Northeast Dairy Farm Summary

2012

2012
Northeast Dairy Farm
Summary

A joint project of Northeast Farm Credit Associations

Farm Credit East, ACA
240 South Road
Enfield, CT 06082-4451
860.741.4380
FarmCreditEast.com

Farm Credit of Maine, ACA
615 Minot Avenue
Auburn, ME 04210
207.784.0193
FarmCreditMaine.com

Yankee Farm Credit, ACA
289 Hurricane Lane, Suite 102
Williston, VT 05495-0467
802.879.4700
YankeeACA.com

2012

Northeast Dairy Farm Summary

Prepared by:

Chris Laughton, Farm Credit East

Project Team:

Tonya Egan, Farm Credit East
Lena Hildebrandt, Farm Credit of Maine
Suzanne Petig, Yankee Farm Credit

May 2013

Acknowledgments

No research project of the scope of *The Northeast Dairy Farm Summary (DFS)* would be possible without the collaboration and hard work of many individuals. The author would like to thank Joanna Lidback, who authored the previous five reports, and the authors who preceded her. Joanna provided a great deal of assistance and left a treasure trove of Excel files and formulas for manipulating data. Thanks to Charles Branche and John Robinson, of Farm Credit Financial Partners, Inc., for creating the benchmark tool and for their assistance in running reports.

In addition, thanks are due to branch office "champions" and loan officers across the Northeast who reconciled reams of raw farm financial data from hundreds of farms and entered the information into the system. Every year, their hard work provides the raw material for the creation of the *DFS*.

Thanks to our partners at Yankee Farm Credit and Farm Credit of Maine for making this report an ongoing priority and allocating significant staff time and resources to its creation.

And finally, a sincere thank you to the hardworking dairy farmers of the Northeast. Thanks for providing your farm data for this project. We hope the end product is useful to you, its primary audience. You inspire us all with the work that you do.

Version 1.1 – errata corrected on p. 40 & 43

Highlights of the 2012 Northeast Dairy Farm Summary

- 504 dairy farms participated in the *2012 Northeast Dairy Farm Summary.*
- Profitability declined by 48 percent in 2012. Net earnings fell to $415 per cow in 2012, down from $797 per cow in 2011. Farm milk price decreased by $1.79 per hundredweight (cwt.) to $19.74.
- Many costs were up in 2012, reaching record levels in some categories. Total cost of production was up to $22.47 per cwt. in 2012, including depreciation and family living.
- Net cost of production[1] (NCOP) was $18.23 per cwt., slightly higher than 2011.
- Specific operating cost categories were up in 2012. Feed expense increased from $1,578 per cow in 2011 to $1,767 in 2012. Labor, a dairy's second largest expense, was up 5 percent and crop inputs, such as fertilizer and seed, were up nearly 25 percent.
- Productivity measures were up. Per cow production was up by 1.3 percent from 2011 at 23,552 pounds (lbs.). Milk sold per worker was up 2.7 percent to 1,115,785 lbs. Total number of cows per herd was also up by 17 head to 343.
- 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.
- Reserve debt capacity fell to $2,905 per cow, pushing the five-year average down as well to $1,682.
- Percent net worth held steady at 72 percent and debt-per-cow increased from $3,164 per cow to $3,372.

Profile of the Average Dairy Farmer

	2011	2012
Number of Cows	326	339
Milk Sold per Cow	23,244 lbs.	23,552 lbs.
Milk Sold per Worker	1,085,617 lbs.	1,115,785 lbs.
Milk Price per Cwt.	$21.53	$19.74
NCOP per Cwt.	$18.10	$18.23
Net Worth	72%	72%
Net Earnings per Cow	$797	$415
Return on Assets	8.4%	4.7%

[1]Total cost of production less non-milk income. For more information, see page 9.

Table of Contents

Index of Figures

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.

The *Dairy Farm Summary* is a unique project within the U.S. dairy industry as a major ongoing regional summary of actual dairy farm business results. It is the result of cooperation and hard work by many people. We are grateful, first and foremost, to the 504 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 close out their books and 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 504 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 ancillary 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 *2012 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 the 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 particularly true in a year such as 2012. While the "average farm" had $415 per cow in net income in 2012, 97 farms (almost 19 percent) in our sample had negative net farm income. Focusing on average results belies the fact that many 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.

Many people in the industry refer to a three-year dairy cycle with respect to milk price, which usually consists of one year of depressed prices, followed by a recovery year, a high year and then another down year. This pattern generally held during the past four years starting with 2009's low price of $13.80, next $18.07 in 2010, a record-high milk price of $21.53 per cwt. in 2011, and a "down year" in 2012, with an average price of $19.74 per cwt. Net earnings followed and were down to $463 per cow for the average *DFS* farm. As you read this summary, it is important to keep the following in mind:

1. Milk prices fell significantly in 2012, while costs of production, particularly feed, labor and crop input costs increased significantly. Nonetheless, 2012 marked a "soft landing" for Northeast dairy farmers — if you believe in three-year cycles (or perhaps 2012 is an anomaly to the three-year theory). 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."
2. Dairy farmers took on some additional debt in 2012, consistent with a downturn in earnings.
3. Cash flow for many farms permitted some capital replacement. Deferred maintenance and machinery and equipment replacement occurred as capital purchases held roughly steady from the prior year at $775 per cow.

Without question, navigating through the past several years has been challenging for dairy farm management. As lenders, financial service providers and consultants heavily involved with Northeast dairy producers, Farm Credit is fully aware of the challenges in managing milk price volatility and rising input costs experienced by Northeast dairy producers. For the sake of comparison, we have remained consistent in focusing on the average farm while discussing 2012 results and also multiyear averages in the *2012 Dairy Farm Summary*.

Changes to the Dairy Farm Summary

There have been tremendous changes in the dairy industry during the 30^{+} years that we have published this study. As the industry changes, so must we to ensure the relevance and utility of the *DFS*. This year, most notably, we changed the size categories into which we divide our analysis. Until this point, we used four categories: 89 cows or fewer; 90-to-149 cows; 150-to-299 cows and 300 cows or more. Beginning this year, we changed these categories to: 99 cows or fewer; 100-to-299 cows; 300-to-699 cows, and 700 cows or more.

The reason behind this change is that while the Northeast still has large numbers of small dairies, the largest dairies keep getting bigger. Over time, our 300^{+} cow category came to include dairies from 300 to more than 3,000 cows, and the financial results within the category varied substantially.

The 700^{+} category is an attempt to segment a statistically significant portion of our sample that will allow us to quantify the economics of today's large dairies. Moreover, the new size categories segment our sample by business model. The 99-cows-or-fewer category should capture the low overhead operator, and the 100-to-299 category should capture the family operation, utilizing hired help. The 300-to-699 category should encompass the large family or multi-family operation with significant hired labor, and the 700-or-greater category would cover the large, mostly hired labor model. Note that the largest category, while including the fewest number of farms, produces by far the most milk.

Figure A
Farm Size and Milk Production

	99 Cows or Less	100-299 Cows	300-699 Cows	700 Cows or More
Number of farms	133	190	111	70
Volume of Milk Produced[1]	5%	18%	30%	47%

[1]as a percent of all farms in the 2012 DFS

We also made a change that can be seen in Tables A-1a and A-1b. We will switch to "gross margin" format in our tables next year. This year, we showed Table A-1 in both the new and old format. The old, or "income & expense" format, simply lists expenses all together, alphabetically. The new "gross margin" format, separates expenses into variable and fixed (overhead) costs. Variable costs are those costs which vary directly with quantity produced,

examples being feed and labor, while fixed costs are those that generally do not change with incremental changes in production. Examples of fixed costs include property taxes and insurance. The reason for making this change is because, while both categories of expenses are important, it is useful for cost accounting to divide expenses into variable and fixed and to look at gross revenue, variable expenses (or cost of goods sold), gross margin and overhead.

Finally, another important change in this year's *DFS*, is the change in regional comparisons. In the past, the *DFS* has compared New York and New England. It has long been known that there are significant differences between farms in Northern New England (Vermont, New Hampshire and Maine), and Southern New England (Massachusetts, Connecticut and Rhode Island). So we separated the New England sample into those two categories. The number of farms participating in the benchmark from Southern New England is small, but their story is worth telling separately.

In figures containing multi-year averages, we added a three-year average to our existing five-year averages for several reasons. One is that if we believe in the three-year cycle theory, grouping five years would not capture complete price cycles. Another is, in an inflationary environment where production costs significantly increase each year, it was felt that looking back five years was too far, and a three-year average would be more appropriate.

Figure 1

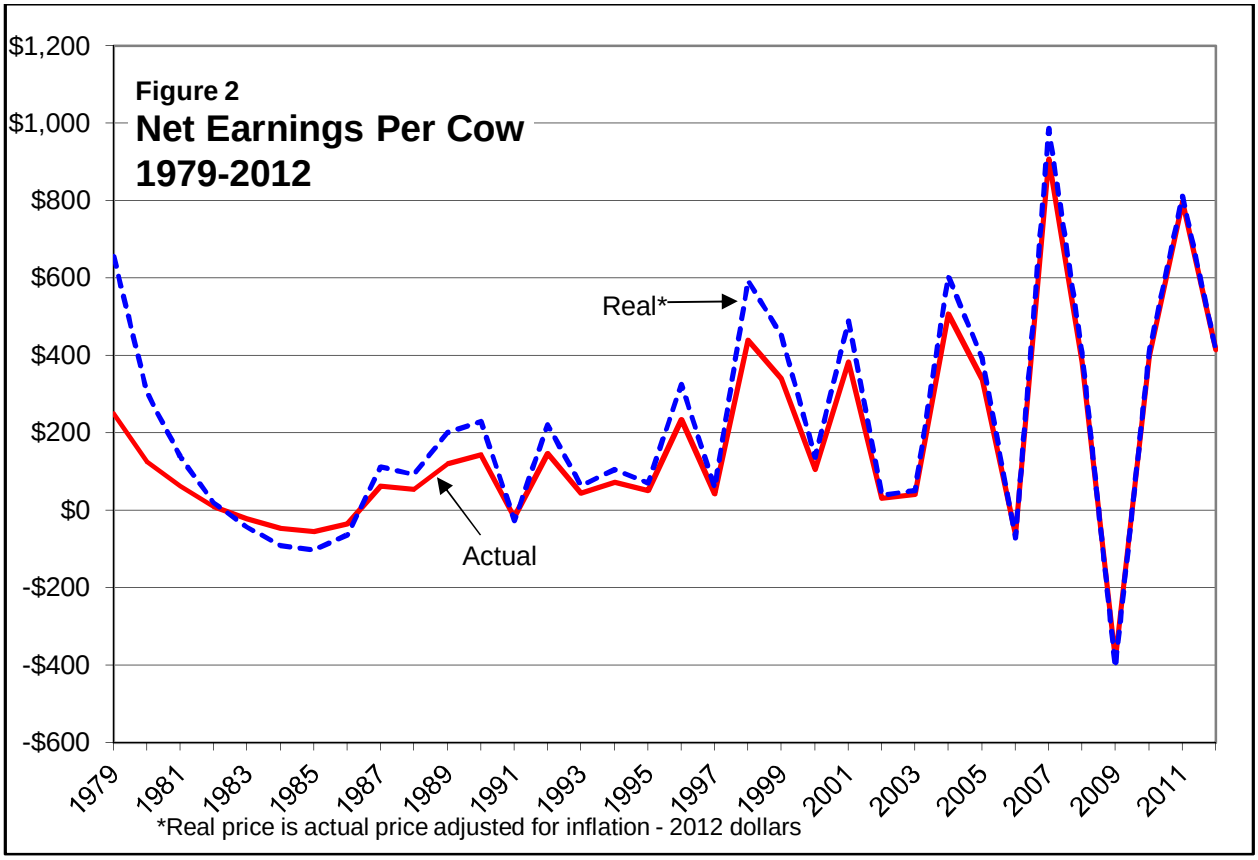
Dairy Farm Profitability

	Net Earnings per Cow[1]	Return on Assets[2]	Return on Equity[3]
2008	$ 383	5.1%	5.2%
2009	$ -386	-2.6%	-5.4%
2010	$ 396	5.2%	5.8%
2011	$ 797	8.4%	10.7%
2012	$ 415	4.7%	5.0%
3-Year Average	$ 536	6.1%	7.2%
5-Year Average	$ 321	4.2%	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



Analysis of 2012

Profitability Fell in 2012

Profitability fell for the Northeast dairy industry in 2012 with a decrease of $382 in average net earnings per cow. Net earnings were $415 per cow, well below the three-year average of $536.

