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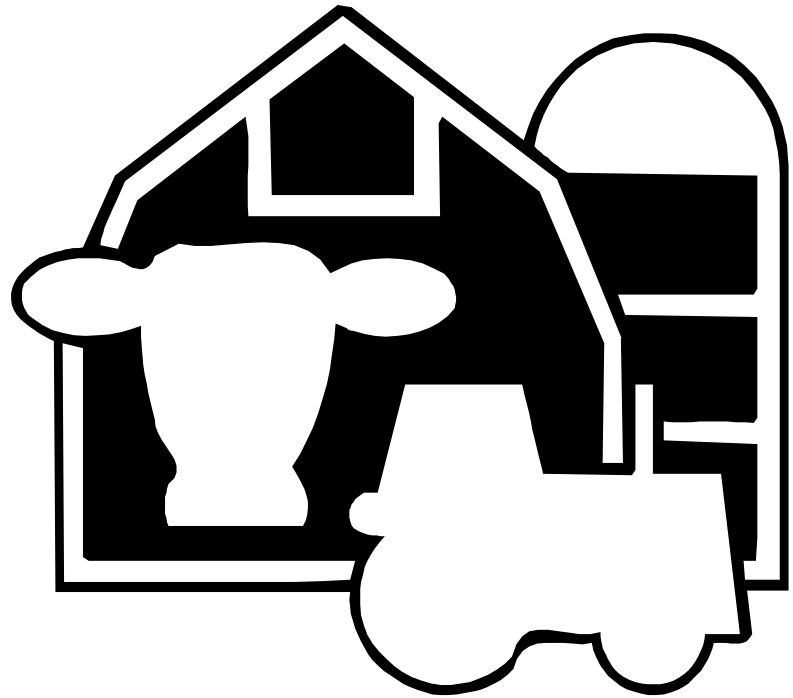
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OCTOBER 2000

R.B. 2000-03

DAIRY FARM MANAGEMENT

BUSINESS SUMMARY NEW YORK STATE 1999



**Wayne A. Knoblauch
Linda D. Putnam
Jason Karszes**

**Department of Agricultural, Resource, and Managerial Economics
Cornell University Agricultural Experiment Station
College of Agriculture and Life Sciences
Cornell University, Ithaca, New York 14853-7801**

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Publication Price Per Copy: \$12.00

For additional copies, contact:

Faye Butts
Department of Agricultural, Resource, and
Managerial Economics
Agricultural Finance and Management Group
358 Warren Hall
Cornell University
Ithaca, New York 14853-7801

E-mail: fsb1@cornell.edu
Fax: 607-255-1589
Phone: 607-254-7412

ABSTRACT

Business and financial records for 1999 from 314 New York dairy farm businesses are summarized and analyzed. This analysis demonstrates the use of cash accounting with accrual adjustments to measure farm profitability, cash flow, financial performance, and costs of producing milk. Traditional methods of analyzing dairy farm businesses are combined with improved evaluation techniques to show the relationship between good management performance and financial success.

The farms in the project averaged 224 cows per farm and 21,439 pounds of milk sold per cow, which represent above average size and management level for New York dairy farms. Net farm income excluding appreciation, which is the return to the operator's labor, management, capital, and other unpaid family labor, averaged \$122,210 per farm. The rate of return including appreciation to all capital invested in the farm business averaged 9.7 percent.

Differences in profitability between farms continue to widen. The top 10 percent of farms average net farm income excluding appreciation was \$578,366, while the lowest 10 percent was a negative \$10,114. Rates of return on equity with appreciation ranged from 36 percent to negative 31 percent from the highest 10 percent to the lowest 10 percent of farms.

Farms adopting bovine somatotropin (bST) experienced greater increases in milk production, had larger herds and were more profitable than farms not adopting bST. Farms adopting rotational grazing generally produced less milk per cow than non-grazing farms, but had somewhat lower costs of production and higher profitability. However, one should not conclude that adoption of these technologies alone were responsible for differences in performance.

Large freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow, and the greatest returns to labor, management and capital. Farms milking three times a day (3X) were larger, produced more milk per cow and were more profitable than herds milking two times per day (2X). Operating cost per cwt. of milk was \$0.03/cwt. higher for 3X than 2X milking herds, while output per cow was 4,159 pounds higher.

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INTRODUCTION*

Dairy farm business summary (DFBS) projects are an integral part of Cornell Cooperative Extension's agricultural educational program in New York State. The Department of Agricultural, Resource, and Managerial Economics of the College of Agriculture and Life Sciences at Cornell University, and County Extension staff, cooperate in sponsoring DFBS projects. In 1999, nearly 400 dairy farms participated. Business records submitted by dairy farmers from 46 counties provide the basis for continuing Extension programs, data for applied studies, and for use in the classroom. Regardless of the use of the data, confidentiality of individual farm data is maintained.

Cornell Cooperative Extension educators enroll the cooperators and collect the records. Each cooperator receives a detailed summary and analysis of his or her business. All educators are using a microcomputer in their offices and/or on the farm to process and return the individual farm business reports for immediate use. Regional reports are prepared by Cornell faculty and used by DFBS cooperators and other farmers to compare their farm performance with regional averages. The DFBS program helps farmers improve accounting and financial analysis techniques, develop managerial skills and solve business and financial management problems.

Individual farm records from the 6 regions and 46 counties of the State have been combined and the total data set analyzed to determine the status and study the effects of changes in price, technology, and management on dairy farm incomes (Figure 1, page 2). This study provides current dairy farm business information for use by farmers, Cooperative Extension staff, teachers, and others concerned with the New York dairy industry.

Farms Included

Data from 314 specialized dairy farms are included in the main body of this report. These farms do NOT represent the "average" for all dairy farms in the State. Participation was on a voluntary basis, therefore, not all areas or types of operations were proportionately represented (Figure 1, page 2). Participants represent nearly 4 percent of the milk cow operations in New York (see Appendix Table A3). The 314 specialized dairy farms represent a cross section of better than average commercial dairy farm owner/operators in the State. Dairy farm renters, dairy-cash crop farmers with crop sales exceeding 10 percent of milk sales, and part-time dairy operators have been excluded from the main body of this report. Dairy farm renters are summarized separately in the supplemental information section of the publication.

Features

Accrual adjustment procedures have been used to provide the most accurate accounting of farm receipts and farm expenses for measuring farm profits. An explanation of these procedures is found on page 9. Four measures of farm profits; net farm income, labor and management income, return on equity and all capital, and return to all labor and management are calculated on pages 11 through 14. The balance sheet is presented with the current portion of intermediate and long term debt identified as a current liability, on pages 14 and 15. The statement of owner equity, which shows the interrelationship between farm profitability, non-farm cash flows and net worth is presented on page 17. A detailed cash flow statement, including budgeting data and debt repayment analysis is presented on pages 18 through 20.

The whole farm method of calculating the cost of producing milk is detailed on pages 28 through 33. The operating cost, purchased inputs cost and total cost of producing 100 pounds of milk are developed and analyzed. Farm business charts for farms with conventional and freestall housing are presented on pages 61 through 65. Specific studies of the performance of dairy farms using bST, rotational grazing and three times (3X) a day milking are presented on pages 68, 71 and 74.

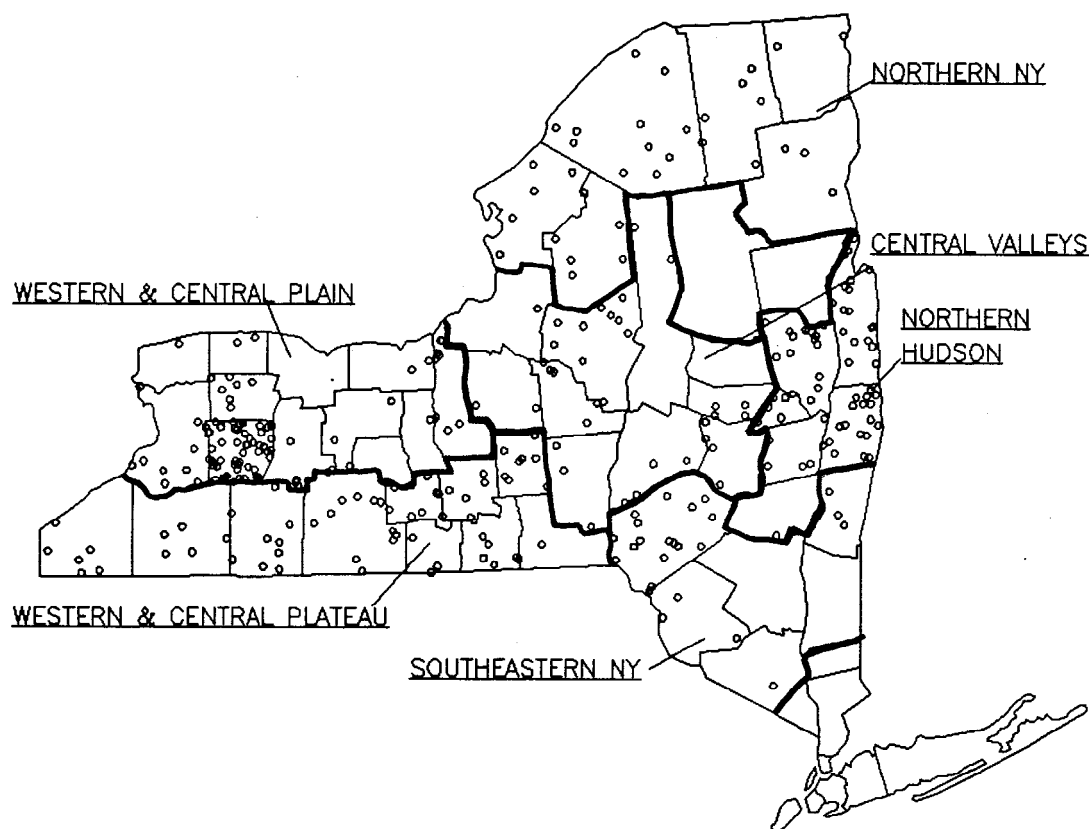
Acknowledgements

The authors appreciate the outstanding assistance provided by Faye Butts and Quinn Avery with wordprocessing, proofreading and distribution of the publication. The authors also wish to acknowledge extension field staff and cooperating farmers for their invaluable cooperation on this project. In addition, the authors appreciate the comments provided by Eddy LaDue and Loren Tauer.

