*

## 2013 COST OF PRODUCING MILK BY PROFIT GROUPS

| | Bottom 25% | All Farm Average | Top 25% |
|---|---|---|---|
| | DOLLARS PER CWT. | | |
| Feed | $ 8.52 | $ 7.75 | $ 7.31 |
| Labor | $ 3.36 | $ 3.09 | $ 2.91 |
| Interest | $ 0.56 | $ 0.49 | $ 0.47 |
| Trucking (Marketing) | $ 1.04 | $ 0.95 | $ 0.90 |
| Crop | $ 1.54 | $ 1.61 | $ 1.36 |
| Other | $ 7.35 | $ 6.74 | $ 6.36 |
| Adjusted Cash Operating Expenses | $ 22.36 | 20.63 | $ 19.31 |
| + Depreciation | 1.39 | 1.43 | 1.35 |
| + Family Living | 0.87 | 0.76 | 0.71 |
| Total Costs | $ 24.63 | $ 22.82 | $ 21.37 |
| – Non-milk Income[1] | 3.52 | 3.59 | 3.38 |
| Net Cost of Production[2] | $ 21.11 | $ 19.23 | $ 17.99 |

[1] Nonmilk income includes accrual basis cattle, crop, other income and nonfarm income.

[2] Before any return on equity

*TABLE C-5.*

## 2013 CASH MARGINS BY PROFIT GROUPS

| | 2009 | 2010 | 2011 | 2012 | 2013 |
|---|---|---|---|---|---|
| Bottom Profit Group | | | | | |
| Actual Milk Price | $ 13.70 | $ 17.59 | $ 21.61 | $ 19.81 | $ 21.25 |
| Break-Even Milk Price | 18.24 | 18.30 | 21.59 | 20.43 | 21.48 |
| CASH MARGIN | $ -4.54 | $ -0.71 | $ 0.02 | $ -0.62 | $ -0.23 |
| Top Profit Group | | | | | |
| Actual Milk Price | $ 13.80 | $ 17.64 | $ 21.24 | $ 19.70 | $ 21.18 |
| Break-Even Milk Price | 15.98 | 15.12 | 16.21 | 15.82 | 18.04 |
| CASH MARGIN | $ -2.18 | $ 2.52 | $ 5.03 | $ 3.88 | $ 3.14 |

*TABLE C-6.*

## 2013 RESERVE DEBT CAPACITY BY PROFIT GROUPS

| | Bottom 25% | All Farm Average | Top 25% |
|---|---|---|---|
| | DOLLARS PER COW | | |
| Debt Capacity | $ 2,681 | $ 6,108 | $ 8,345 |
| – Capital Debt | 2,928 | 3,104 | 2,980 |
| RESERVE DEBT CAPACITY | $ -247 | $ 3,004 | $ 5,365 |