Income was down as the milk price dropped by $1.79 per cwt. to an average of $19.74 in 2012, yet cost of production increased by 1 percent, year-over-year, squeezing producer margins.

Nonetheless, in terms of actual (not adjusted for inflation) dollars, 2012 was the fifth most profitable year in the history of the *DFS*, after 2007, 2011, 2004 and 1998.

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 long-range business planning 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 for years such as 2012. To further illustrate, when ranked, four of the last six 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 challenging business climate faced by Northeast dairy producers. It may, however, offer higher average returns over the course of the cycle for those who are able to manage the ups and downs.

Figure 2A

Comparison of Multiyear Averages

	Three-Year Average	Five-Year Average	Ten-Year Average
Net Earnings per Cow	$ 536	$ 321	$ 334
Return on Assets	6.1%	4.2%	4.9%
Return on Equity	7.2%	4.3%	5.0%

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 Declines: Evidence of the Three-Year Cycle?

The average farm milk price at $19.74 per cwt. was down nearly 9 percent from 2011's $21.53. It was still $1.27 above the five-year average of $18.47/cwt. (Figure 3A). In terms of actual milk prices, 2012 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, 2012 drops to 21st. The first year of the *DFS***,** 1979, ranks first. In contrast to 2011, when no payments were made under the Milk Income Loss Contract (MILC) Program, payments were triggered in nine months during 2012.

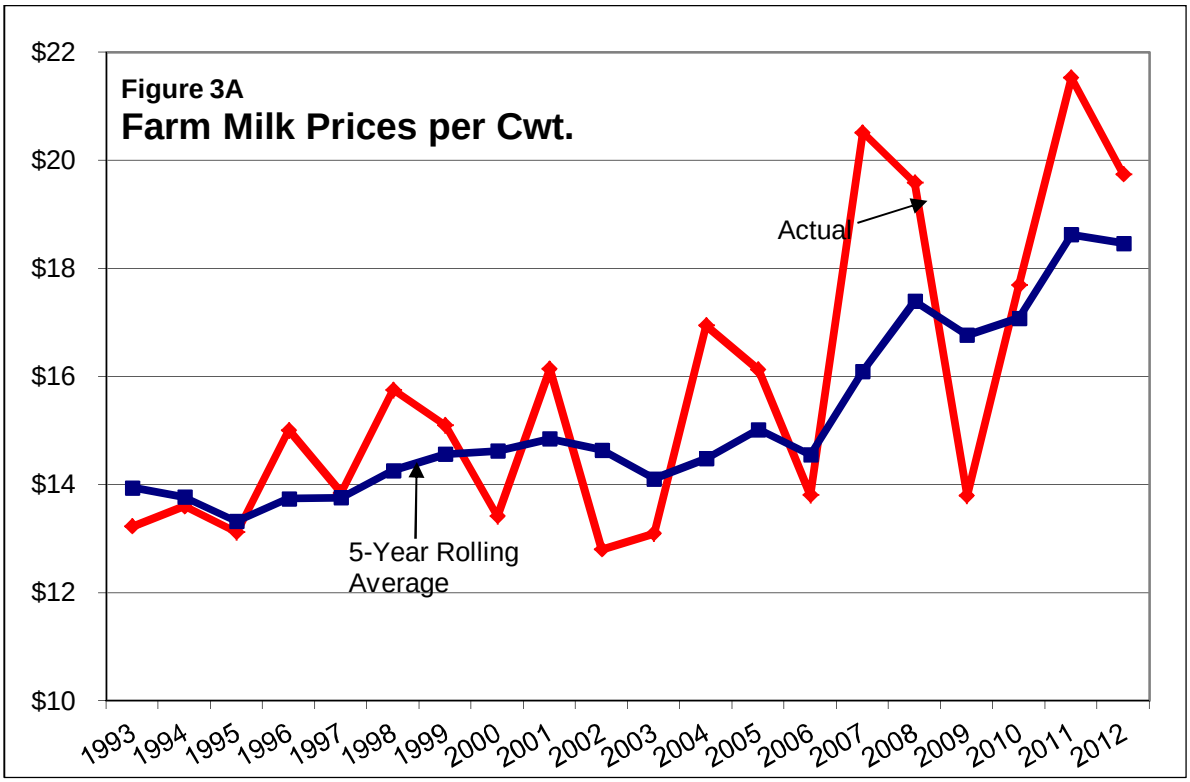


Figure 3A
Farm Milk Prices per Cwt.
$22
$20
$18
$16
$14
$12
$10
Actual
5-Year Rolling Average
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
2005
2006
2007
2008
2009
2010
2011
2012

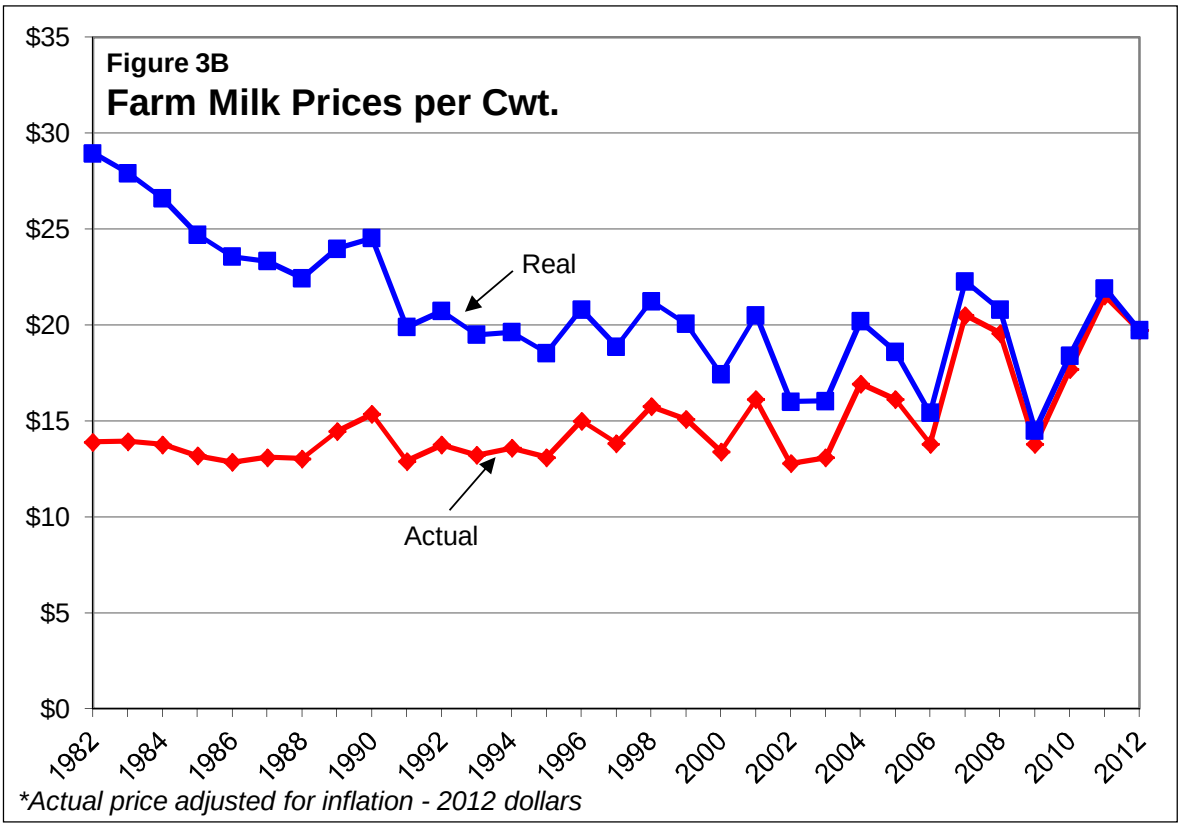


Figure 3B
Farm Milk Prices per Cwt.
$35
$30
$25
$20
$15
$10
$5
$0
Real
Actual
1982
1984
1986
1988
1990
1992
1994
1996
1998
2000
2002
2004
2006
2008
2010
2012
*Actual price adjusted for inflation - 2012 dollars

Monthly milk price began the year at a reasonably strong $19.39/cwt. It fell each month through the spring of 2012. The low price (Boston Blend) was in June at $16.58 per cwt. and the high was $21.35 per cwt. in November. The average Boston Blend price for 2012 was $18.63. Several factors have 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 has 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.

Cost of Production Up Slightly

The net cost of production (NCOP) increased slightly (less than 1 percent) from 2011's record high. 2011's NCOP was $18.10/cwt., the highest in *DFS* history. 2012's NCOP rose to $18.23. Three key figures to review for 2012's cost of production analysis of the average dairy farm in the *DFS* include:

- Cash operating expenses were $20.49 per cwt., up $1.19 from 2011.
- Total costs were $22.47 per cwt., up $1.16.
- NCOP was $18.23 per cwt., up $0.13.

N*et* cost of production is important to measure the costs directly relying upon milk sales alone. A substantial increase in non-milk income nearly offset the large increase in total costs in 2012, leading to a much more restrained increase in NCOP.

Figure 4A

Cost of Producing Milk – Accrual Basis

	2008	2009	2010	2011	2012
			Dollars per Cwt.		
Feed	$ 6.19	$ 5.58	$ 5.58	$ 6.79	$ 7.61
Labor	2.94	2.88	2.81	2.97	3.11
Interest	0.59	0.55	0.58	0.52	0.50
Marketing	0.98	0.93	0.94	0.87	0.95
Crop	1.30	1.12	1.10	1.28	1.54
Other	6.92	5.78	6.08	6.87	6.78
Adjusted Cash Operating Expenses	$18.92	$16.84	$17.09	$19.29	$20.49
+ Depreciation	1.40	1.32	1.23	1.33	1.34
+ Family Living	0.87	0.74	0.67	0.69	0.64
Total Costs	$21.19	$18.90	$18.99	$21.31	$22.47
- Non-Milk Income[1]	3.31	3.37	3.02	3.21	4.24
Net Cost of Production[2]	$17.88	$15.53	$15.97	$18.10	$18.23

[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 $0.36 added to the NCOP for 2012.

Driven by a 12 percent per cwt. increase in feed expense in 2012, the increased total costs is a surprise to anyone. Lower grain supplies globally, a small national corn crop due in large part to the national drought, and a tough growing year locally all combined for higher feed expenses in both grain and forage purchases as well as tighter inventory levels. The majority of producers who grew their own grain were not able to produce as much as they have in past years for the second year in a row.

Other categories with increases include labor and crop inputs (chemicals and sprays, fertilizer and lime, and seeds and plants), but rising feed costs were responsible for the bulk of the increase in cash operating expenses. Increases in most other items were subdued and some categories even went down. Presumably Northeast dairy producers continued to catch up on deferred maintenance that they put off in the lower margin years of the recent past as repair

expenses remained high at $304 per cow in 2012 after averaging $235 for 2009 and 2010. Labor was up $32 per cow or 5 percent. The "other" expense cost category declined in 2012.