* This report was written by Wayne A. Knoblauch, Professor; Linda D. Putnam, Extension Support Specialist, in the Department of Agricultural, Resource, and Managerial Economics at Cornell University, and Jason Karszes, Senior Extension Associate, Pro-Dairy.

Figure 1.

**LOCATION OF THE 314 NEW YORK DAIRY FARMS
IN THE 1999 DAIRY FARM BUSINESS SUMMARY**



1999 Regional Summary Publications

| <u>Region</u> | <u>Publications</u> | <u>Author(s)</u> |
|-----------------------------|---------------------|--|
| Western and Central Plain | E.B. 2000-03 | Wayne A. Knoblauch, Linda D. Putnam, Jason Karszes, Steve Richards, John Hanchar, Carry Oostveen, Bruce Dehm, George Allhusen & Vinton Smith. |
| Northern Hudson | E.B. 2000-05 | George J. Conneman, Linda D. Putnam, Cathy S. Wickswat, Sandra Buxton & Dayton Maxwell |
| Western and Central Plateau | E.B. 2000-06 | Wayne A. Knoblauch, Linda D. Putnam, Sheila Marshman, James W. Grace, Joan S. Petzen, Andrew N. Dufresne & Janet Allard |
| Southeastern New York | E.B. 2000-07 | Wayne A. Knoblauch, Linda D. Putnam, Michael Dennis, Stephen E. Hadcock, Larry R. Hulle, Mariane Kiraly, Colleen McKeon & Joseph J. Walsh |
| Northern New York | E.B. 2000-08 | Wayne A. Knoblauch, Linda D. Putnam, William Van Loo, Peggy Murray, Anita Deming, Chris Nobles & Patty Beyer |
| Central Valleys | E.B. 2000-09 | Eddy L. LaDue, Doug Bowne, Zaid Kurdieh, Carry Oostveen, A. Edward Staehr, Charles Z. Radick, Jackie Hilts, Karen Baase, Jason Karszes & Linda D. Putnam |

THIRTY YEARS OF NEW YORK STATE DAIRY FARM BUSINESS DATA

New York dairy farming has changed dramatically over the past 30 years (Table 1, page 4). Dairy cows per farm increased 273 percent between 1969 and 1999 and more than one-third of that increase occurred in the last 10 years. Milk output per cow increased nearly 70 percent and the largest increase occurred between 1989 and 1999. Labor efficiency is up 34 percent even though there was practically no change from 1969 to 1979. The operating cost of producing milk has increased more than 430 percent with the big jump occurring between 1969 and 1979.

There is a large increase in farm capital invested per farm, up 1,076 percent since 1969. Farm net worth excluding deferred taxes has increased 761 percent over the last 30 years. Net farm income per farm has increased 35 percent (adjusted for 1999 dollars) but return on capital has not improved since 1969. Labor and management income per operator is down 30 percent in the last 30 years (adjusted for 1999 dollars).

FOUR YEARS OF VARIABILITY

Recognition and evaluation of the progress that has occurred on DFBS farms can best be achieved by studying the same farms over a period of time. Table 2 presents average data from 179 farms that have been DFBS cooperators each year since 1996. Chart 1 shows the price received for milk in comparison to the operating cost of producing a hundredweight of milk for these farms. The high milk price and lower costs in 1998 and 1999 provided dairy farmers with excellent returns. This comes after 1997, a year when milk prices were soft and margins were less than half those in 1998. Good operating margins did exist in 1996 at about \$3.00 per hundredweight.

Net farm income without appreciation in 1999 was 62 percent above the 1996 average largely due to lower cost of production due to lower feed costs and less interest paid. However, two of the three previous years were good years for dairy farm profits with 1998 being an excellent year. Net worth declined by a small amount in 1997, a first in recent history.

The last 4 years have been a period requiring critical decision making and improved management skills on New York dairy farms. Risk management skills, including output price management, are becoming more important to farm business success.

Chart 1.

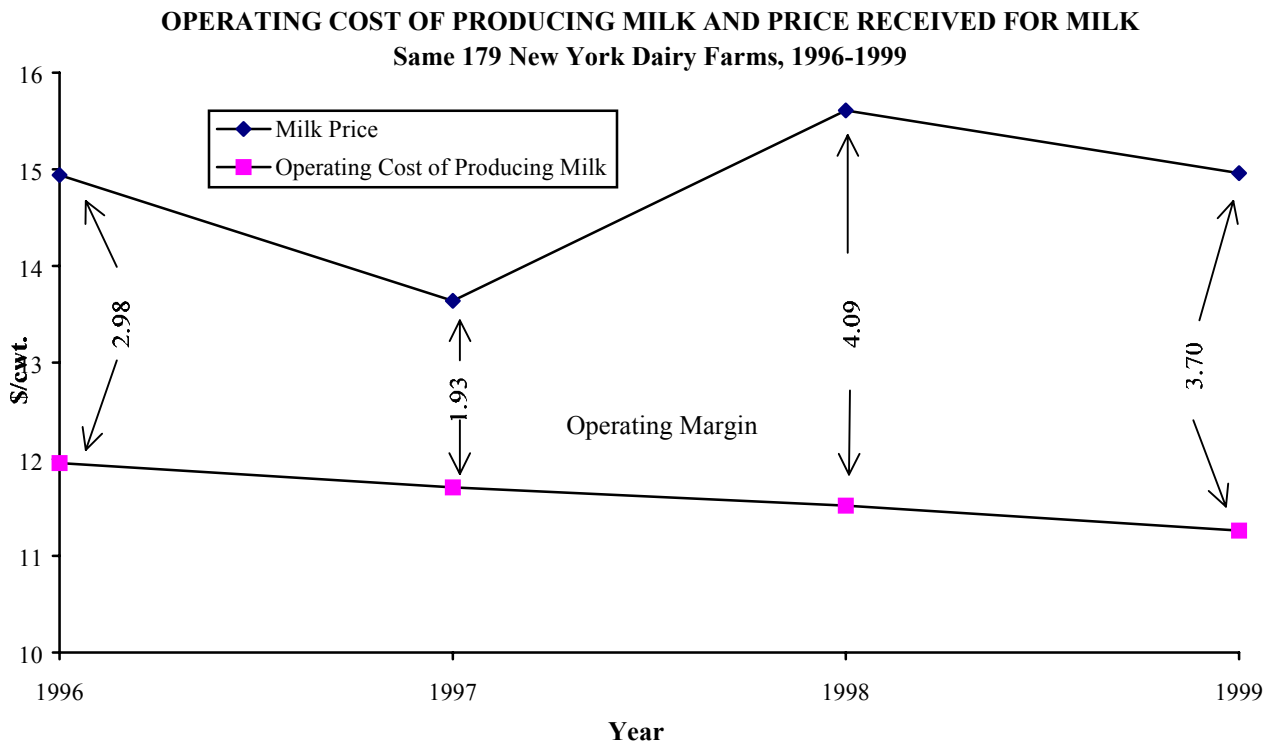


Table 1.