*TABLE D-1.*

# 2013 DATA BY REGIONS–EARNINGS WORKSHEET

| | REGIONS[1] | | | |
|---|---|---|---|---|
| | NEW YORK | NORTHERN NEW ENGLAND | SOUTHERN NEW ENGLAND | ALL FARMS |
| Number of Farms | 375 | 114 | 28 | 517 |
| Average Number of Cows | 307 | 359 | 256 | 315 |
| **Receipts** | DOLLARS PER COW | | | |
| Milk Sales | $ 5,110 | $ 4,980 | $ 4,904 | $ 5,080 |
| Cattle Sales | 312 | 284 | 296 | 305 |
| Crop Sales | 220 | 19 | 174 | 168 |
| Government Payments | 68 | 76 | 509 | 89 |
| Other | 159 | 211 | 198 | 174 |
| CASH RECEIPTS | $ 5,869 | $ 5,570 | $ 6,081 | $ 5,816 |
| **Accrual Adjustments** | | | | |
| + Change in Inventory-Raised Livestock | $ 64 | $ 57 | $ 38 | $ 61 |
| VALUE OF FARM PRODUCTION (a) | $ 5,933 | $ 5,627 | $ 6,119 | $ 5,877 |
| **COST OF GOODS SOLD** | | | | |
| Chemicals & Sprays | $ 71 | $ 25 | $ 55 | $ 59 |
| Custom Hire | 145 | 180 | 158 | 155 |
| Purchased Feed | 1,791 | 1,984 | 1,911 | 1,849 |
| Fertilizer & Lime | 195 | 193 | 189 | 195 |
| Freight & Marketing | 225 | 225 | 266 | 227 |
| Gasoline, Fuel & Oil | 250 | 249 | 259 | 251 |
| Hired Labor | 731 | 718 | 886 | 737 |
| Seed & Plants | 145 | 89 | 111 | 130 |
| Supplies | 263 | 281 | 228 | 267 |
| Veterinary, Medicine & Breeding | 206 | 175 | 186 | 198 |
| Other | 62 | 31 | 72 | 55 |
| Cow Replacements | 12 | 17 | 9 | 13 |
| **Total Cost of Goods Sold** | $ 4,096 | $ 4,167 | $ 4,330 | $ 4,136 |
| **Gross Margin** | $ 1,837 | $ 1,460 | $ 1,789 | $ 1,741 |
| **OVERHEAD** | | | | |
| Insurance | 61 | 62 | 67 | 62 |
| Interest | 121 | 111 | 96 | 118 |
| Rent | 100 | 76 | 82 | 93 |
| Repairs | 337 | 304 | 381 | 331 |
| Property & Misc. Taxes | 80 | 49 | 61 | 71 |
| Utilities | 106 | 128 | 118 | 112 |
| **Accrual Adjustments** | | | | |
| Depreciation | 356 | 298 | 319 | 341 |
| **Total Overhead Expenses** | $ 1,161 | $ 1,028 | $ 1,124 | $ 1,128 |
| **Total Farm Production Costs (b)** | $ 5,257 | $ 5,195 | $ 5,454 | $ 5,264 |
| NET FARM EARNINGS (a) - (b) | $ 676 | $ 432 | $ 665 | $ 613 |
| + Net Nonfarm Income | 50 | 71 | 71 | 57 |
| - Family Living & Income Taxes | 187 | 157 | 198 | 180 |
| NET EARNINGS | $ 539 | $ 346 | $ 538 | $ 490 |

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.

[1] Regions are divided by state not Federal Milk Orders. Northern New England is Maine, N.H. and Vt. Southern New England is Mass., Conn. and R.I.

*TABLE D-2.*

# 2013 DATA BY REGIONS–BALANCE SHEET SUMMARY

DECEMBER 31, 2013

| | REGIONS[1] | | | |
|---|---|---|---|---|
| | NEW YORK | NORTHERN NEW ENGLAND | SOUTHERN NEW ENGLAND | ALL FARMS |
| Number of Farms | 375 | 114 | 28 | 517 |
| Average Number of Cows | 307 | 359 | 256 | 315 |
| | ASSETS PER COW | | | |
| Cash & Accounts Receivable | $ 604 | $ 508 | $ 557 | $ 579 |
| Feed & Crop Inventory | 1206 | 925 | 1152 | 1135 |
| Supplies & Prepaid Expenses | 200 | 146 | 282 | 190 |
| Other Current Assets | 80 | 29 | 117 | 70 |
| TOTAL CURRENT ASSETS | $ 2,090 | $ 1,608 | $ 2,108 | $ 1,974 |
| Dairy Livestock | $ 2,318 | $ 2,234 | $ 1,952 | $ 2,286 |
| Machinery & Equipment | 2,440 | 1,930 | 2,117 | 2,303 |
| Other Intermediate Assets | 606 | 637 | 874 | 627 |
| TOTAL INTERMEDIATE ASSETS | $ 5,364 | $ 4,801 | $ 4,943 | $ 5,216 |
| Farm Real Estate | $ 4,985 | $ 5,212 | $ 6,986 | $ 4,946 |
| Other Fixed Assets | 182 | 295 | 265 | 410 |
| TOTAL FIXED ASSETS | $ 5,167 | $ 5,507 | $ 7,251 | $ 5,356 |
| TOTAL ASSETS | $ 12,621 | $ 11,916 | $ 14,302 | $ 12,546 |
| | LIABILITIES PER COW | | | |
| Accounts Payable | $ 81 | $ 121 | $ 42 | $ 90 |
| Farm Credit Short-Term Loans | 153 | 170 | 236 | 161 |
| Other Current Liabilities | 461 | 412 | 364 | 445 |
| TOTAL CURRENT LIABILITIES | $ 695 | $ 703 | $ 642 | $ 696 |
| Farm Credit Intermediate Term | $ 1,149 | $ 1,084 | $ 531 | $ 1,108 |
| Other Intermediate Liabilities | 250 | 288 | 243 | 260 |
| TOTAL INTERMEDIATE LIABILITIES | $ 1,399 | $ 1,372 | $ 774 | $ 1,368 |
| Farm Credit Long-Term Real Estate | $ 1,179 | $ 995 | $ 1,329 | $ 1,142 |
| Other Long-Term Liabilities | 158 | 256 | 48 | 178 |
| TOTAL LONG-TERM LIABILITES | $ 1,337 | $ 1,251 | $ 1,377 | $ 1,320 |
| TOTAL LIABILITIES | $ 3,431 | $ 3,326 | $ 2,793 | $ 3,384 |
| | NET WORTH PER COW | | | |
| OWNER'S NET WORTH | $ 9,190 | $ 8,590 | $ 11,509 | $ 9,162 |
| TOTAL LIABILITIES & NET WORTH | $ 12,621 | $ 11,916 | $ 14,302 | $ 12,546 |
| PERCENT NET WORTH | 73% | 72% | 80% | 73% |