Figure 4B

Specific Cost Categories

	2011		2012		Percent Increase	
	23,244 Lbs. per Cow		*23,552 Lbs. per Cow*			
	per Cow	per Cwt.	per Cow	per Cwt.	per Cow	per Cwt.
Feed	$ 1,578	$ 6.79	$ 1,767	$ 7.50	12%	9%
Fuel	$ 249	$ 1.07	$ 253	$ 1.07	2%	0%
Crop Inputs	$ 298	$ 1.28	$ 357	$ 1.52	20%	16%
Freight (Marketing)	$ 202	$ 0.87	$ 221	$ 0.94	9%	8%
Other[1]	$ 83	$ 0.36	$ 79	$ 0.34	-5%	-6%
Labor	$ 690	$ 2.97	$ 722	$ 3.07	5%	3%

[1] *revised from 2011*

It is important to note that the $18.23 average NCOP includes no return on the producer's equity investment. While it is 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 $0.36 per cwt. If we were to include a 5 percent ROE goal, for example, this would be equivalent to a $20.03 net cost of production.

Figure 4C compares NCOP by our three main regions for 2012. 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 non-milk income driven by more crop sales and are also able to grow more grain for their own use. However, Connecticut, Maine and Massachusetts have assistance programs for dairy farmers, which help supplement dairy farm income. Farms in the Southern New England sample had higher government payments (reflected in "non-milk income" below) than their New York or Northern New England counterparts, which helped make their NCOP more competitive. The difference in NCOP was, however, narrower in 2012 than 2011 between the two regions, with New York producing milk at $1.20 per cwt. less than New England, when all six states are combined.

Figure 4C

NCOP by Region 2012

	Cost per Cwt. New York	Northern New England[1]	Southern New England[2]
Feed	$ 7.10	$ 8.75	$ 8.50
Labor	$ 3.03	$ 3.06	$ 3.91
Interest	$ 0.50	$ 0.49	$ 0.48
Marketing	$ 0.92	$ 0.98	$ 1.18
Crop	$ 1.56	$ 1.39	$ 1.72
Other	$ 6.67	$ 6.76	$ 7.35
Adjusted Cash Operating Expenses	$ 19.78	$ 21.43	$ 23.14
+ Depreciation	$ 1.37	$ 1.19	$ 1.38
+ Family Living	$ 0.63	$ 0.66	$ 0.64
Total Costs	$ 21.78	$ 23.28	$ 25.17
- Non-milk Income	$ 3.83	$ 3.87	$ 6.29
Net Cost of Production	$ 17.95	$ 19.42	$ 18.87

[1] *Northern New England = Vermont, New Hampshire, Maine*
[2] *Southern New England = Massachusetts, Connecticut, Rhode Island*

In Figure 4D, we compare the NCOP by herd-size category. The larger herds had more-or-less flat NCOP. The smallest herds increased NCOP about 6 percent. Generally, larger herds have an advantage in spreading costs out 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.

Figure 4D

NCOP by Herd Size 2012

	Cost per Cwt.			
	< 100 cows	**100-299 cows**	**300-699 cows**	**700+ cows**
	133 farms	*190 farms*	*111 farms*	*70 farms*
Feed	$ 6.83	$ 7.27	$ 7.39	$ 7.72
Labor	$ 1.78	$ 2.95	$ 3.18	$ 3.16
Interest	$ 0.67	$ 0.55	$ 0.48	$ 0.48
Marketing	$ 1.09	$ 1.00	$ 0.94	$ 0.90
Crop	$ 1.49	$ 1.69	$ 1.52	$ 1.46
Other	$ 7.58	$ 7.22	$ 6.75	$ 6.34
Adjusted Cash Operating Expenses	$ 19.44	$ 20.68	$ 20.26	$ 20.04
+ Depreciation	$ 2.30	$ 1.78	$ 1.28	$ 1.08
+ Family Living	$ 2.65	$ 1.83	$ 0.59	$ 0.35
Total Costs	$ 24.39	$ 24.29	$ 22.13	$ 21.47
- Non-milk Income	$ 5.10	$ 5.42	$ 3.94	$ 3.82
Net Cost of Production	$ 19.29	$ 18.87	$ 18.19	$ 17.65

In an industry noted for growing volatility of 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 and Production Increases

The number of cows per farm increased from 326 head to 343 in the 2012 *DFS* sample. Driven both by this higher cow number as well as increased milk production per cow of 308 pounds, total milk production per farm was up 6.6 percent to 8,078,285 pounds. Milk sold per worker was also up by 2.8 percent to 1,115,785 pounds in 2012. These are the highest productivity measures in the history of the study.

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 steady over the past decade for this group of 51 farms, starting with an average 288 head in 2003 and ending with 368 head in 2012. Of course, each farm grew at a different rate, with some having major expansions in some years and being flat in others. But collectively they averaged a 2.8 percent annual growth rate in individual farm herd size over the time period, with total growth of 28 percent.

Figure 5A
Growth in Herd Size of Same DFS Farms

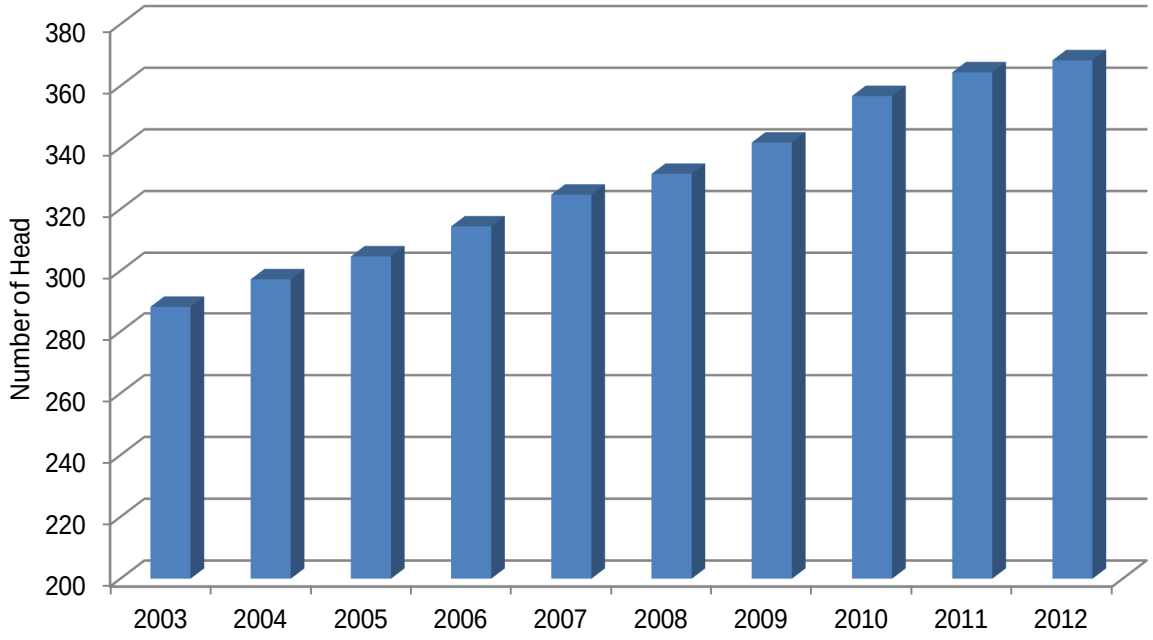


Figure 5B illustrates the close relationship between labor productivity, cow productivity, employee compensation and overall dairy farm profitability. As more cows are handled per worker, milk sold per worker increases. Milk sold per worker and per cow share a close positive relationship. That is, as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

Figure 5B also shows increasing labor and family living expenses per person as milk sold per worker increases, but those farms with higher labor efficiency 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 $20,724, but on a per cwt. basis, their cost is $5.10. In contrast, those selling 1.4 million or more pounds of milk per person have a labor and family living cost of $3.17 per cwt. despite paying more than 2.5 times per person. Thus the efficiency gained also allows for greater flexibility with respect to employee compensation.

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	7%	77	25	16,259	$ 20,724	$ (206)
500,000-599,000	10%	97	31	18,466	$ 25,743	$ (181)
600,000-699,000	9%	110	33	19,974	$ 28,359	$ (145)
700,000-799,000	8%	177	35	21,566	$ 36,259	$ 79
800,000-899,000	11%	238	40	21,780	$ 35,581	$ 173
900,000-999,000	9%	233	44	21,928	$ 40,184	$ 278
1 to 1.099 million	10%	422	46	23,161	$ 39,905	$ 161
1.1 to 1.199 million	10%	533	50	23,494	$ 43,575	$ 475
1.2 to 1.399 million	12%	626	56	23,448	$ 44,798	$ 493
1.4 million or more	12%	653	72	24,302	$ 55,381	$ 497

[1] *Includes operator and other family labor.*

[2] *Net earnings per cow less net non-farm income.*

An obvious question is: How much additional investment is required to get higher labor productivity? Based on the four herd size groups, as labor efficiency increased, the required investment per cwt. of milk sold decreased as shown in Figure 6. For example, the small farm group produced 44 percent less milk per worker than the average of all farms, but required 77 percent more investment ($85 versus $48 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	624,771	19,425	$ 85	0.28	1.9%
100 to 299	893,270	21,421	66	0.37	3.4%
300 to 699	1,153,667	23,377	52	0.45	4.8%
700 or More	1,299,366	25,051	42	0.55	6.1%
All Farms	1,115,785	23,552	48	0.49	4.7%

[1]Total assets divided by cwt. of milk sold

[2]Total assets divided by cash receipts = number of years

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

Cash Flow Declines, but Remains Healthy

Cash flow is another measure of financial health for a dairy operation or any business. There is a minimum requirement of cash for each business 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 fell in 2012 to $1.75 per cwt., down from $3.43 in 2011, but better than the $1.37 margin of 2010 (Figure 7). The highest cash margin in *DFS* history was 2007's $4.14 per cwt.

Figure 7

Cash Flow Analysis per Cwt.

	2008	2009	2010	2011	2012
Actual Milk Price	$ 19.59	$ 13.80	$ 17.70	$21.53	$ 19.74
Cash Required	$ 21.09	$ 19.14	$ 19.31	$ 21.36	$ 22.09
- Other Income	3.19	3.12	2.98	3.26	3.91
Breakeven Milk Price	$ 17.90	$ 16.02	$ 16.33	$ 18.10	$ 18.18
Cash Margin	$ 1.69	$ -2.22	$ 1.37	$ 3.43	$ 1.56

Cash Margin Definitions

Total cash operating expenses	*Cattle sales*
+ Family living expense and income tax	*+ Capital sales*
+ Scheduled principal payments	*+ Crop sales*
	+ Other farm & non-farm income
= Cash required	*= Other income*

Figure 7 shows the trend in cash margins experienced by the average dairy farm in the summary since 2008. Due to the substantial inflation of farm costs in 2007 and 2008 and again in 2011, the breakeven milk price has moved up significantly from the area of $14 per cwt., which was common before 2007. Also, breakeven milk price has exhibited substantial volatility during this time. Milk prices have moved up in most of these years, setting new records in 2007 and 2011. The net result has been very volatile cash margin, the difference between actual and breakeven milk price. Interestingly, 2007 cash margin still stands as a record high despite the fact the 2011 milk price was virtually the same as in 2007.

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.
- 2008, 2010 and 2012 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 2012, there were more than sufficient farm earnings to provide adequate cash flow to service debt for the average *DFS* farm, maintaining debt capacity and reserve debt capacity at a higher-than-average level (Figure 8).