COMPARISON OF FARM BUSINESS SUMMARY DATA
New York Dairy Farms, 1969 - 1999

| Selected Factors | 1969 | 1979 | 1989 | 1999 |
|--|-------------|-----------|-----------|-------------|
| Number of farms | 511 | 610 | 409 | 314 |
| <u>Size of Business</u> | | | | |
| Average number of cows | 60 | 75 | 104 | 224 |
| Average number of heifers | 40 | 53 | 83 | 164 |
| Milk sold, cwt. | 7,617 | 10,698 | 17,975 | 47,932 |
| Worker equivalent | 2.1 | 2.7 | 3.30 | 5.71*** |
| Total tillable acres | 159* | 228* | 316 | 516 |
| <u>Rates of Production</u> | | | | |
| Milk sold per cow, lbs. | 12,700 | 14,300 | 17,259 | 21,439 |
| Hay DM per acre, tons | 2.8 | 2.7 | 2.6 | 2.9 |
| Corn silage per acre, tons | 16 | 14 | 13 | 16 |
| <u>Labor Efficiency</u> | | | | |
| Cows per worker | 29 | 28 | 32 | 39*** |
| Milk sold per worker, lbs. | 362,700 | 400,700 | 544,598 | 839,432*** |
| <u>Cost Control</u> | | | | |
| Grain & concentrate purchased as % of milk sales | 24% | 27% | 27% | 25% |
| Dairy feed & crop expense per cwt. milk | \$1.81 | \$4.24 | \$4.92 | \$4.75 |
| Operating cost of producing cwt. milk | \$2.08 | \$7.79 | \$10.46 | \$11.22 |
| Total cost of producing cwt. milk | \$4.55 | \$12.78 | \$14.74 | \$14.31 |
| Milk receipts per cwt. milk | \$5.80 | \$11.90 | \$14.53 | \$14.91 |
| <u>Capital Efficiency</u> | | | | |
| Total farm capital | \$121,221 | \$394,900 | \$666,328 | \$1,426,521 |
| Farm capital per cow | \$2,020 | \$5,100 | \$6,407 | \$6,368 |
| Machinery & equipment per cow | \$450 | \$910 | \$1,154 | \$1,163 |
| Real estate per cow | \$950 | \$2,440 | \$2,977 | \$2,562 |
| Livestock investment per cow | \$482 | \$1,417 | \$1,368 | \$1,525 |
| Asset turnover ratio | 0.49 | 0.43 | 0.45 | 0.59 |
| <u>Profitability</u> (in 1999 dollars)**** | | | | |
| Net farm income without appreciation | ----- | \$119,426 | \$66,606 | \$122,210 |
| Net farm income with appreciation | \$112,012 | \$142,957 | \$100,480 | \$151,175 |
| Labor & management income per operator/manager | \$61,376 | \$50,398 | \$24,189 | \$42,942 |
| Rate of return on: | | | | |
| Equity capital with appreciation | ----- | 16.8% | 9.8% | 12.0% |
| All capital with appreciation | ----- | 13.3% | 9.4% | 9.7% |
| All capital without appreciation | ----- | 10.8% | 5.6% | 7.7% |
| <u>Financial Summary, End Year</u> | | | | |
| Farm net worth | \$100,541** | \$261,398 | \$468,848 | \$865,626 |
| Change in net worth with appreciation | ----- | \$43,900 | \$45,260 | \$81,992 |
| Debt to asset ratio | 0.29** | 0.37 | 0.32 | 0.42 |
| Farm debt per cow | \$700** | \$1,930 | \$2,048 | \$2,702 |

*Acres of cropland harvested.

**Average of 159 dairy farm cooperators submitting financial information in 1970.

***Based on hours actually worked by owner/operator instead of standard 12 months per full-time owner/operator.

****Adjusted for inflation using Consumer Price Index – 1999 dollars.

Table 2.

COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 179 New York Dairy Farms, 1996 - 1999

| Selected Factors | 1996 | 1997 | 1998 | 1999 |
|--|------------|------------|------------|------------|
| Milk receipts per cwt. milk | \$ 14.94 | \$ 13.64 | \$ 15.61 | \$ 14.96 |
| <u>Size of Business</u> | | | | |
| Average number of cows | 195 | 207 | 220 | 230 |
| Average number of heifers | 144 | 153 | 165 | 174 |
| Milk sold, cwt. | 40,281 | 43,483 | 46,237 | 49,908 |
| Worker equivalent* | 5.06 | 5.31 | 5.49 | 5.76 |
| Total tillable acres | 463 | 484 | 501 | 518 |
| <u>Rates of Production</u> | | | | |
| Milk sold per cow, lbs. | 20,655 | 21,010 | 21,051 | 21,730 |
| Hay DM per acre, tons | 2.8 | 2.6 | 3.1 | 3.0 |
| Corn silage per acre, tons | 16 | 16 | 19 | 17 |
| <u>Labor Efficiency</u> | | | | |
| Cows per worker* | 39 | 39 | 40 | 40 |
| Milk sold per worker, lbs.* | 796,072 | 818,897 | 842,197 | 866,458 |
| <u>Cost Control</u> | | | | |
| Grain & concentrate purchased as % of milk sales | 31% | 33% | 26% | 25% |
| Dairy feed & crop expense per cwt. milk | \$ 4.75 | \$ 5.33 | \$ 5.02 | \$ 4.72 |
| Operating cost of producing cwt. milk | \$ 11.96 | \$ 11.71 | \$ 11.52 | \$ 11.26 |
| Total cost of producing cwt. milk | \$ 14.97 | \$ 14.56 | \$ 14.47 | \$ 14.25 |
| Hired labor cost per cwt. | \$ 2.01 | \$ 2.02 | \$ 2.15 | \$ 2.26 |
| Interest paid per cwt. | \$ 0.88 | \$ 0.90 | \$ 0.91 | \$ 0.78 |
| Labor & machinery costs per cow | \$ 1,037 | \$ 1,022 | \$ 1,070 | \$ 1,170 |
| <u>Capital Efficiency, Average for Year</u> | | | | |
| Farm capital per cow | \$ 6,197 | \$ 6,206 | \$ 6,263 | \$ 6,534 |
| Machinery & equipment per cow | \$ 1,074 | \$ 1,090 | \$ 1,120 | \$ 1,171 |
| Real estate per cow | \$ 2,681 | \$ 2,655 | \$ 2,607 | \$ 2,650 |
| Livestock investment per cow | \$ 1,463 | \$ 1,467 | \$ 1,480 | \$ 1,523 |
| Asset turnover ratio | 0.56 | 0.52 | 0.60 | 0.59 |
| <u>Profitability</u> | | | | |
| Net farm income without appreciation | \$ 79,996 | \$ 42,923 | \$ 139,636 | \$ 129,237 |
| Net farm income with appreciation | \$ 92,839 | \$ 52,295 | \$ 163,702 | \$ 160,010 |
| Labor & management income per operator/manager | \$ 23,014 | \$ 738 | \$ 58,406 | \$ 46,185 |
| Rate return on: | | | | |
| Equity capital with appreciation | 6.6% | 0.9% | 14.6% | 12.3% |
| All capital with appreciation | 6.9% | 3.6% | 11.5% | 10.0% |
| All capital without appreciation | 5.9% | 2.9% | 9.8% | 8.0% |
| <u>Financial Summary, End Year</u> | | | | |
| Farm net worth | \$ 750,908 | \$ 746,688 | \$ 855,741 | \$ 952,724 |
| Change in net worth with appreciation | \$ 50,531 | \$ -1,265 | \$ 111,091 | \$ 90,353 |
| Debt to asset ratio | 0.40 | 0.43 | 0.40 | 0.39 |
| Farm debt per cow | \$ 2,476 | \$ 2,638 | \$ 2,565 | \$ 2,586 |
| Debt coverage ratio | 1.44 | 0.91 | 1.78 | 1.66 |

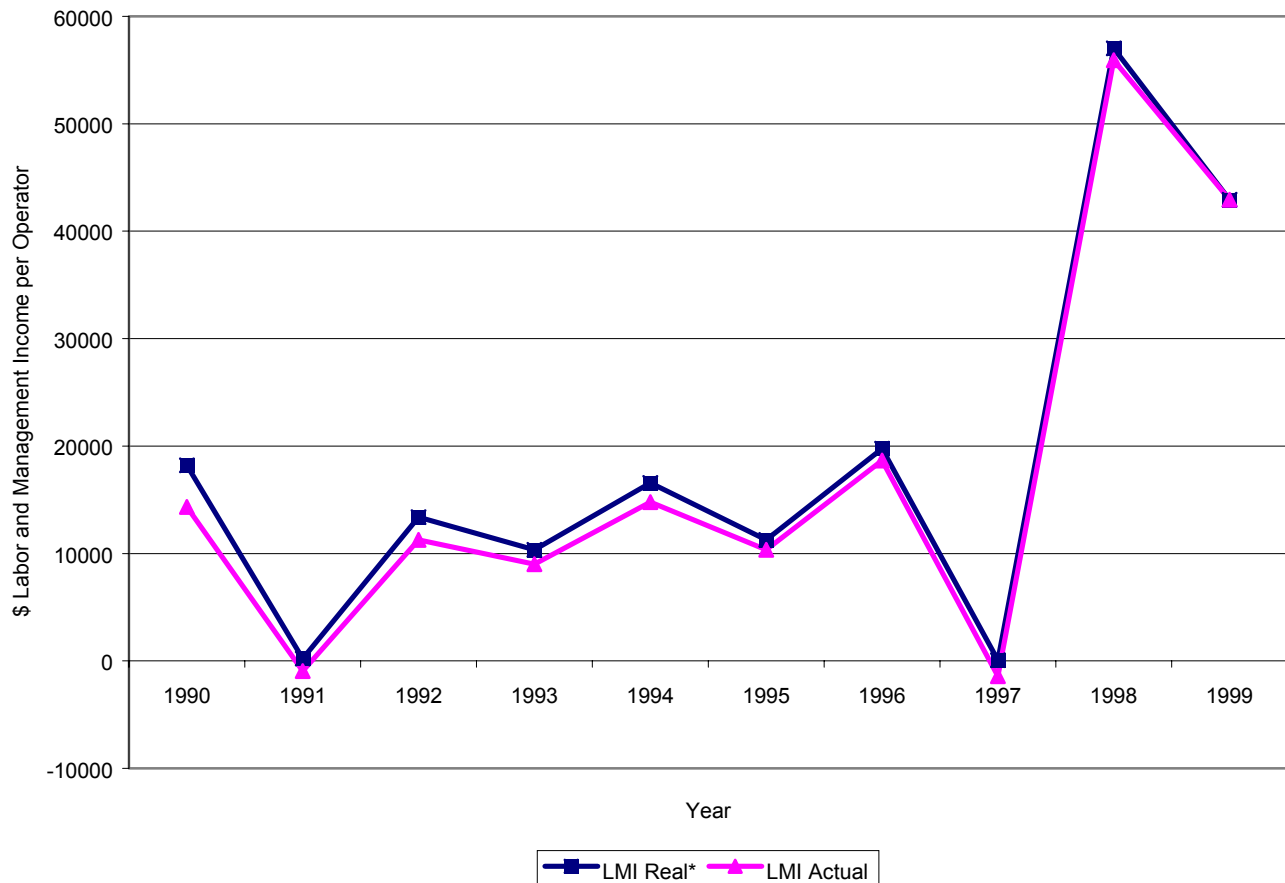
*Based on hours actually worked by owner/operator instead of standard 12 months per full-time owner/operator.