[1] Regions are divided by state not Federal Milk Orders. Northern New England is Maine, N.H. and Vt. Southern New England is Mass., Conn. and R.I.

*TABLE D-3.*

# 2013 DATA BY REGIONS–EVALUATION FACTORS

| | REGIONS[1] | | | |
|---|---|---|---|---|
| | NEW YORK | NORTHERN NEW ENGLAND | SOUTHERN NEW ENGLAND | ALL FARMS |
| Number of Farms | 375 | 114 | 28 | 517 |
| Average Number of Cows | 307 | 359 | 256 | 315 |
| Worker Equivalents | 6.83 | 7.05 | 6.24 | 6.80 |
| Cows Per Worker | 45 | 51 | 41 | 46 |
| Pounds of Milk Sold Per Worker | 1,080,462 | 1,188,736 | 923,255 | 1,097,288 |
| Pounds of Milk Sold Per Farm | 7,379,555 | 8,380,589 | 5,761,111 | 7,512,009 |
| Pounds of Milk Sold Per Cow | 24,060 | 23,357 | 22,486 | 23,848 |
| Milk Price Per Cwt. | $ 21.26 | $ 21.33 | $ 21.81 | $ 21.30 |
| Total Crop Acres | 775 | 757 | 522 | 766 |
| Crop Acres Per Cow | 2.5 | 2.1 | 2.0 | 2.4 |
| Crop Acres Per Worker | 113 | 107 | 84 | 113 |
| Feed Cost Per Cow | $ 1,791 | $ 1,984 | $ 1,911 | $ 1,849 |
| Feed Cost Per Cwt. | $ 7.44 | $ 8.49 | $ 8.50 | $ 7.75 |
| Feed as a Percent of Milk Sales | 35% | 40% | 39% | 36% |
| Feed & Crop Expense Per Cow[2] | $ 2,202 | $ 2,291 | $ 2,266 | $ 2,233 |
| Feed & Crop Expense Per Cwt. | $ 9.15 | $ 9.81 | $ 10.08 | $ 9.36 |
| Machinery Cost Per Cow[3] | $ 915 | $ 881 | $ 942 | $ 910 |
| Machinery Cost Per Cwt. | $ 3.80 | $ 3.77 | $ 4.19 | $ 3.82 |
| Labor & Family Living Per Cow | $ 918 | $ 875 | $ 1,084 | $ 917 |
| Labor & Family Living Per Cwt. | $ 3.82 | $ 3.75 | $ 4.82 | $ 3.85 |
| Assets Per Cow | $ 12,621 | $ 11,916 | $ 14,302 | $ 12,546 |
| Debt Per Cow | $ 3,431 | $ 3,326 | $ 2,793 | $ 3,384 |
| Net Worth Per Cow | $ 9,190 | $ 8,590 | $ 11,509 | $ 9,162 |
| Percent Return on Assets[4] | 5.2% | 3.8% | 4.4% | 4.8% |
| Percent Return on Equity[5] | 5.9% | 4.0% | 4.7% | 5.3% |

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

[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 Farm Income

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

$$\text{Cash Receipts} - \text{Adjusted Cash Operating Expenses}$$

### Adjusted Cash Operating Expenses

Cash 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 Earnings

An accrual measure of farm profitability, net earnings reflects all revenues and costs associated with the farm business. It is equal to:

Net 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:

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

### 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:

$$\text{Debt Capacity} - \text{Capital Debt}$$

### Overhead Costs

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

# *2013 Northeast Dairy Farm Summary*

## A joint project of Northeast Farm Credit Associations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