Figure 8

Debt Capacity

	2008	2009	2010	2011	2012
Average Farm Credit Interest Rate[1]					
Commercial (Intermediate Term)	5.1%	4.1%	4.1%	4.1%	4.0%
Real Estate (Long Term)	5.4%	4.4%	4.6%	4.5%	4.4%
Debt Capacity	$ 4,837	$ (383)	$ 4,770	$ 8,074	$ 5,322
- Capital Debt	2,691	3,038	3,126	2,939	3,080
RESERVE DEBT CAPACITY	$ 2,146	$ (3,421)	$ 1,644	$ 5,135	$ 2,242
3-Year Average Reserve Debt Capacity[2]	$ 2,169	$ 1,270	$ 123	$ 1,119	$ 3,007
5-Year Average Reserve Debt Capacity[2]	$ 2,347	$ 1,135	$ 946	$ 2,118	$ 1,549
Debt Payments as Percent of Milk Sales	12%	17%	13%	11%	13%

[1] Average interest rates for Northeast Region ACAs excluding benefit of patronage dividends.

[2] Rolling averages include pre-2008 data.

The current debt capacity is substantially impacted by historically low interest rates, which continued during 2012. 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 rates and this will impact debt 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 abut $1,000 per cow – a major change in their repayment capacity.

Also shown on the graph is the five-year average for reserve debt capacity. In 2012, it was $1,682 per cow, down from the previous year. "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, for the most part, Northeast dairy farmers and their Farm Credit lenders have taken this to heart during the tremendous volatility of the post-2000 period in terms of maintaining a healthy level of reserve debt capacity. During 2009, when there was no cash flow capacity to repay debt, dairy farmers and their lenders were positioned to get through the difficult year much better than occurred in other parts of the country where farmers and lenders struggled during 2009. In the increasingly volatile dairy business climate which now exists, liquidity is a critical factor in long-term business viability and financial flexibility to get through 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.

Capital Purchases Up

Northeast dairy farmers increased capital spending by 5 percent in 2012.(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 $265,825, which is also significantly above the five-year average of $205,029. The rate of reinvestment improved to 7.1 percent, bringing the five-year average up to 6.2 percent.

Figure 9

Capital Purchases

	Per Farm	Per Cow	% of Total Assets[1]
2008	$235,824	$ 867	8.2%
2009	$122,988	$ 444	4.3%
2010	$146,880	$ 480	4.6%
2011	$253,628	$ 778	6.9%
2012	$265,825	$ 775	7.1%
3-Year Average	$222,111	$ 678	6.2%
5-Year Average	$205,029	$ 669	6.2%

[1]Majority of capital purchases is for machinery and equipment, which provides an approximate rate of reinvestment.

Figure 10 shows a Cash Flow Statement on a per cow basis for the average Northeast dairy farmer. It shows all sources of cash inflows for the business and how it was used, including what was available to cover capital purchases.

Figure 10

Sources and Use Statement

	2008	2009	2010	2011	2012
Sources:			*Dollars per Cow*		
Net Farm Income[1]	$ 765	$ 113	$ 507	$ 916	$ 613
Net Nonfarm Income	42	40	41	41	44
Sale of Capital	30	35	50	50	58
Savings Withdrawn	15	30	22	18	42
Money Borrowed	586	780	411	329	589
TOTAL SOURCES	$ 1,438	$ 998	$ 1,031	$ 1,354	$ 1,346
Uses:					
Family Living	$ 194	$ 166	$ 153	$ 160	$ 150
Capital Purchases	867	444	480	778	775
Debt Principal Payments	377	388	398	416	421
TOTAL USES	$ 1,438	$ 998	$ 1,031	$ 1,354	$ 1,346
Percent Capital Purchases Financed[2]	69%	176%	86%	42%	76%

[1]Cash basis – No accrual adjustment to expenses
[2]Money borrowed / capital purchases

Total sources were down slightly in 2012 to $1,346 per cow. Net cash farm income declined significantly from 2011, down nearly 34 percent to $613 per cow. The shortfall was largely made up by increased borrowing, up 79 percent in the same period. As previously discussed, capital purchases were up as were debt principal payments on a per-farm basis. Given 2012's modest net margin, the proportion of funds borrowed for capital purchases increased to 76 percent in 2012.

Balance Sheets Weaken

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 is liquidated.

The average *DFS* dairy farmer's net worth in 2012 declined by $367 to $7,811 per cow from $8,178 in 2011. Percent net worth held at 72 percent (Figure 11). Solvency remains solid for the average *DFS* farm, meaning that the average *DFS* participant has more than enough farm assets to liquidate, if needed, in order to satisfy all farm debts, selling fees and the resulting income tax liability.

Figure 11
Change in Financial Position

	Change in NW per Cow	Percent Net Worth[1]	Current Ratio[2]	Quick Ratio[3]	Asset Turnover[4]
2008	$ 366	72%	2.5	1.0	0.49
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

[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, then declined slightly to $2,300 in 2012 (Table A-3). Replacement heifer prices remained somewhat soft in the Northeast and across the country; however beef prices were up, which helped increase the overall value. 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. The current and quick ratios are two measures of liquidity. In 2012, the average dairy farm had a current ratio of 2.8, holding steady from 2.8 in 2011 and increased from 2.3 in 2010 (Figure 11).

Good cash flow in 2012 as well as sufficient inventories relative to current liabilities helped to improve this ratio. However, as inventory on a dairy farm is primarily feed for on-farm use and not truly 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 2012.

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 2012, as in 2011, asset turnover for the average dairy business was 0.52. This means $0.52 of gross revenue was generated for every $1 invested in assets, up from 2009 and 2010, but still below 2007.

Net Margin Differences Again Significant in 2012

There was a wide range of profits around the $415 per cow average in 2012, as there has been in most prior years. Some farms lost more than $1,000 per cow while others posted more than $2,000 in 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 2012 Profits

	Bottom 25%	All Farms	Top 25%
Number of Farms	126	504	126
Average Number of Cows	226	343	434
Milk Sold per Cow (lbs.)	22,001	23,552	24,658
Milk Sold per Worker (lbs.)	947,077	1,115,785	1,234,341
Net Earnings			
Per Farm	($71,868)	$142,345	$407,526
Per Cow	($318)	$415	$939
Per Cwt.	($1.45)	$1.76	$3.81
Return on Assets[1]	(1.6%)	4.7%	8.5%
Return on Equity[1]	(3.6%)	5.0%	10.5%

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

There was a $1,257 difference in net earnings per cow between the top and bottom groups. This is smaller than last year's difference, which stood at $1,579. Similarly on a per cwt. basis, the top farms posted over $5.00 more net earnings than the least profitable farms with a gain of $3.81 while the bottom group lost $1.45. Several management factors contribute to this disparity. Also shown in Figure 12 are two productivity measures. The Top 25% group sells 12 percent more milk per cow and 30 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 2012, the top profit group was able to control costs better with a decrease of 12 percent while the bottom group saw a

9 percent rise. The difference between the two narrowed to $2.44 per cwt. in 2012, which is the smallest gap of the past five years. Interesting to note, the bottom group also received a slightly higher milk price of $19.81 per cwt. compared to the top group's $19.70.

Figure 13

Cost of Producing Milk by Profit Groups

	2008	2009	2010	2011	2012
NCOP[1]			***Dollars per Cwt.***		
Bottom 25%	$21.35	$18.22	$18.91	$22.53	$20.03
Top 25%	15.90	13.12	14.16	15.91	17.40
Difference	$ 5.45	$ 5.10	$ 4.75	$ 6.62	$ 2.44

[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

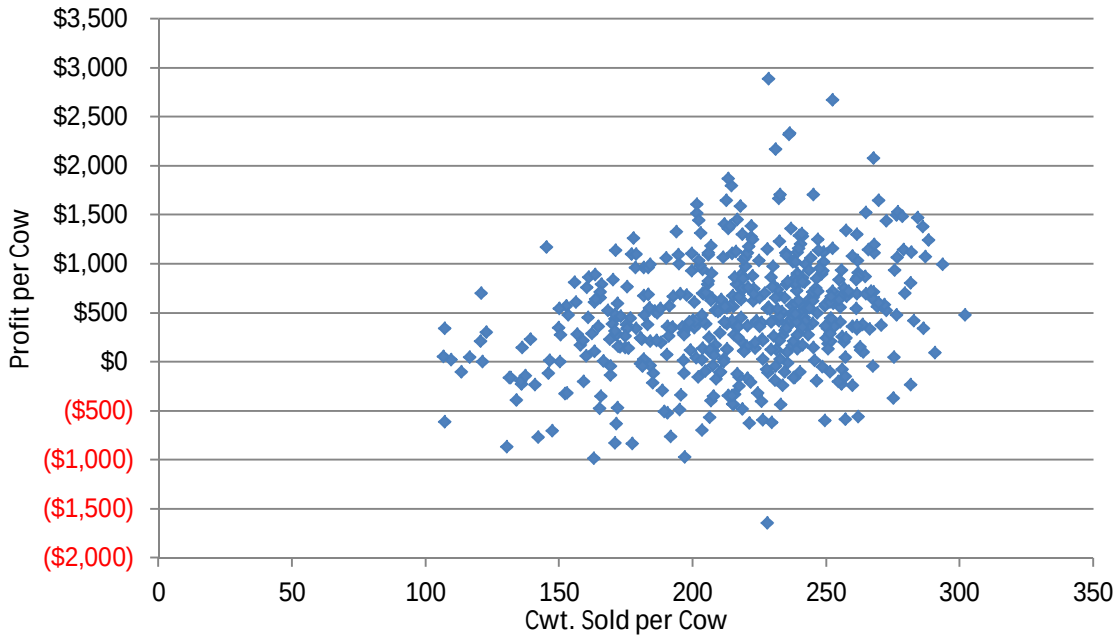
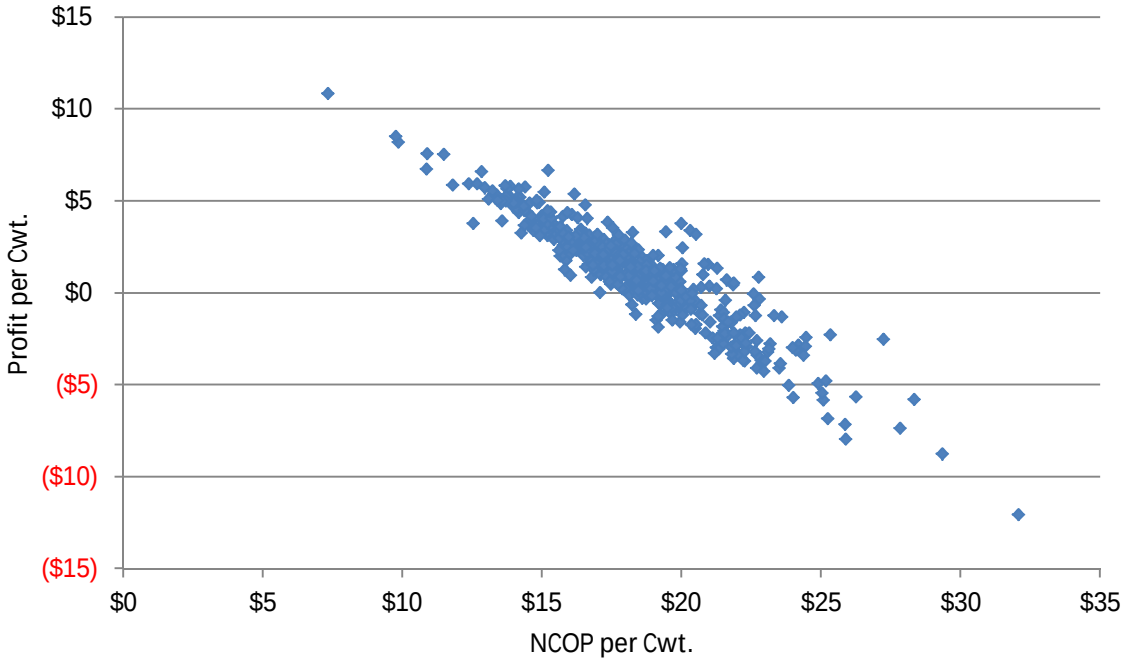


Figure 14B

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 which 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	25	44	17	26	14
Average Number of Cows	374	602	266	162	107
Milk Sold per Cow (lbs.)	26,122	24,022	21,143	21,415	20,047
Milk Sold per Worker (lbs.)	966,666	1,473,952	845,311	901,305	793,749
NCOP Per Cwt.	$17.68	$17.66	$18.34	$16.58	$17.75
Milk Price per Cwt.	$18.90	$19.31	$20.56	$18.81	$18.94
Net Earnings per Cow	$913	$820	$864	$1,276	$829
Net Earnings per Cwt.	$3.50	$3.41	$4.09	$5.96	$4.14
Return on Assets (%)	7.5%	9.1%	7.4%	9.8%	5.7%
Percent Net Worth (%)	75%	75%	73%	69%	75%

Of the 126 farms included in 2012's top profit quartile, 112 exhibited distinct management styles, while the remaining 14 farms displayed a more balanced approach. 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 26,122 pounds per cow is the highest among the five styles. High production allowed them to produce and sell 966,666 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 nearly 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.