ADJUSTING PROFIT, PRICE AND COSTS FOR INFLATION

Labor and management income per operator in 1998 was at an all time high when measured in nominal (actual) value (Chart 2). Even when prior year's data are adjusted for inflation, labor and management incomes per operator did not exceed \$25,000 in comparison to over \$55,000 in 1998 and nearly \$43,000 in 1999. The reader is reminded that the average herd size of DFBS participants steadily increased from 107 cows to 224 cows over this period.

Chart 2.

LABOR AND MANAGEMENT INCOME PER OPERATOR Dairy Farm Business Summary Farms, 1990-1999



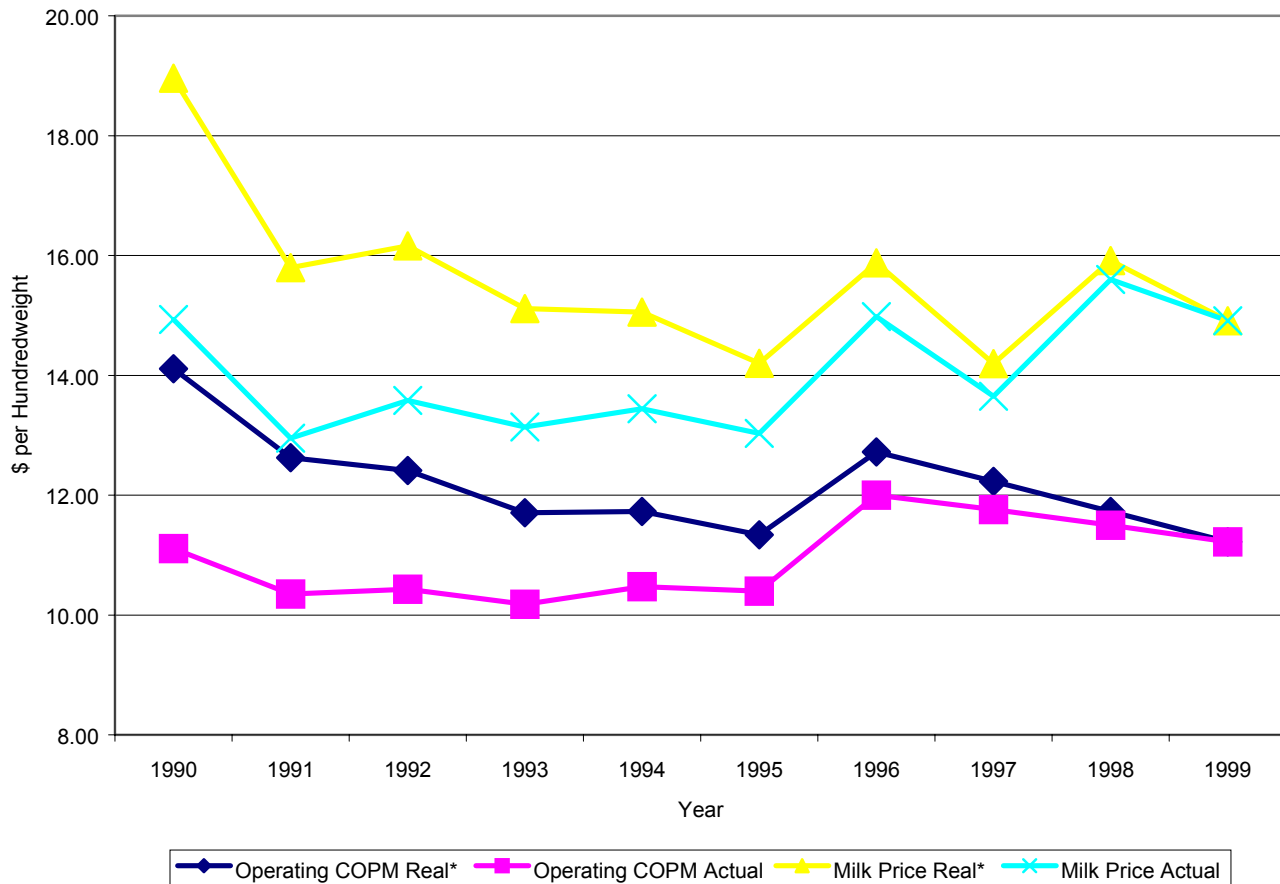
*Adjusted for inflation using the Consumer Price Index–1999 dollars.

The same cannot be said about milk prices. Milk prices in 1999 averaged \$14.91/cwt in actual dollars (Chart 3). In 1990, milk prices adjusted for inflation, in 1999 dollars, would have been about \$19.00/cwt. Milk prices, although high in 1999, were not as high when measured in real dollars.

Operating cost of producing milk (actual) had been very constant from 1990 through 1995, feed costs increased in 1996 and so did operating costs of producing milk. Operating costs have been somewhat lower in 1997 through 1999, but not reaching prior year levels. Real costs of producing milk have been on a downward trend over this 10 year period.

Chart 3

OPERATING COST OF PRODUCING MILK AND MILK PRICE
Dairy Farm Business Summary Farms, 1990-1999



*Adjusted for inflation using the Consumer Price Index—1999 dollars.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics and Resources Used

Recognition of important business characteristics and identification of the farm resources used is necessary for evaluating management performance. The combination of resources used and management practices employed is known as farm organization. Important farm business characteristics, the number of farms reporting these characteristics, and listing of the average labor, land, and dairy cattle resources used in 1999 are presented in the following table.

Table 3.

**BUSINESS CHARACTERISTICS AND RESOURCES USED
314 New York Dairy Farms, 1999**

| <u>Dairy Livestock (number)</u> | <u>Cows</u> | <u>Heifers</u> | <u>Dairy Records</u> | <u>Number</u> | <u>Percent</u> |
|---------------------------------|---------------|----------------|--------------------------------|----------------|----------------|
| Beginning of Year | 215 | 159 | Testing Service | 244 | 78 |
| End of Year | 231 | 166 | On Farm System | 15 | 5 |
| Average for Year | 224 | 164 | Other | 14 | 4 |
| | | | None | 41 | 13 |
| <u>Type of Business</u> | <u>Number</u> | <u>Percent</u> | <u>bST Usage</u> | <u>Number</u> | <u>Percent</u> |
| Sole Proprietorship | 167 | 53 | Used on <25% of herd | 27 | 9 |
| Partnership | 101 | 32 | Used on 25-75% of herd | 119 | 38 |
| Limited Liability Corp | 20 | 6 | Used on >75% of herd | 17 | 5 |
| Subchapter S Corp. | 21 | 7 | Stopped using in 1999 | 5 | 2 |
| Subchapter C Corp | 5 | 2 | Not used in 1999 | 146 | 46 |
| <u>Barn Type</u> | <u>Number</u> | <u>Percent</u> | <u>Labor Force</u> | <u>Average</u> | <u>Percent</u> |
| Stanchion | 105 | 33 | Operators | 21.5 | 31 |
| Freestall | 187 | 60 | Family Paid | 4.8 | 7 |
| Combination | 22 | 7 | Family Unpaid | 3.0 | 5 |
| <u>Milking System</u> | <u>Number</u> | <u>Percent</u> | Hired | 39.2 | 57 |
| Bucket & Carry | 2 | 1 | Total Months | 68.5 | 100 |
| Dumping Station | 4 | 1 | | | |
| Pipeline | 116 | 37 | | | |
| Herringbone Conventional | 106 | 34 | <u>Operators</u> (total = 553) | <u>Average</u> | |
| Herringbone Rapid | 16 | 5 | Age | 1.76 | |
| Parallel | 43 | 14 | Education | 44 | |
| Parabone | 4 | 1 | Estimated Value of | 13 years | |
| Rotary | 0 | 0 | Labor & Management | \$47,099 | |
| Other | 23 | 7 | | | |
| <u>Milking Frequency</u> | <u>Number</u> | <u>Percent</u> | <u>Land Used</u> | <u>Number</u> | <u>Average</u> |
| 2 times per day | 219 | 70 | Total acres: | | |
| 3 times per day | 74 | 24 | Owned | 314 | 438 |
| Other | 21 | 6 | Rented | 287 | 278 |
| | | | Tillable acres: | | |
| | | | Owned | 314 | 282 |
| <u>Business Records</u> | <u>Number</u> | <u>Percent</u> | Rented | 284 | 259 |
| Account Book | 77 | 25 | Total | 314 | 516 |
| Accounting Service | 57 | 18 | | | |
| On-Farm Computer | 167 | 53 | | | |
| Other | 13 | 4 | | | |

There were 553 full-time operator equivalents on the 314 dairy farms for an average of 1.76 operators per farm. The operators averaged 44 years of age and 13 years of formal education. Additional data on the labor force is in Table 41.

All 314 farm businesses included in the regular dairy summary own farm real estate. Dairy farm renters are summarized separately later in this publication. However, 284 of the dairy farm owners rented an average of 259 acres of tillable land in 1999. The 314 farms averaged 516 total tillable acres per farm of which 234 acres were rented. Tables 19 and 25 contain additional information on land use and the dairy herd.

Accounting Procedures

Accrual accounting adjustments are made to cash receipts and expenses to measure annual receipts, expenses, and farm profitability more accurately. These procedures express the true value and cost of production for the year, regardless of whether cash was received or expended. Cash expenses and cash receipts are used when evaluating the cash flow position of the business.

The accrual accounting procedures consider changes in accounts payable and receivable, prepaid expenses, and changes in inventory of not only such items as crops and livestock, but also the inventory of production items such as fertilizer, seed and fuel. In this manner, the total cost of production and the total value of production are obtained to provide an accurate representation of profitability in that year.

Accrual adjustments are complemented by accounting procedures used to separate changes in inventory of capital assets into changes caused by price and those caused by quality or quantity changes. Separating price changes (appreciation) from physical changes in the farm inventory are important in determining farm profitability. Appreciation of farm assets are included in the return to farm capital, but excluded from the return to labor and management.

Income Statement - Expenses

The accrual income statement on the following page begins with an accounting of all farm business expenses. Farm business expenditures are grouped into the following nine major categories:

1. Hired labor includes gross wages plus the farm share of social security, workers' compensation insurance, employee health insurance and other employee benefits paid by the farm employer.
2. Feed expenses are divided into purchased dairy grain and concentrate, purchased dairy roughage and all feed purchased for nondairy livestock to allow more thorough analysis of dairy herd feeding costs. The costs of growing grain roughage are not included in cash and accrual feed expenses.
3. Machinery costs represent all the operating costs of using power machinery on the farm. Ownership costs are excluded here but are included in the analysis of machinery costs.
4. Livestock expenses include the cost of supplies and services directly associated with the care and maintenance of the dairy herd, such as breeding, veterinary, bedding, milking supplies and custom boarding expenses plus milk marketing costs. The purchase of replacement cattle is considered a herd maintenance expense while expansion livestock is not.
5. Crop expenses include the costs of fertilizer, lime, seeds, spray and other crop supplies.
6. Real estate expenses are the direct costs associated with owning and maintaining farmland and buildings.
7. Other includes insurance, the farm share of utilities, interest paid on all farm indebtedness and miscellaneous costs.
8. Expansion livestock is a nonoperating cost included in total expenses.
9. Depreciation of machinery and buildings are nonoperating costs included in total expenses. Depreciation charges are based on those reported for income tax.

Cash and accrual farm expenses are summarized below. Total operating accrual expenses for the 314 farms averaged \$1,710 per day and 90 percent of total farm accrual expenses.

Table 4.

CASH AND ACCRUAL FARM EXPENSES
314 New York Dairy Farms, 1999

| Expense Item | Cash Paid | - Change in Inventory or Prepaid Expense | + Change in Accounts Payable | = Accrual Expenses | Percent |
|---------------------------------------|--------------|--|---------------------------------------|--------------------------|---------|
| <u>Hired Labor</u> | \$ 102,145 | \$235 << | \$ 426 | \$ 102,335 | 16 |
| <u>Feed</u> | | | | | |
| Dairy grain & concentrate | 194,019 | 14,144 | -731 | 179,144 | 29 |
| Dairy roughage | 11,311 | 455 | -164 | 10,692 | 2 |
| Nondairy livestock | 94 | 1 | 0 | 93 | <1 |
| <u>Machinery</u> | | | | | |
| Machinery hire, rent & lease | 18,980 | 156 << | 145 | 18,968 | 3 |
| Machinery repairs & farm vehicle exp. | 37,389 | 277 | 86 | 37,198 | 6 |
| Fuel, oil & grease | 11,902 | 156 | -71 | 11,676 | 2 |
| <u>Livestock</u> | | | | | |
| Replacement livestock | 11,754 | 0 << | -169 | 11,585 | 2 |
| Breeding | 8,522 | 477 | -26 | 8,019 | 1 |
| Veterinary & medicine | 23,316 | 762 | 26 | 22,580 | 4 |
| Milk marketing | 23,538 | 0 << | -9 | 23,530 | 4 |
| Bedding | 9,258 | 96 | 67 | 9,229 | 1 |
| Milking Supplies | 16,754 | 576 | -74 | 16,104 | 3 |
| Cattle lease & rent | 2,529 | 0 << | 0 | 2,529 | <1 |
| Custom boarding | 7,235 | 99 << | 21 | 7,157 | 1 |
| BST expense | 11,881 | 290 << | 53 | 11,644 | 2 |
| Other livestock expense | 7,671 | 89 | -60 | 7,522 | 1 |
| <u>Crops</u> | | | | | |
| Fertilizer & lime | 17,790 | 1,111 | -80 | 16,599 | 3 |
| Seeds & plants | 11,166 | 1,523 | 112 | 9,754 | 2 |
| Spray & other crop expense | 12,196 | 783 | 43 | 11,456 | 2 |
| <u>Real Estate</u> | | | | | |
| Land, building & fence repair | 12,933 | -26 | 53 | 13,012 | 2 |
| Taxes | 9,823 | -26 << | 3 | 9,852 | 2 |
| Rent & lease | 12,879 | 51 << | 13 | 12,841 | 2 |
| <u>Other</u> | | | | | |
| Insurance | 7,822 | 140 << | -8 | 7,675 | 1 |
| Utilities | 14,862 | -11 << | -75 | 14,798 | 2 |
| Interest paid | 39,919 | 78 << | -1 | 39,840 | 6 |
| Miscellaneous | 8,253 | 53 | 66 | 8,266 | 1 |
| Total Operating | \$ 645,943 | \$21,489 | \$ -354 | \$ 624,100 | 100 |
| Expansion livestock | \$ 12,408 | \$ 0 << | \$ -145 | \$ 12,263 | |
| Machinery depreciation | | | | \$ 31,585 | |
| Building depreciation | | | | \$ 22,913 | |
| TOTAL ACCRUAL EXPENSES | | | | \$ 690,861 | |

Cash paid is the actual amount of money paid out during the year and does not necessarily represent the cost of goods and services actually used.

Change in inventory represents feeds and supplies purchased this year but not used (positive change), and inputs purchased in a prior year and used this year (negative change). For example, purchased dairy grain and concentrate inventory increased \$14,144.

Prepaid expenses (noted by « in Table 4) are advance payments made for services and noninventory items. For example, advance payments for rent increased an average of \$51 per farm in 1999, and that increase is subtracted from cash rent to determine the correct 1999 accrual rental expense.

Changes in accounts payable reflect supplies/services used in this year's production but not paid for (positive change), and payments for production inputs used in a prior year (negative change).

Accrual expenses are cash expenses adjusted for changes in inventory, prepaid expenses and accounts payable. They are the total costs of inputs actually used in this year's business. Total change in inventory and prepaid expenses equals \$21,489, and total change in accounts payable equals \$-354.

Income Statement - Receipts

Cash and accrual farm receipts are presented in the following table. Total cash receipts averaged \$794,822 per farm. Total accrual receipts averaged \$813,071 per farm. Accrual receipts were greater than cash receipts due primarily to dairy herd growth and increases in crop inventory. Cow numbers increased an average of 10 head per farm and the homegrown feed inventory per farm increased \$12,168. Homegrown feed inventory per cow increased \$35 from beginning to end of year.

Table 5.

CASH AND ACCRUAL FARM RECEIPTS 314 New York Dairy Farms, 1999

| Receipt Item | Cash Receipts | + | Change in Inventory | + | Change in Accounts Receivable | = | Accrual Receipts | Percent |
|-----------------------------|---------------|---|---------------------|---|-------------------------------|---|------------------|---------|
| Milk sales | \$ 726,030 | | | | \$ -11,501 | | \$ 714,529 | 89 |
| Dairy cattle | 26,368 | | \$ 17,382 | | 206 | | 43,956 | 5 |
| Dairy calves | 5,795 | | | | 5 | | 5,799 | 1 |
| Other livestock | 2,045 | | 44 | | -4 | | 2,084 | <1 |
| Crops | 4,461 | | 12,168 | | 35 | | 16,664 | 2 |
| Government receipts | 18,694 | | 169* | | -46 | | 18,817 | 2 |
| Custom machine work | 1,488 | | | | -23 | | 1,465 | <1 |
| Gas tax refund | 242 | | | | -12 | | 230 | <1 |
| Other | 9,699 | | | | -155 | | 9,543 | 1 |
| - Nonfarm noncash capital** | | | (-) 18 | | | | (-) 18 | |
| Total | \$ 794,822 | | \$ 29,745 | | \$ -11,495 | | \$ 813,071 | 100 |

*Change in advanced government receipts.