Better Milk Price: This group received $20.56 per cwt. for their milk, $0.86 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 $16.58 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 most 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 satisficed 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 $508 net earnings per cow in 2012 (Figure 16). This group was also:

- The most productive on a milk-sold-per-cow and per-worker measure
- The lowest per-cow investor in productive assets and therefore had the highest asset turnover rate
- The lowest cost producer.

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

Figure 16

Farm Size and Profitability

	99 Cows or Less	100-299 Cows	300-699 Cows	700 Cows or More
Avg. No. of Cows	71	175	474	1,110
Milk Sold Per Cow (lbs.)	19,425	21,421	23,377	25,051
Milk Sold Per Worker (lbs.)	624,771	893,270	1,153,667	1,299,366
NCOP per Cwt.	$ 19.29	$ 18.87	$ 18.19	$ 17.65
Milk Price per Cwt.	$ 19.42	$ 19.67	$ 19.90	$ 19.69
Assets per Cow	$ 16,094	$ 12,838	$ 10,472	$ 9,731
Asset Turnover	0.29	0.41	0.53	0.60
Percent Net Worth	81%	77%	73%	66%
Net Earnings per Cow	$ 26	$ 270	$ 399	$ 508
Return on Assets %	1.0%	2.8%	4.5%	5.9%

However, being large is no guarantee of profitability. Of the 70 farms that comprised the 700^{+} cow group, only 25 percent were in the top profit group. There were 11 farms from this largest

size group (16 percent) achieving below average profitability (less than $128/cow). Again, this is indicative that success is all about superior management, not just scale.

Conclusion

Northeast dairy producers are consistently getting better at sharpening the skills needed to manage through dairy cycles. Strategies are as different as the 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 which 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 the challenges of the industry is now more critical than ever.

We hope this year's edition of the *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 a financially successful future.

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 **COMPARISONS BETWEEN HERD SIZES**
- Tables C-1 through C-6 are **COMPARISONS BETWEEN PROFIT GROUPS**
- Tables D-1 through D-3 are **COMPARISONS BETWEEN GEOGRAPHICAL 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). The 2008 to 2012 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.
- Other Receipts include MILC program payments.
- 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. The data 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.

TABLE A-1a. COMPARISON BETWEEN YEARS — EARNINGS WORKSHEET

GROSS MARGIN FORMAT

	2008	2009	2010	2011	2012
Number of Farms	540	544	524	532	504
Average Number of Cows	272	277	306	326	343
Receipts					
Milk Sales	$ 1,188,471	$ 849,215	$ 1,235,483	$ 1,631,221	$ 1,594,407
Cattle Sales	51,132	42,725	59,075	86,137	112,841
Crop Sales	72,590	23,782	61,818	65,395	98,865
Other	47,009	105,029	56,094	65,441	88,846
CASH RECEIPTS	$ 1,359,202	$ 1,020,751	$ 1,412,470	$ 1,848,194	$ 1,894,959
Accrual Adjustments					
+ Change in Inventory, Raised Livestock	$ 18,318	$ 25,055	$ 21,431	$ 12,927	$ 22,814
VALUE OF FARM PRODUCTION (c)	$ 1,377,520	$ 1,045,806	$ 1,433,901	$ 1,861,121	$ 1,917,773
COST OF GOODS SOLD					
Chemicals & Sprays	$ 14,165	$ 13,346	$ 13,733	$ 17,202	$ 18,266
Custom Hire	35,794	35,469	44,716	48,485	50,175
Purchased Feed	375,467	343,271	389,544	514,478	606,162
Fertilizer & Lime	44,428	33,246	35,966	48,540	63,550
Freight & Trucking (Marketing)	59,734	57,543	65,645	65,960	75,749
Gasoline, Fuel & Oil	67,866	41,983	54,964	81,067	86,746
Hired Labor	178,284	177,165	195,873	224,937	247,698
Seed & Plants	20,045	22,397	27,267	30,883	40,965
Supplies	71,733	64,877	76,957	82,408	96,904
Veterinary, Medicine & Breeding[1]	52,937	34,861	39,649	63,570	66,622
Other[1]	22,219	34,594	37,819	34,968	27,262
Cow Replacements	6,206	3,046	3,441	4,063	3,848
Total Cost of Goods Sold	$ 948,878	$ 861,798	$ 985,574	$ 1,216,561	$ 1,383,947
Gross Margin	$ 428,642	$ 184,008	$ 448,327	$ 644,560	$ 533,826
OVERHEAD					
Insurance	16,878	15,954	17,242	19,944	20,196
Interest	35,559	34,011	40,519	39,733	40,140
Rent	21,050	19,113	23,144	26,920	27,910
Repairs	78,788	61,789	75,888	103,965	104,147
Taxes, Property & Misc.	16,375	16,027	17,605	19,533	21,464
Utilities	29,908	27,839	32,751	35,328	35,014
Accrual Adjustments					
+ Depreciation	84,776	81,399	86,142	100,598	106,684
Total Overhead Expenses	$ 283,334	$ 256,132	$ 293,291	$ 346,021	$ 355,555
Net Cost of Production (d)	$ 1,232,212	$ 1,117,930	$ 1,278,865	$ 1,562,582	$ 1,739,502
NET FARM EARNINGS (c) - (d)	$ 145,308	$ -72,124	$ 155,036	$ 298,539	$ 178,271
+ Net Nonfarm Income	11,477	10,981	12,512	13,437	14,924
- Family Living & Income Taxes	52,505	45,681	46,587	52,147	51,371
NET EARNINGS	$ 104,280	$ -106,824	$ 120,961	$ 259,829	$ 141,824

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]Veterinary, Medicine & Breeding and Other figures revised for 2011.

TABLE A-1b. COMPARISON BETWEEN YEARS — EARNINGS WORKSHEET

INCOME & EXPENSE FORMAT

	2008	2009	2010	2011	2012
Number of Farms	540	544	524	532	504
Average Number of Cows	272	277	306	326	343
Receipts					
Milk Sales	$1,188,471	$ 849,215	$1,235,483	$1,631,221	$ 1,594,407
Cattle Sales	51,132	42,725	59,075	86,137	112,841
Crop Sales	72,590	23,782	61,818	65,395	98,865
Other	47,009	105,029	56,094	65,441	88,846
CASH RECEIPTS (a)	$1,359,202	$1,020,751	$1,412,470	$1,848,194	$ 1,894,959
Accrual Adjustments					
+ Change in Inventory, Raised Livestock	$ 18,318	$ 25,055	$ 21,431	$ 12,927	$ 22,814
VALUE OF FARM PRODUCTION (c)	$1,377,520	$1,045,806	$1,433,901	$1,861,121	$ 1,917,773
Expenses					
Chemicals & Sprays	$ 14,165	$ 13,346	$ 13,733	$ 17,202	$ 18,266
Custom Hire	35,794	35,469	44,716	48,485	50,175
Feed, Purchased	375,467	343,271	389,544	514,478	606,162
Fertilizer & Lime	44,428	33,246	35,966	48,540	63,550
Freight & Trucking (Marketing)	59,734	57,543	65,645	65,960	75,749
Gasoline, Fuel & Oil	67,866	41,983	54,964	81,067	86,746
Insurance	16,878	15,954	17,242	19,944	20,196
Interest	35,559	34,011	40,519	39,733	40,140
Labor, Hired	178,284	177,165	195,873	224,937	247,698
Rent	21,050	19,113	23,144	26,920	27,910
Repairs	78,788	61,789	75,888	103,965	104,147
Seed & Plants	20,045	22,397	27,267	30,883	40,965
Supplies	71,733	64,877	76,957	82,408	96,904
Taxes, Property & Misc.	16,375	16,027	17,605	19,533	21,464
Utilities	29,908	27,839	32,751	35,328	35,014
Veterinary, Medicine & Breeding[1]	52,937	34,861	39,649	63,570	66,622
Other[1]	22,219	34,594	37,819	34,968	27,262
Cow Replacements	6,206	3,046	3,441	4,063	3,848
ADJUSTED CASH OPERATING EXPENSES (b)	$1,147,436	$1,036,531	$1,192,723	$1,461,984	$ 1,632,818
Accrual Adjustments					
+ Depreciation	84,776	81,399	86,142	100,598	106,684
ADJUSTED FARM OPERATING EXPENSES (d)	$1,232,212	$1,117,930	$1,278,865	$1,562,582	$ 1,739,502
NET FARM INCOME (a) - (b)	$ 211,766	$ -15,780	$ 219,747	$ 386,210	$ 262,141
NET FARM EARNINGS (c) - (d)	$ 145,308	$ -72,124	$ 155,036	$ 298,539	$ 178,271
+ Net Nonfarm Income	11,477	10,981	12,512	13,437	14,924
- Family Living & Income Taxes	52,505	45,681	46,587	52,147	51,371
NET EARNINGS	$ 104,280	$ -106,824	$ 120,961	$ 259,829	$ 141,824

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]Veterinary, Medicine & Breeding and Other figures revised for 2011.

TABLE A-2. COMPARISON BETWEEN YEARS–EARNINGS WORKSHEET PER CWT.