**Gifts or inheritances of cattle or crops included in inventory.

Cash receipts include the gross value of milk checks received during the year plus all other payments received for the sale of farm products, services and government programs.

Accrual receipts represent the value of all farm commodities produced and services actually provided by the farmer during the year. Increases in livestock inventory caused by herd growth and/or quality, are included. Decreases in inventory caused by herd reduction are deducted. Changes in inventories of crops grown are included. Changes in advanced government receipts are the amount by which government payments received for participating in a future year's program have changed from 1998 to 1999. An increase requires a negative adjustment to cash receipts while a decrease is a positive adjustment. Changes in accounts receivable include the difference between the January milk check for December 1999 marketings and the previous January's check, and other delayed payments.

Nonfarm noncash capital are gifts and inheritances of cattle and crops received by the farm owner/operator, and included in inventory or used in the business during the year. They are deducted from growth in inventory and reduce accrual receipts because they came from outside the farm business. Gifts and inheritances of machinery and real estate are accounted for in Table 12.

Profitability Analysis

Farm owners/operators contribute labor, management, and capital to their businesses. The best combination of these resources produces optimum profits. Farm profits can be measured as the return to all family resources or as the return to one or more individual resources such as labor and management.

Net farm income is the total combined return to the farm operator(s) and other unpaid family members for their labor, management and equity capital. It is the farm family's net annual return from working, managing, financing and owning the farm business. This is not a measure of cash available from the year's business operation. Cash flow is evaluated later in this report.

Net farm income is computed with and without appreciation. Appreciation represents the change in farm inventory values caused by changes in prices during the year. Appreciation is a major factor contributing to changes in farm net worth and must be included in the profitability analysis. Net appreciation totaled \$28,965 per farm in 1999. On the average, farm real estate appreciated \$14,428 or less than 3 percent of beginning fair market value. Machinery appreciated approximately 2 percent while dairy cattle prices appreciated 2.6 percent in 1999.

Average data from 31 farms with the highest rates of return to all capital (without appreciation) are compared with the 314 farm average in Table 6 and in many of the following tables. Net farm income with appreciation averaged \$529,087 per farm on the top 10 percent farms, 250 percent greater than the 314 farm average.

Table 6.

NET FARM INCOME 314 New York Dairy Farms, 1999

| Item | Average 314 Farms | | Average Top 10% Farms* | |
|--|-------------------|---------|------------------------|---------|
| | Per Farm | Per Cow | Per Farm | Per Cow |
| Total accrual receipts | \$ 813,071 | | \$ 2,383,184 | |
| + Appreciation: Livestock | 8,515 | | 6,358 | |
| Machinery | 4,996 | | 15,677 | |
| Real Estate | 14,428 | | 26,902 | |
| Other Stock & Certificates | <u>1,026</u> | | <u>2,132</u> | |
| = Total including appreciation | \$ 842,036 | | \$ 2,434,253 | |
| - Total accrual expenses | <u>690,861</u> | | <u>1,905,166</u> | |
| = Net Farm Income (with appreciation) | \$ 151,175 | \$ 675 | \$ 529,087 | \$ 885 |
| Net Farm Income (without appreciation) | \$ 122,210 | \$ 546 | \$ 478,018 | \$ 799 |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

Labor and management income is the part of net farm income without appreciation returned to the operator(s) labor and management. Appreciation is not included as part of the return to labor and management. Labor and management income is determined by deducting the charge for unpaid family labor and the cost of using equity capital at a real interest rate of 5 percent, from net farm income excluding appreciation. The interest charge reflects the long-term average rate of return above inflation that a farmer might expect to earn in comparable risk investments. Operator(s') labor is not included in unpaid family labor.

Labor and management income per operator measures the return to one full-time operator's labor and management. A full-time operator provides 12 months of labor and management.

Table 7.

**LABOR AND MANAGEMENT INCOME
314 New York Dairy Farms, 1999**

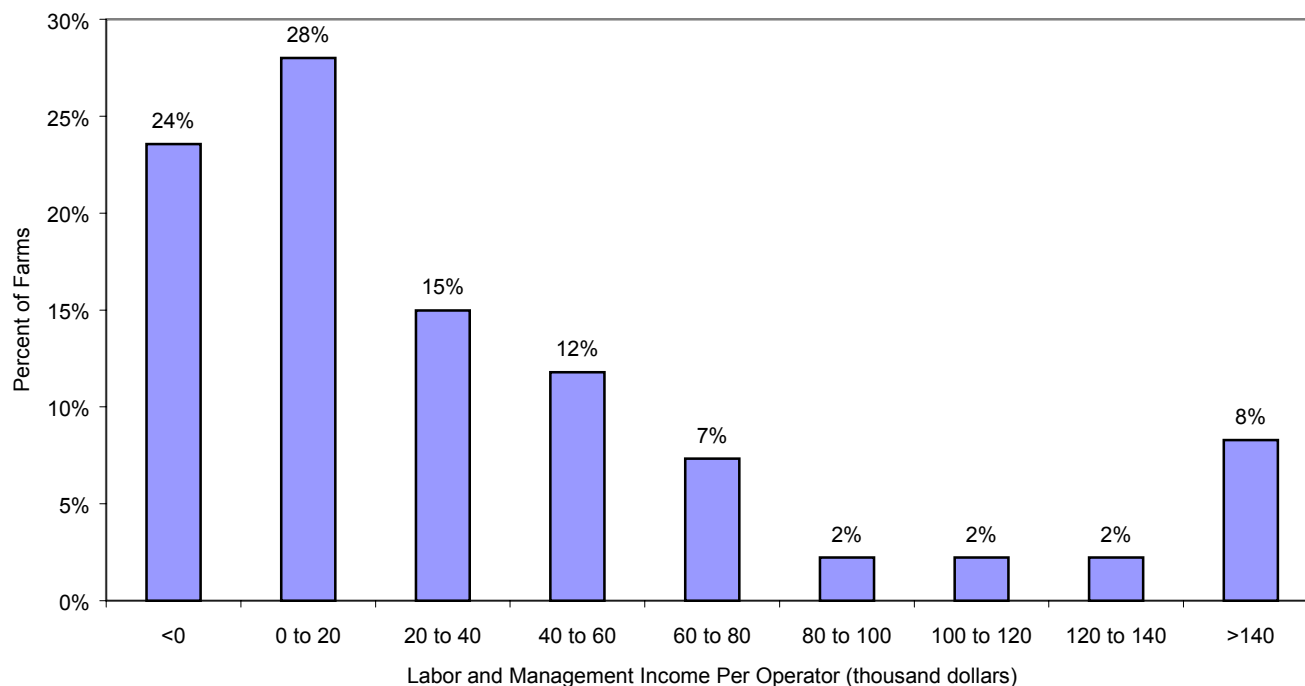
| Item | Average 314 Farms | Average Top 10% Farms* |
|---|----------------------|-----------------------------|
| Net farm income without appreciation | \$122,210 | \$ 478,018 |
| - Family labor unpaid @ \$1,800 per month | \$ 5,400 | \$ 3,420 |
| - Real interest @ 5% on \$824,630 equity capital for average & \$1,679,297 for the top 10% | <u>41,232</u> | <u>83,965</u> |
| = Labor & Management Income (1.76 operators) | \$ 75,578 | (1.68 operators) \$ 390,633 |
| Labor & Management Income per Operator | \$ 42,942 | \$ 232,520 |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

Labor and management income per operator averaged \$42,942 on these 314 dairy farms in 1999. The range in labor and management income per operator was from less than \$-89,000 to more than \$1.3 million. Returns to labor and management were negative on 24 percent of the farms. Labor and management income per operator ranged from \$0 to \$99,999 on 64 percent of the farms while 12 percent showed labor and management incomes of \$100,000 or more per operator.

Chart 4.

**DISTRIBUTION OF LABOR & MANAGEMENT INCOMES PER OPERATOR
314 New York Dairy Farms, 1999**



Return to equity capital measures the net return remaining for the farmer's equity or owned capital after a charge has been made for the owner/operator's labor and management and unpaid family labor. The earnings or amount of net farm income allocated to labor and management is the opportunity cost or value of operator(s) labor and management estimated by the cooperators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the average farm net worth or equity capital. Return to all capital is calculated by adding interest paid to the return on equity capital and then dividing by average farm assets to calculate the rate of return on average total capital. Net farm income from operations ratio is net farm income (without appreciation) divided by total accrual receipts.

Table 8.

RETURN TO CAPITAL
314 New York Dairy Farms, 1999

| Item | Average 314 Farms | Average Top 10% Farms* |
|---|----------------------|---------------------------|
| Net farm income with appreciation | \$ 151,175 | \$ 529,087 |
| - Family labor unpaid at \$1,800 per month | 5,400 | 3,420 |
| - Value of operators' labor & management | 47,099 | 64,632 |
| = Return to equity capital with appreciation | \$ 98,676 | \$ 461,035 |
| + Interest paid | 39,840 | 98,405 |
| = Return to all capital with appreciation | \$ 138,516 | \$ 559,440 |
| Return to equity capital without appreciation | \$ 69,711 | \$ 409,966 |
| Return to all capital without appreciation | \$ 109,551 | \$ 508,371 |
| Rate of return on average equity capital: | | |
| with appreciation | 12.0% | 27.5% |
| without appreciation | 8.5% | 24.4% |
| Rate of return on all capital: | | |
| with appreciation | 9.7% | 17.4% |
| without appreciation | 7.7% | 15.8% |
| Net farm income from operations ratio | 0.15 | 0.20 |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

Return to all labor and management is another measure of profitability of a business that can be calculated. It is calculated by adding the charge for unpaid family labor and the hired labor expense to labor and management income. Table 9 shows that farms with higher return to all capital with appreciation also had significantly higher return per hour to all labor and management.

Table 9.

RETURN TO ALL LABOR AND MANAGEMENT BY RETURN
TO ALL CAPITAL WITH APPRECIATION
314 New York Dairy Farms, 1999

| Item | Quartile by Return to All Capital With Appreciation | | | |
|---|---|------------|------------|------------|
| | Lowest 25% | 3rd 25% | 2nd 25% | Top 25% |
| Return to all capital with appreciation | \$ -5,495 | \$ 33,659 | \$ 96,723 | \$ 432,515 |
| Rate of return on all capital with appreciation | -1.0% | 4.7% | 8.1% | 13.2% |
| Total returns to all labor & management | \$ 13,818 | \$ 46,369 | \$ 120,780 | \$ 556,223 |
| Worker equivalent | 2.75 | 3.17 | 4.80 | 12.17 |
| Return per worker equivalent | \$ 5,025 | \$ 14,627 | \$ 25,163 | \$ 45,704 |
| Returns/hour (2,760 hours/worker/year) | \$ 1.82 | \$ 5.30 | \$ 9.12 | \$ 16.56 |

Farm and Family Financial Status

Evaluating the financial status of the farm business and the farm family is an important part of business analysis. The first step is to inventory all the assets, determine all liabilities and fill out the balance sheet. The second step is to analyze the complete balance sheet by evaluating the relationships between assets and liabilities and changes made during the year.

Table 10.

1999 FARM BUSINESS AND NONFARM BALANCE SHEET 314 New York Dairy Farms, 1999

| Farm Assets | | | Farm Liabilities & Net Worth | | |
|-----------------------------------|--------------|--------------|----------------------------------|--------------|--------------|
| | Jan. 1 | Dec. 31 | | Jan. 1 | Dec. 31 |
| <u>Current</u> | | | <u>Current</u> | | |
| Farm cash, checking & savings | \$ 7,438 | \$ 11,648 | Accounts payable | \$ 16,693 | \$ 16,194 |
| Accounts receivable | 59,483 | 47,988 | Operating debt | 36,124 | 51,223 |
| Prepaid expenses | 1,404 | 2,126 | Short term | 5,653 | 5,812 |
| Feed & supplies | 137,393 | 170,328 | Advanced gov't. receipt | 229 | 60 |
| Total Current | \$ 205,718 | \$ 232,090 | Current portion: | | |
| | | | Intermediate | 38,476 | 45,200 |
| | | | Long term | 15,237 | 19,760 |
| | | | Total Current | \$ 112,413 | \$ 138,249 |
| <u>Intermediate</u> | | | <u>Intermediate</u> | | |
| Dairy Cows: | | | Structured debt | | |
| owned | \$ 224,709 | \$ 240,347 | 1-10 years | \$ 202,993 | \$ 223,980 |
| leased | 4,188 | 3,548 | Financial lease | | |
| Heifers | 98,121 | 108,345 | (cattle & machinery) | 20,289 | 16,548 |
| Bulls & other livestock | 1,980 | 2,060 | Farm Credit stock | 5,417 | 5,637 |
| Mach. & equip. owned | 230,327 | 261,494 | Total Intermediate | \$ 228,699 | \$ 246,165 |
| Mach. & equip. leased | 16,101 | 13,000 | | | |
| Farm Credit stock | 5,417 | 5,637 | <u>Long Term</u> | | |
| Other stock & certificates | 23,871 | 28,147 | Structured debt | | |
| Total Intermediate | \$ 604,714 | \$ 662,578 | ≥ 10 years | \$ 235,766 | \$ 237,595 |
| <u>Long Term</u> | | | Financial lease | | |
| Land & buildings: | | | (structures) | 2,837 | 2,057 |
| owned | \$ 550,080 | \$ 592,967 | Total Long Term | \$ 238,603 | \$ 239,652 |
| leased | 2,837 | 2,057 | | | |
| Total Long Term | \$ 552,917 | \$ 595,024 | Total Farm Liabilities | \$ 579,715 | \$ 624,066 |
| Total Farm Assets | \$ 1,363,349 | \$ 1,489,692 | FARM NET WORTH | \$ 783,634 | \$ 865,626 |
| Nonfarm Assets* | | | Nonfarm Liabilities* & Net Worth | | |
| | Jan.1 | Dec. 31 | | Jan. 1 | Dec. 31 |
| Personal cash, checking & savings | \$ 3,894 | \$ 3,717 | Nonfarm Liabilities | \$ 5,925 | \$ 5,767 |
| Cash value life insurance | 12,313 | 12,860 | NONFARM NET WORTH | \$ 75,866 | \$ 83,779 |
| Nonfarm real estate | 28,277 | 28,887 | | | |
| Auto (personal share) | 4,547 | 4,934 | FARM & NONFARM** | Jan. 1 | Dec. 31 |
| Stocks & bonds | 15,754 | 20,971 | Total Assets | \$ 1,445,140 | \$ 1,579,238 |
| Household furnishings | 8,915 | 9,271 | Total Liabilities | 585,640 | 629,833 |
| All other | 8,091 | 8,906 | | | |
| Total Nonfarm | \$ 81,791 | \$ 89,546 | TOTAL FARM & NON-FARM NET WORTH | \$ 859,500 | \$ 949,405 |

*Average of 164 farms completing the nonfarm balance sheet.

**Sum of average farm values for 314 farms and nonfarm values for 164 farms.

Financial lease obligations are included in the balance sheet. The present values of all future payments are listed as liabilities since the farmer (lessee) is committed to make the payments. The present values are also listed as assets, representing the future value the item has to the business.

The farm balance sheet analysis includes financial and debt ratios and factors measuring levels of debt. Percent equity is calculated by dividing farm net worth by farm assets. Equity increases as the value of assets increase more than liabilities. The debt to asset ratios reflect strength in solvency and the potential capacity to borrow. The debt analysis ratios show how well the debt is structured and managed. Debt levels per unit of production include some old standards that are still useful if used with measures of cash flow and repayment ability.

Table 11.

FARM BALANCE SHEET ANALYSIS
314 New York Dairy Farms, 1999

| Item | Average 314 Farms | Average Top 10% Farms* |
|---|----------------------|------------------------------------|
| <u>Farm Financial Ratios:</u> | | |
| Percent equity | 58% | 53% |
| Debt/asset ratio: total | 0.42 | 0.47 |
| long term | 0.40 | 0.47 |
| intermediate & current | 0.43 | 0.46 |
| Leverage Ratio: | 0.72 | 0.87 |
| Current Ratio: | 1.68 | 1.67 |
| Working Capital: \$93,841 as % of Total Expenses | 14% | \$272,125 14% |
| <u>Farm Debt Analysis:</u> | | |
| Accounts payable as % of total debt | 3% | 2% |
| Long term liab. as % of total debt | 38% | 36% |
| Current & intermediate liabilities as % of total debt | 62% | 64% |
| Cost of term debt (weighted average) | 7.4% | 7.5% |
| <u>Farm Debt Levels:</u> | | |
| | <u>Per Cow</u> | <u>Per Tillable Acre Owned</u> |
| Total farm debt | \$2,702 | \$2,213 |
| Long term debt | 1,037 | 850 |
| Intermediate & long term | 2,103 | 1,723 |
| Intermediate & current debt | 1,664 | 1,363 |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

The farm inventory balance accounts for the changes in the values of major farm assets from the beginning to the end of the year.

Table 12.

FARM INVENTORY BALANCE
314 New York Dairy Farms, 1999

| Item | Real Estate | Machinery & Equipment | Livestock |
|------------------------------|---------------|-----------------------|--------------|
| Value beginning of year | \$ 550,080 | \$ 230,327 | \$ 324,811 |
| Purchases | \$ 74,286* | \$ 59,116 | |
| + nonfarm noncash transfer** | 1,041 | 435 | |
| - Lost capital | 21,970 | | |
| - Net sales | 1,984 | 1,796 | |
| - Depreciation | <u>22,913</u> | <u>31,585</u> | |
| = Net Investment | 28,459 | 26,171 | 17,426 |
| + Appreciation | <u>14,428</u> | <u>4,996</u> | <u>8,515</u> |
| Value end of year | \$ 592,967 | \$ 261,494 | \$ 350,752 |

*\$11,638 land and \$62,648 buildings and/or depreciable improvements.

**Gifts and inheritances of property transferred into the farm business from outside.

The Statement of Owner Equity has two purposes. It allows (1) verification that the accrual income statement and market value balance sheet are consistent (in accountants' terms they reconcile) and (2) identification of the causes of change in equity that occurred on the farm during the year. The Statement of Owner Equity allows the farmer to determine to what degree the changes in equity was caused by (1) earning from the business, and nonfarm income, in excess of withdrawals being retained in the business (called retained earnings), (2) outside capital being invested in the business or farm capital being removed from the business (called contributed/withdrawn capital) and (3) increases or decreases in the value (price) of assets owned by the business (called change in valuation equity).