	2008	2009	2010	2011	2012
Number of Farms	540	544	524	532	504
Average Number of Cows	272	277	306	326	343
Receipts	DOLLARS PER CWT. OF MILK				
Milk Sales	$ 19.59	$ 13.80	$ 17.70	$ 21.53	$ 20.01
Cattle Sales	0.84	0.69	0.85	1.14	1.42
Crop Sales	1.20	0.39	0.89	0.86	1.24
Other	0.78	1.70	0.79	0.86	1.11
CASH RECEIPTS (a)	$ 22.41	$ 16.58	$ 20.23	$ 24.39	$ 23.78
Accrual Adjustments					
+ Change in Inventory, Raised Livestock	$ 0.30	$ 0.41	$ 0.31	$ 0.17	$ 0.29
VALUE OF FARM PRODUCTION (c)	$ 22.71	$ 16.99	$ 20.54	$ 24.56	$ 24.07
Expenses					
Chemicals & Sprays	$ 0.23	$ 0.22	$ 0.20	$ 0.23	$ 0.23
Custom Hire	0.59	0.58	0.64	0.64	0.63
Feed	6.19	5.58	5.58	6.79	7.61
Fertilizer & Lime	0.73	0.54	0.52	0.64	0.80
Freight & Trucking (Marketing)	0.98	0.93	0.94	0.87	0.95
Gasoline, Fuel & Oil	1.12	0.68	0.79	1.07	1.09
Insurance	0.28	0.26	0.25	0.26	0.25
Interest	0.59	0.55	0.58	0.52	0.50
Labor	2.94	2.88	2.81	2.97	3.11
Rent	0.35	0.31	0.33	0.36	0.35
Repairs	1.30	1.00	1.09	1.37	1.31
Seed & Plants	0.33	0.36	0.39	0.41	0.51
Supplies	1.18	1.05	1.10	1.09	1.21
Taxes	0.27	0.26	0.25	0.26	0.27
Utilities	0.49	0.45	0.47	0.47	0.44
Veterinary, Medicine & Breeding	0.87	0.57	0.57	0.84	0.84
Other	0.38	0.57	0.53	0.46	0.34
Cow Replacements	0.10	0.05	0.05	0.05	0.05
ADJUSTED CASH OPERATING EXPENSES (b)	$ 18.92	$ 16.84	$ 17.09	$ 19.30	$ 20.49
Accrual Adjustments					
+ Depreciation	1.40	1.32	1.23	1.33	1.34
ADJUSTED FARM OPERATING EXPENSES (d)	$ 20.32	$ 18.16	$ 18.32	$ 20.63	$ 21.83
NET FARM INCOME (a) - (b)	$ 3.49	$ -0.26	$ 3.14	$ 5.09	$ 3.29
NET FARM EARNINGS (c) - (d)	$ 2.39	$ -1.17	$ 2.22	$ 3.93	$ 2.24
+ Net Nonfarm Income	0.19	0.18	0.18	0.18	0.18
- Family Living & Income Taxes	0.87	0.74	0.67	0.69	0.60
NET EARNINGS	$ 1.71	$ -1.73	$ 1.73	$ 3.42	$ 1.82

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

	2008	2009	2010	2011	2012
Number of Farms	540	544	524	532	504
Average Number of Cows	272	277	306	326	343
	DOLLARS PER FARM				
Assets					
Livestock	$ 658,025	$ 624,350	$ 687,340	$ 752,107	$ 788,849
Feed & Crops	245,383	232,653	280,216	328,481	394,507
Machinery & Equipment	532,044	521,389	560,602	662,191	699,551
Farmland & Buildings	1,139,883	1,210,781	1,345,946	1,422,083	1,696,332
All Other	292,317	267,604	317,016	532,822	472,771
TOTAL ASSETS	$ 2,867,652	$ 2,856,777	$ 3,191,120	$ 3,697,684	$ 4,052,010
TOTAL LIABILITIES	$ 796,979	$ 924,444	$ 1,021,138	$ 1,032,076	$ 1,156,617
TOTAL NET WORTH	$ 2,070,673	$ 1,932,333	$ 2,169,982	$ 2,665,608	$ 2,895,393
	DOLLARS PER COW				
Assets					
Livestock	$ 2,419	$ 2,254	$ 2,246	$ 2,307	$ 2,300
Feed & Crops	903	840	916	1,008	1,150
Machinery & Equipment	1,956	1,882	1,832	2,031	2,040
Farm-Land & Buildings	4,191	4,372	4,398	4,362	4,946
All Other	1,074	965	1,036	1,634	1,378
TOTAL ASSETS	$ 10,543	$ 10,313	$ 10,428	$ 11,342	$ 11,813
TOTAL LIABILITIES	$ 2,930	$ 3,337	$ 3,337	$ 3,164	$ 3,372
TOTAL NET WORTH	$ 7,613	$ 6,976	$ 7,091	$ 8,178	$ 8,441
	DOLLARS PER CWT. OF MILK				
Assets					
Livestock	$ 10.85	$ 10.14	$ 9.85	$ 9.93	$ 9.90
Feed & Crops	4.05	3.78	4.01	4.33	4.95
Machinery & Equipment	8.77	8.48	8.03	8.74	8.78
Farmland & Buildings	18.79	19.67	19.29	18.77	21.29
All Other	4.82	4.35	4.54	7.03	5.93
TOTAL ASSETS	$ 47.28	$ 46.42	$ 45.72	$ 48.80	$ 50.85
TOTAL LIABILITIES	$ 13.14	$ 15.02	$ 14.63	$ 13.62	$ 14.51
TOTAL NET WORTH	$ 34.14	$ 31.40	$ 31.09	$ 35.18	$ 36.34
PERCENT NET WORTH	72%	68%	68%	72%	72%

TABLE A-4. COMPARISON BETWEEN YEARS — EVALUATION FACTORS

	2008	2009	2010	2011	2012
Number of Farms	540	544	524	532	513
Average Number of Cows	272	277	306	326	339
Worker Equivalents	6.0	6.0	7.0	7.0	7.2
Cows Per Worker	45	46	44	47	47
Pounds of Milk Sold Per Worker	1,010,917	1,025,783	997,100	1,085,617	1,115,785
Pounds of Milk Sold	6,065,500	6,154,700	6,979,700	7,577,606	8,078,285
Pounds of Milk Sold Per Cow	22,300	22,219	22,809	23,244	23,552
Milk Price Per Cwt.	$ 19.59	$ 13.80	$ 17.70	$ 21.53	$ 19.74
Total Crop Acres	670	653	714	769	822
Crop Acres Per Cow	2.5	2.4	2.3	2.4	2.4
Feed Cost Per Cow	$ 1,380	$ 1,239	$ 1,273	$ 1,578	$ 1,767
Feed as a Percent of Milk Sales	32%	40%	32%	32%	38%
Feed & Crop Expense Per Cow[1]	$ 1,670	$ 1,488	$ 1,525	$ 1,875	$ 2,123
Feed & Crop Expense Per Cwt.	$ 7.49	$ 6.70	$ 6.69	$ 8.07	$ 9.01
Machinery Costs Per Cow[2]	$ 832	$ 667	$ 723	$ 869	$ 1,016
Machinery Costs Per Cwt.	$ 3.73	$ 3.00	$ 3.17	$ 3.74	$ 4.31
Labor & Family Living Per Cow	$ 833	$ 796	$ 788	$ 849	$ 863
Labor & Family Living Per Cwt.	$ 3.74	$ 3.58	$ 3.45	$ 3.65	$ 3.66
Assets Per Cow	$ 10,543	$ 10,313	$ 10,428	$ 11,342	$ 11,408
Debt Per Cow	$ 2,930	$ 3,337	$ 3,337	$ 3,164	$ 3,136
Net Worth Per Cow	$ 7,613	$ 6,976	$ 7,091	$ 8,178	$ 8,272
Percent Net Worth	72%	68%	68%	72%	72%

[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	2008	2009	2010	2011	2012
Current Assets	$ 421,962	$ 375,649	$ 451,846	$ 576,196	$ 586,106
Intermediate Assets	1,298,525	1,263,302	1,384,848	1,582,712	1,589,227
Fixed Assets	1,147,165	1,217,826	1,354,426	1,538,776	1,568,586
TOTAL ASSETS	$ 2,867,652	$ 2,856,777	$ 3,191,120	$ 3,697,684	$ 3,743,919
Change (+ or -) from Prior Years	$ 649,549	$ (10,875)	$ 334,343	$ 506,564	$ 46,235
Current Liabilities	$ 169,274	$ 190,121	$ 192,897	$ 209,387	$ 207,872
Intermediate Liabilities	340,970	414,998	471,119	426,589	439,020
Long-Term Liabilities	286,735	319,325	357,122	396,100	417,587
TOTAL LIABILITIES	$ 796,979	$ 924,444	$ 1,021,138	$ 1,032,076	$ 1,064,479
Change (+ or -) from Prior Years	$ 122,840	$ 127,465	$ 96,694	$ 10,938	$ 32,403
NET WORTH	$ 2,070,673	$ 1,932,333	$ 2,169,982	$ 2,665,608	$ 2,679,440
Change (+ or -) from Prior Years	$ 526,709	$ (138,340)	$ 237,649	$ 495,626	$ 13,832
% Net Worth	72%	68%	68%	72%	72%

I & E Farm (Cash Basis) Date:	12/31/2008	12/31/2009	12/31/2010	12/31/2011	12/31/2012
Sales - Primary Product	$ 1,188,471	$ 849,215	$ 1,235,483	$ 1,631,221	$ 1,594,407
Sales - Secondary Product	51,132	42,725	59,075	86,137	112,841
Other Farm Income	119,599	128,811	117,912	130,836	187,711
TOTAL FARM INCOME	$ 1,359,202	$ 1,020,751	$ 1,412,470	$ 1,848,194	$ 1,894,959
FARM EXPENSES	$ 1,147,436	$ 1,036,531	$ 1,192,723	$ 1,461,984	$ 1,632,818
NET FARM INCOME	$ 211,766	$ (15,780)	$ 219,747	$ 386,210	$ 262,141
ADD: Interest	35,559	34,011	40,519	39,733	40,140
TOTAL AVAILABLE - Farm	$ 247,325	$ 18,231	$ 260,266	$ 425,943	$ 302,281
ADD: Net Nonfarm Income	$ 11,477	$ 10,981	$ 12,512	$ 13,437	$ 14,924
Sale Capital Assets	8,151	9,594	15,407	16,436	19,316
TOTAL FUNDS AVAILABLE (a)	$ 266,953	$ 38,806	$ 288,185	$ 455,816	$ 336,521
Family Living + Income Taxes	$ 52,205	$ 45,681	$ 46,587	$ 52,147	$ 51,371
Debt Service Requirement	138,109	141,497	162,520	175,259	183,882
TOTAL FUNDS REQUIRED (b)	$ 190,314	$ 187,178	$ 209,107	$ 227,406	$ 235,253
EXCESS (DEFICIT) (a – b)	$ 76,639	$ (148,372)	$ 79,078	$ 228,410	$ 101,268

TABLE B-1. 2012 DATA BY HERD SIZE — EARNINGS WORKSHEET

	HERD SIZE				
	99 COWS OR LESS	100-299 COWS	300-699 COWS	700 COWS OR MORE	ALL FARMS
Number of Farms	133	190	111	70	504
Average Number of Cows	71	175	474	1,110	343
Receipts	DOLLARS PER COW				
Milk Sales	$ 3,771	$ 4,212	$ 4,652	$ 4,931	$ 4,648
Cattle Sales	301	300	319	351	329
Crop Sales	260	372	266	270	288
Other	283	367	244	220	259
CASH RECEIPTS (a)	$ 4,615	$ 5,251	$ 5,481	$ 5,772	$ 5,524
Accrual Adjustments					
+ Change in Inventory-Raised Livestock	$ (13)	$ 42	$ 61	$ 90	$ 67
VALUE OF FARM PRODUCTION (c)	$ 4,602	$ 5,293	$ 5,542	$ 5,862	$ 5,591
Expenses					
Chemicals & Sprays	$ 44	$ 59	$ 54	$ 51	$ 53
Custom	83	127	171	145	146
Feed	1,326	1,558	1,727	1,935	1,767
Fertilizer & Lime	148	194	186	185	185
Freight & Trucking (Marketing)	211	214	220	225	221
Gasoline, Fuel & Oil	234	257	255	252	253
Insurance	80	68	60	52	59
Interest	131	117	112	119	117
Labor	345	632	743	791	722
Rent	43	82	89	80	81
Repairs	296	301	287	317	304
Seed & Plants	97	109	116	129	119
Supplies	251	268	275	297	283
Taxes	106	75	62	52	63
Utilities	125	107	101	98	102
Veterinary, Medicine & Breeding	152	171	190	212	194
Other	87	76	75	75	79
Cow Replacements	16	15	13	8	11
ADJUSTED CASH OPERATING EXPENSES (b)	$ 3,775	$ 4,430	$ 4,736	$ 5,023	$ 4,759
Accrual Adjustments					
+ Depreciation	$ 446	$ 381	$ 300	$ 271	$ 311
ADJUSTED FARM OPERATING EXPENSES (d)	$ 4,221	$ 4,811	$ 5,036	$ 5,294	$ 5,070
NET FARM INCOME (a) - (b)	$ 840	$ 821	$ 745	$ 749	$ 765
NET FARM EARNINGS (c) - (d)	$ 381	$ 482	$ 506	$ 568	$ 521
+ Net Nonfarm Income	160	79	32	27	44
- Family Living & Income Taxes	515	291	139	87	150
NET EARNINGS	$ 26	$ 270	$ 399	$ 508	$ 415

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. 2012 DATA BY HERD SIZE — BALANCE SHEET SUMMARY

DECEMBER 31, 2012

	HERD SIZE				
	99 COWS OR LESS	100-299 COWS	300-699 COWS	700 COWS OR MORE	ALL FARMS
Number of Farms	133	190	111	70	504
Average Number of Cows	71	175	474	1,110	343
	ASSETS PER COW				
Cash & Accounts Receivable	$ 553	$ 504	$ 506	$ 466	$ 491
Feed & Crop Inventory	883	1,006	1,013	947	975
Supplies & Prepaid Expenses	100	134	198	195	179
Other Current Assets	88	81	74	45	63
TOTAL CURRENT ASSETS	$ 1,624	$ 1,725	$ 1,791	$ 1,653	$ 1,708
Dairy Livestock	$ 2,168	$ 2,186	$ 2,137	$ 2,313	$ 2,229
Machinery & Equipment	3,148	2,524	1,792	1,552	1,900
Other Intermediate Assets	1,129	686	503	336	504
TOTAL INTERMEDIATE ASSETS	$ 6,445	$ 5,396	$ 4,432	$ 4,201	$ 4,633
Farm Real Estate	$ 7,625	$ 5,305	$ 3,906	$ 3,539	$ 4,216
Other Fixed Assets	400	412	343	338	357
TOTAL FIXED ASSETS	$ 8,025	$ 5,717	$ 4,249	$ 3,877	$ 4,573
TOTAL ASSETS	$ 16,094	$ 12,838	$ 10,472	$ 9,731	$ 10,914
	LIABILITIES PER COW				
Accounts Payable	$ 71	$ 91	$ 71	$ 39	$ 60
Farm Credit Short-Term Loans	47	102	95	128	109
Other Current Liabilities	417	415	412	465	437
TOTAL CURRENT LIABILITIES	$ 535	$ 608	$ 578	$ 632	$ 606
Farm Credit Intermediate Term	$ 942	$ 893	$ 942	$ 1,175	$ 1,038
Other Intermediate Liabilities	364	295	254	196	242
TOTAL INTERMEDIATE LIABILITIES	$ 1,306	$ 1,188	$ 1,196	$ 1,371	$ 1,280
Farm Credit Long-Term Real Estate	$ 959	$ 931	$ 917	$ 1,181	$ 1,041
Other Long-Term Liabilities	287	283	146	137	176
TOTAL LONG-TERM LIABILITIES	$ 1,246	$ 1,214	$ 1,063	$ 1,318	$ 1,217
TOTAL LIABILITIES	$ 3,087	$ 3,010	$ 2,837	$ 3,321	$ 3,103
	NET WORTH PER COW				
OWNER'S NET WORTH	$ 13,007	$ 9,828	$ 7,635	$ 6,410	$ 7,811
TOTAL LIABILITIES & NET WORTH	$ 16,094	$ 12,838	$ 10,472	$ 9,731	$ 10,914
PERCENT NET WORTH	81%	77%	73%	66%	72%

TABLE B-3. 2012 DATA BY HERD SIZE–EVALUATION FACTORS

	HERD SIZE				
	99 COWS OR LESS	100-299 COWS	300-699 COWS	700 COWS OR MORE	ALL FARMS
Number of Farms	133	190	111	70	504
Average Number of Cows	71	175	474	1,110	343
Worker Equivalents	2.2	4.2	9.6	21.4	7.2
Cows Per Worker	32	42	49	52	47
Pounds of Milk Sold Per Worker	624,771	893,270	1,153,667	1,299,366	1,115,785
Pounds of Milk Sold	1,374,496	3,751,847	11,075,199	27,806,425	8,078,285
Pounds of Milk Sold Per Cow	19,425	21,421	23,377	25,051	23,552
Milk Price Per Cwt.	$19.42	$19.67	$19.90	$19.69	$19.74
Total Crop Acres	242	550	1,112	2,203	822
Crop Acres Per Cow	3.4	3.1	2.3	2.0	2.4
Crop Acres Per Worker	110	131	116	103	114
Feed Cost Per Cow	$ 1,326	$ 1,558	$ 1,727	$ 1,935	$ 1,767
Feed Cost Per Cwt.	$ 6.83	$ 7.27	$ 7.39	$ 7.72	$ 7.50
Feed as a Percent of Milk Sales	35%	37%	37%	39%	38%
Feed & Crop Expense Per Cow (1)	1,615	1,919	2,083	2,301	2,123
Feed & Crop Expense Per Cwt.	$ 8.32	$ 8.96	$ 8.91	$ 9.19	$ 9.01
Machinery Cost Per Cow (2)	$ 874	$ 896	$ 866	$ 839	$ 860
Machinery Costs Per Cwt.	$ 4.50	$ 4.18	$ 3.71	$ 3.35	$ 3.65
Labor & Family Living Per Cow	$ 1,190	$ 923	$ 882	$ 878	$ 863
Labor & Family Living Per Cwt.	$ 6.13	$ 4.31	$ 3.77	$ 3.50	$ 3.66
Assets Per Cow	$ 16,094	$ 13,798	$ 11,382	$ 10,616	$ 11,408
Debt Per Cow	$ 3,087	$ 3,213	$ 3,187	$ 3,582	$ 3,136
Net Worth Per Cow	$ 13,006	$ 10,584	$ 8,196	$ 7,035	$ 8,272
Percent Return on Assets (3)	1.9%	3.4%	4.8%	6.1%	5.1%
Percent Return on Equity (4)	1.4%	3.3%	5.3%	7.6%	5.6%

(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	126	126	126	126	504
Average Number of Cows	226	306	407	434	343
Receipts	DOLLARS PER COW				
Milk Sales	$ 4,376	$ 4,520	$ 4,672	$ 4,857	$ 4,648
Cattle Sales	343	317	329	329	329
Crop Sales	65	233	268	461	288
Other	244	261	249	274	259
CASH RECEIPTS (a)	$ 5,028	$ 5,331	$ 5,518	$ 5,921	$ 5,524
Accrual Adjustments					
+ Change in Inventory-Raised Livestock	$ 6	$ 52	$ 103	$ 74	$ 67
VALUE OF FARM PRODUCTION (c)	$ 5,034	$ 5,383	$ 5,621	$ 5,995	$ 5,591
Expenses					
Chemicals & Sprays	$ 57	$ 50	$ 49	$ 58	$ 53
Custom	146	148	156	135	146
Feed	1757	1822	1781	1717	1767
Fertilizer & Lime	209	161	199	177	185
Freight & Trucking (Marketing)	231	243	212	207	221
Gasoline, Fuel & Oil	272	255	251	243	253
Insurance	64	64	59	52	59
Interest	119	113	116	119	117
Labor	751	743	716	697	722
Rent	72	96	84	73	81
Repairs	325	285	310	299	304
Seed & Plants	119	124	112	123	119
Supplies	301	271	263	282	283
Taxes	68	68	60	59	63
Utilities	102	98	107	101	102
Veterinary & Medicine	188	197	152	196	194
Other	90	87	77	75	79
Cow Replacements	17	6	9	14	11
ADJUSTED CASH OPERATING EXPENSES (b)	$ 4,888	$ 4,831	$ 4,713	$ 4,627	$ 4,759
Accrual Adjustments					
+ Depreciation	$ 331	$ 304	$ 302	$ 313	$ 311
ADJUSTED FARM OPERATING EXPENSES (d)	$ 5,219	$ 5,135	$ 5,015	$ 4,940	$ 5,070
NET FARM INCOME (a) - (b)	$ 140	$ 500	$ 805	$ 1,294	$ 765
NET FARM EARNINGS (c) - (d)	$ (185)	$ 248	$ 606	$ 1,055	$ 521
+ Net Nonfarm Income	76	52	36	19	44
- Family Living & Income Taxes	209	149	137	135	150
NET EARNINGS	$ (318)	$ 151	$ 505	$ 939	$ 415

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. 2011 DATA BY PROFIT GROUPS — BALANCE SHEET SUMMARY

December 31, 2012

	PROFIT GROUP				
	BOTTOM 25%	THIRD 25%	SECOND 25%	TOP 25%	ALL FARMS
Number of Farms	126	126	126	126	504
Average Number of Cows	226	306	407	434	343
	ASSETS PER COW				
Cash & Accounts Receivable	$ 494	$ 525	$ 531	$ 673	$ 569
Feed & Crop Inventory	1,111	1,066	1,015	1,354	1,150
Supplies & Prepaid Expenses	80	92	165	230	155
Other Current Assets	77	59	59	87	71
TOTAL CURRENT ASSETS	$ 1,762	$ 1,742	$ 1,770	$ 2,344	$ 1,945
Dairy Livestock	$ 2,287	$ 2,212	$ 2,298	$ 2,365	$ 2,300
Machinery & Equipment	2,217	1,981	1,963	2,056	2,040
Other Intermediate Assets	603	551	500	567	550
TOTAL INTERMEDIATE ASSETS	$ 5,107	$ 4,744	$ 4,761	$ 4,988	$ 4,890
Farm Real Estate	$ 5,008	$ 4,494	$ 4,265	$ 4,697	$ 4,578
Other Fixed Assets	311	365	475	401	401
TOTAL FIXED ASSETS	$ 5,319	$ 4,859	$ 4,740	$ 5,098	$ 4,979
TOTAL ASSETS	$ 12,188	$ 11,345	$ 11,271	$ 12,430	$ 11,814
	LIABILITIES PER COW				
Accounts Payable	$ 258	$ 146	$ 57	$ 65	$ 112
Farm Credit Short-Term Loans	126	114	168	168	149
Other Current Liabilities	381	417	473	471	445
TOTAL CURRENT LIABILITIES	$ 765	$ 677	$ 698	$ 704	$ 706
Farm Credit Intermediate Term	$ 864	$ 1,115	$ 1,289	$ 1,224	$ 1,160
Other Intermediate Liabilities	280	253	222	212	236
TOTAL INTERMEDIATE LIABILITIES	$ 1,144	$ 1,368	$ 1,511	$ 1,436	$ 1,396
Farm Credit Long-Term Real Estate	$ 1,301	$ 1,066	$ 991	$ 1,170	$ 1,116
Other Long-Term Liabilities	147	127	160	168	153
TOTAL LONG-TERM LIABILITES	$ 1,448	$ 1,193	$ 1,151	$ 1,338	$ 1,269
TOTAL LIABILITIES	$ 3,357	$ 3,238	$ 3,360	$ 3,478	$ 3,371
	NET WORTH PER COW				
OWNER'S NET WORTH	$ 8,831	$ 8,107	$ 7,911	$ 8,952	$ 8,443
TOTAL LIABILITIES & NET WORTH	$ 12,188	$ 11,345	$ 11,271	$ 12,430	$ 11,814
PERCENT NET WORTH	72%	71%	70%	72%	71%

TABLE C-3. 2012 DATA BY PROFIT GROUPS–EVALUATION FACTORS

	PROFIT GROUP				
	BOTTOM 25%	THIRD 25%	SECOND 25%	TOP 25%	ALL FARMS
Number of Farms	126	126	126	126	504
Average Number of Cows	226	306	407	434	343
Worker Equivalents	5.25	6.62	8.43	8.67	7.24
Cows Per Worker	43	46	48	50	47
Pounds of Milk Sold Per Worker	947,077	1,061,155	1,140,499	1,234,341	1,115,785
Pounds of Milk Sold	4,972,155	7,024,846	9,614,408	10,701,733	8,078,285
Pounds of Milk Sold Per Cow	22,001	22,957	23,623	24,658	23,552
Milk Price Per Cwt.	$19.81	$19.69	$19.78	$19.70	$19.74
Total Crop Acres	553	765	939	1,032	822
Crop Acres Per Cow	2.4	2.5	2.3	2.4	2.4
Crop Acres Per Worker	105	116	111	119	114
Feed Cost Per Cow	$ 1,757	$ 1,822	$ 1,781	$ 1,717	$ 1,767
Feed Cost Per Cwt.	$ 7.99	$ 7.94	$ 7.54	$ 6.96	$ 7.50
Feed as a Percent of Milk Sales	40%	41%	40%	35%	38%
Feed & Crop Expense Per Cow (1)	2,142	2,157	2,141	2,075	2,123
Feed & Crop Expense Per Cwt.	$ 9.74	$ 9.40	$ 9.06	$ 8.42	$ 9.01
Machinery Cost Per Cow (2)	$ 910	$ 845	$ 866	$ 837	$ 860
Machinery Cost Per Cwt.	$ 4.14	$ 3.68	$ 3.67	$ 3.39	$ 3.65
Labor & Family Living Per Cow	$ 960	$ 892	$ 853	$ 832	$ 863
Labor & Family Living Per Cwt.	$ 4.36	$ 3.89	$ 3.61	$ 3.37	$ 3.66
Assets Per Cow	$ 12,188	$ 11,345	$ 11,271	$ 12,430	$ 11,408
Debt Per Cow	$ 3,357	$ 3,238	$ 3,360	$ 3,478	$ 3,136
Net Worth Per Cow	$ 8,831	$ 8,107	$ 7,911	$ 8,952	$ 8,272
Percent Return on Assets (3)	(-1.6%)	2.7%	6.1%	9.1%	5.1%
Percent Return on Equity (4)	(-3.5%)	2.4%	7.2%	11.2%	5.6%

(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. 2012 COST OF PRODUCING MILK BY PROFIT GROUPS

	Bottom 25%	All Farm Average	Top 25%
	DOLLARS PER CWT.		
Feed	$ 7.99	$ 7.61	$ 7.19
Labor	2.10	3.11	2.92
Interest	0.54	0.50	0.47
Trucking (Marketing)	1.05	0.95	0.89
Crop	1.78	1.54	1.45
Other	7.46	6.78	6.86
Adjusted Cash Operating Expenses	$ 20.91	$ 20.49	$ 19.78
+ Depreciation	$ 1.49	$ 1.34	$ 1.26
+ Family Living	0.95	0.64	0.55
Total Costs	$ 23.35	$ 22.47	$ 21.59
– Nonmilk Income[1]	3.33	4.24	4.00
Net Cost of Production[2]	$ 20.03	$ 18.23	$ 17.59

[1]Nonmilk income includes accrual basis cattle, crop, other income and non-farm income
[2]Before any return on equity

TABLE C-5. 2011 CASH MARGINS BY PROFIT GROUPS

	2008	2009	2010	2011	2012
Bottom Profit Group					
Actual Milk Price	$ 19.78	$ 13.70	$ 17.59	$ 21.61	$ 19.81
Break-Even Milk Price	20.76	18.24	18.30	21.59	20.48
CASH MARGIN	$ (0.98)	$ (4.54)	$ (0.71)	$ 0.02	$ (0.67)
Top Profit Group					
Actual Milk Price	$ 19.78	$ 13.80	$ 17.64	$ 21.24	$ 19.70
Break-Even Milk Price	16.29	15.98	15.12	16.21	16.10
CASH MARGIN	$ 3.49	$ (2.18)	$ 2.52	$ 5.03	$ 3.60

TABLE C-6. 2011 RESERVE DEBT CAPACITY BY PROFIT GROUPS

	Bottom 25%	All Farm Average	Top 25%
	DOLLARS PER COW		
Debt Capacity	$ 932	$ 5,245	$ 8,824
– Capital Debt	2,592	2,665	2,774
RESERVE DEBT CAPACITY	$ (-1,660)	$ 2,580	$ 6,050

TABLE D-1. 2011 DATA BY REGIONS — EARNINGS WORKSHEET

	REGIONS[1]			
	NEW YORK	NORTHERN NEW ENGLAND	SOUTHERN NEW ENGLAND	ALL FARMS
Number of Farms	373	107	24	504
Average Number of Cows	341	345	289	343
Receipts	DOLLARS PER COW			
Milk Sales	$ 4,660	$ 4,621	$ 4,517	$ 4,648
Cattle Sales	332	328	273	329
Crop Sales	301	265	289	288
Other	237	228	831	259
CASH RECEIPTS (a)	$ 5,530	$ 5,442	$ 5,910	$ 5,524
Accrual Adjustments				
+ Change in Inventory-Raised Livestock	$ 61	$ 79	$ 79	$ 67
VALUE OF FARM PRODUCTION (c)	$ 5,591	$ 5,521	$ 5,989	$ 5,591
Expenses				
Chemicals & Sprays	$ 59	$ 31	$ 60	$ 53
Custom	147	156	136	146
Feed	1686	2002	1915	1767
Fertilizer & Lime	184	187	236	185
Freight & Trucking (Marketing)	218	224	266	221
Gasoline, Fuel & Oil	253	249	287	253
Insurance	57	63	74	59
Interest	119	113	109	117
Labor	721	699	880	722
Rent	83	73	88	81
Repairs	306	284	375	304
Seed & Plants	127	99	91	119
Supplies	284	289	227	283
Taxes	69	43	60	63
Utilities	95	122	128	102
Veterinary & Medicine	200	174	198	194
Other	80	82	68	79
Cow Replacements	11	10	15	11
ADJUSTED CASH OPERATING EXPENSES[2] (b)	$ 4,699	$ 4,900	$ 5,213	$ 4,759
Accrual Adjustments				
Depreciation	325	273	311	311
ADJUSTED FARM OPERATING EXPENSES (d)	$ 5,024	$ 5,173	$ 5,524	$ 5,070
NET FARM INCOME (a) - (b)	$ 831	$ 542	$ 697	$ 765
NET FARM EARNINGS (c) - (d)	$ 567	$ 348	$ 465	$ 521
+ Net Nonfarm Income	39	63	25	44
- Family Living & Income Taxes	150	151	145	150
NET EARNINGS	$ 456	$ 260	$ 345	$ 415

[1]Northern New England is Vt., N. H. and Maine. Southern New England is Mass., Conn. and R. I.

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

TABLE D-2. 2012 DATA BY REGIONS — BALANCE SHEET SUMMARY

DECEMBER 31, 2012

	REGIONS' NEW YORK	NORTHERN NEW ENGLAND	SOUTHERN NEW ENGLAND	ALL FARMS
Number of Farms	373	107	24	504
Average Number of Cows	341	345	289	343
	ASSETS PER COW			
Cash & Accounts Receivable	$ 508	$ 503	$ 574	$ 491
Feed & Crop Inventory	1,039	1,042	1,088	975
Supplies & Prepaid Expenses	186	117	241	179
Other Current Assets	62	93	105	63
TOTAL CURRENT ASSETS	$ 1,795	$ 1,755	$ 2,008	$ 1,708
Dairy Livestock	$ 2,266	$ 2,242	$ 1,958	$ 2,229
Machinery & Equipment	1,976	1,765	2,057	1,900
Other Intermediate Assets	469	679	787	504
TOTAL INTERMEDIATE ASSETS	$ 4,711	$ 4,686	$ 4,802	$ 4,633
Farm Real Estate	$ 4,070	$ 4,858	$ 5,910	$ 4,216
Other Fixed Assets	343	435	506	357
TOTAL FIXED ASSETS	$ 4,413	$ 5,293	$ 6,416	$ 4,573
TOTAL ASSETS	$ 10,919	$ 11,734	$ 13,226	$ 10,914
	LIABILITIES PER COW			
Accounts Payable	$ 56	$ 135	$ 71	$ 60
Farm Credit Short-Term Loans	95	188	294	109
Other Current Liabilities	457	402	380	437
TOTAL CURRENT LIABILITIES	$ 608	$ 725	$ 745	$ 606
Farm Credit Intermediate Term	$ 1,114	$ 1,148	$ 560	$ 1,038
Other Intermediate Liabilities	225	263	246	242
TOTAL INTERMEDIATE LIABILITIES	$ 1,339	$ 1,411	$ 806	$ 1,280
Farm Credit Long-Term Real Estate	$ 1,059	$ 936	$ 1,259	$ 1,041
Other Long-Term Liabilities	136	302	51	176
TOTAL LONG-TERM LIABILITES	$ 1,195	$ 1,238	$ 1,310	$ 1,217
TOTAL LIABILITIES	$ 3,142	$ 3,374	$ 2,861	$ 3,103
	NET WORTH PER COW			
OWNER'S NET WORTH	$ 7,777	$ 8,360	$ 10,365	$ 7,811
TOTAL LIABILITIES & NET WORTH	$ 10,919	$ 11,734	$ 13,226	$ 10,914
PERCENT NET WORTH	71%	71%	78%	72%

[1]Northern New England is Vt., N. H. and Maine. Southern New England is Mass., Conn. and R. I.

TABLE D-3. 2012 DATA BY REGIONS — EVALUATION FACTORS

	REGIONS'			
	NEW YORK	NORTHERN NEW ENGLAND	SOUTHERN NEW ENGLAND	ALL FARMS
Number of Farms	373	107	24	504
Average Number of Cows	341	345	289	343
Worker Equivalents	7.37	6.67	6.70	7.24
Cows Per Worker	46	52	43	47
Pounds of Milk Sold Per Worker	1,100,758	1,184,045	973,076	1,115,785
Pounds of Milk Sold	8,112,589	7,897,579	6,519,609	8,078,285
Pounds of Milk Sold Per Cow	23,761	22,867	22,527	23,552
Milk Price Per Cwt.	$19.59	$20.19	$20.05	$19.74
Total Crop Acres	855	740	571	822
Crop Acres Per Cow	2.5	2.1	2.0	2.4
Crop Acres Per Worker	116	111	85	114
Feed Cost Per Cow	$ 1,686	$ 2,000	$ 1,918	$ 1,767
Feed Cost Per Cwt.	$ 7.10	$ 8.75	$ 8.51	$ 7.50
Feed as a Percent of Milk Sales	36%	43%	42%	38%
Feed & Crop Expense Per Cow[2]	2,056	2,317	2,305	2,123
Feed & Crop Expense Per Cwt.	$ 8.65	$ 10.13	$ 10.23	$ 9.01
Machinery Cost Per Cow[3]	$ 872	$ 822	$ 938	$ 1,016
Machinery Cost Per Cwt.	$ 3.67	$ 3.59	$ 4.16	$ 4.31
Labor & Family Living Per Cow	$ 870	$ 849	$ 1,027	$ 863
Labor & Family Living Per Cwt.	$ 3.66	$ 3.71	$ 4.56	$ 3.66
Assets Per Cow	$ 11,860	$ 10,966	$ 13,227	$ 11,408
Debt Per Cow	$ 3,405	$ 3,029	$ 2,860	$ 3,136
Net Worth Per Cow	$ 8,455	$ 7,937	$ 10,367	$ 8,272
Percent Return on Assets[4]	4.8%	3.4%	3.4%	4.7%
Percent Return on Equity[5]	5.4%	3.3%	3.3%	5.0%

[1]Northern New England is Vt., N. H., and Maine. Southern New England is Mass., Conn. and R. I.

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

[3]Machinery Cost = Machinery Repairs + Machine 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:

Cash Receipts – 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:

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

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) which a farm can service from cash flow, reserve debt capacity represents a farm's buffer against financial adversity. It is equal to:

Debt Capacity – Capital Debt

Overhead Costs

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

2012 Northeast Dairy Farm Summary

This report is available:

• At local Farm Credit offices

• By ordering online
(see inside front cover for web addresses)

• Or by calling Trudy Rouleau at 800.562.2235

Price: $50 for a single copy

Bulk rates are available