Retained earnings are an excellent indicator of farm generated financial progress.

Table 13.

**STATEMENT OF OWNER EQUITY (RECONCILIATION)
314 New York Dairy Farms, 1999**

| Item | Average 314 Farms | Average Top 10% Farms** |
|---|----------------------|----------------------------|
| Beginning of year farm net worth | \$ 783,634 | \$ 1,503,835 |
| Net farm income without appreciation | \$ 122,210 | \$478,018 |
| + Nonfarm cash income | 8,127 | 7,778 |
| - Personal withdrawals & family expenditures excluding nonfarm borrowings | <u>59,885</u> | <u>134,457</u> |
| RETAINED EARNINGS | + \$ 70,452 | + \$ 351,339 |
| Nonfarm noncash transfers to farm | \$ 1,494 | \$ 6,452 |
| + Cash used in business from nonfarm capital | 3,620 | 8,454 |
| - Note or mortgage from farm real estate sold (nonfarm) | <u>3</u> | <u>0</u> |
| CONTRIBUTED/WITHDRAWN CAPITAL | + \$ 5,111 | + \$ 14,906 |
| Appreciation | \$ 28,965 | \$ 51,069 |
| - Lost capital | <u>21,970</u> | <u>65,726</u> |
| CHANGE IN VALUATION EQUITY | + \$ 6,995 | + \$ -14,657 |
| IMBALANCE/ERROR | - \$ <u>566</u> | - \$ <u>665</u> |
| End of year farm net worth* | \$ 865,626 | \$ 1,854,758 |
| <u>Change in Net Worth</u> | | |
| Without appreciation | \$53,027 | \$299,854 |
| With appreciation | \$81,992 | \$350,923 |

*May not add due to rounding.

**Average of 31 farms with highest rates of return to all capital (without appreciation).

Cash Flow Summary and Analysis

Completing an annual cash flow statement is an important step in understanding and organizing the sources and uses of funds for the business. Understanding last year's cash flow is the first step toward planning and managing cash flow for the current and future years.

The annual cash flow statement is structured to show net cash provided by operating activities, investing activities, financing activities and from reserves. All cash inflows and outflows including beginning and end balances are included. Therefore the sum of net cash provided from all four activities should be zero. Any imbalance is the error from incorrect accounting of cash inflows/outflows.

Table 14.

ANNUAL CASH FLOW STATEMENT 314 New York Dairy Farms, 1999

| Item | Average 314 Farms | |
|---|-------------------|------------|
| <u>Cash Flow from Operating Activities</u> | | |
| Cash farm receipts | \$ 794,822 | |
| - Cash farm expenses | <u>645,943</u> | |
| = Net cash farm income | | \$ 148,879 |
| Personal withdrawals & family expenses | | |
| including nonfarm debt payments | \$ 60,151 | |
| - Nonfarm income | <u>8,127</u> | |
| - Net cash withdrawals from the farm | | \$ 52,024 |
| = Net Provided by Operating Activities | | \$ 96,855 |
| <u>Cash Flow From Investing Activities</u> | | |
| Sale of assets: | | |
| machinery | \$ 1,796 | |
| + real estate | 1,981 | |
| + other stock & certificates | <u>1,914</u> | |
| = Total asset sales | | \$ 5,691 |
| Capital purchases: | | |
| expansion livestock | \$ 12,408 | |
| + machinery | 59,116 | |
| + real estate | 74,286 | |
| + other stock & certificates | <u>5,164</u> | |
| - Total invested in farm assets | | \$ 150,974 |
| + Net Provided by Investment Activities | | \$-145,283 |
| <u>Cash Flow From Financing Activities</u> | | |
| Money borrowed (intermediate & long term) | \$ 115,555 | |
| + Money borrowed (short term) | 3,915 | |
| + Increase in operating debt | 15,099 | |
| + Cash from nonfarm capital used in business | 3,620 | |
| + Money borrowed - nonfarm | <u>266</u> | |
| = Cash inflow from financing | | \$ 138,455 |
| Principal payments (intermediate & long term) | \$ 81,491 | |
| + Principal payments (short term) | 3,756 | |
| + Decrease in operating debt | <u>0</u> | |
| - Cash outflow for financing | | \$ 85,247 |
| = Net Provided by Financing Activities | | \$ 53,208 |
| <u>Cash Flow From Reserves</u> | | |
| Beginning farm cash, checking & savings | \$ 7,438 | |
| - Ending farm cash, checking & savings | <u>\$ 11,648</u> | |
| = Net Provided from Reserves | | \$ -4,210 |
| <u>Imbalance (error)</u> | | \$ 570 |

Table 15.

ANNUAL CASH FLOW BUDGETING DATA
314 New York Dairy Farms, 1999

| Item | Average 314 Farms | | | Average Top 10% Farms** | | |
|--|-------------------|---------|----------|-------------------------|----------|----------|
| | Total | Per Cow | Per Cwt. | Total | Per Cow | Per Cwt. |
| Average number of cows and cwt. milk | | 224 | 47,932 | | 598 | 140,276 |
| <u>Accrual Operating Receipts</u> | | | | | | |
| Milk | \$ 714,529 | \$3,190 | \$ 14.91 | \$ 2,097,843 | \$ 3,508 | \$ 14.96 |
| Dairy cattle | 43,956 | 196 | 0.92 | 147,253 | 246 | 1.05 |
| Dairy calves | 5,799 | 26 | 0.12 | 16,370 | 27 | 0.12 |
| Other livestock | 2,084 | 9 | 0.04 | 12,441 | 21 | 0.09 |
| Crops | 16,664 | 74 | 0.35 | 66,500 | 111 | 0.47 |
| Miscellaneous receipts | 30,037 | 134 | 0.63 | 42,776 | 72 | 0.30 |
| Total | \$ 813,071 | \$3,630 | \$ 16.96 | \$ 2,383,184 | \$ 3,985 | \$ 16.99 |
| <u>Accrual Operating Expenses</u> | | | | | | |
| Hired labor | \$ 102,335 | \$457 | \$ 2.14 | \$ 331,511 | \$ 554 | \$ 2.36 |
| Dairy grain & concentrate | 179,144 | 800 | 3.74 | 526,518 | 880 | 3.75 |
| Dairy roughage | 10,692 | 48 | 0.22 | 40,376 | 68 | 0.29 |
| Nondairy feed | 93 | 0 | 0.00 | 0 | 0 | 0.00 |
| Machinery hire, rent & lease | 18,968 | 85 | 0.40 | 52,120 | 87 | 0.37 |
| Machinery repairs & vehicle expense | 37,198 | 166 | 0.78 | 82,636 | 138 | 0.59 |
| Fuel, oil & grease | 11,676 | 52 | 0.24 | 25,484 | 43 | 0.18 |
| Replacement livestock | 11,585 | 52 | 0.24 | 16,963 | 28 | 0.12 |
| Breeding | 8,019 | 36 | 0.17 | 22,679 | 38 | 0.16 |
| Vet & medicine | 22,580 | 101 | 0.47 | 67,966 | 114 | 0.48 |
| Milk marketing | 23,530 | 105 | 0.49 | 55,331 | 93 | 0.39 |
| Bedding | 9,229 | 41 | 0.19 | 32,994 | 55 | 0.24 |
| Milking supplies | 16,104 | 72 | 0.34 | 38,353 | 64 | 0.27 |
| Cattle lease | 2,529 | 11 | 0.05 | 13,462 | 23 | 0.10 |
| Custom boarding | 7,157 | 32 | 0.15 | 32,411 | 54 | 0.23 |
| bST expense | 11,644 | 52 | 0.24 | 37,221 | 62 | 0.27 |
| Other livestock expense | 7,522 | 34 | 0.16 | 12,385 | 21 | 0.09 |
| Fertilizer & lime | 16,599 | 74 | 0.35 | 40,221 | 67 | 0.29 |
| Seeds & plants | 9,754 | 44 | 0.20 | 20,313 | 34 | 0.14 |
| Spray/other crop expense | 11,456 | 51 | 0.24 | 22,497 | 38 | 0.16 |
| Land, building & fence repair | 13,012 | 58 | 0.27 | 29,561 | 49 | 0.21 |
| Taxes | 9,852 | 44 | 0.21 | 18,368 | 31 | 0.13 |
| Real estate rent & lease | 12,841 | 57 | 0.27 | 36,296 | 61 | 0.26 |
| Insurance | 7,675 | 34 | 0.16 | 13,384 | 22 | 0.10 |
| Utilities | 14,798 | 66 | 0.31 | 33,096 | 55 | 0.24 |
| Miscellaneous | 8,266 | 37 | 0.17 | 20,998 | 35 | 0.15 |
| Total Less Interest Paid | \$ 584,260 | \$2,608 | \$ 12.19 | \$ 1,623,143 | \$ 2,714 | \$ 11.57 |
| <u>Net Accrual Operating Income</u> | | | | | | |
| (without interest paid) | \$ 228,811 | \$1,021 | \$ 4.77 | \$ 760,041 | \$ 1,271 | \$ 5.42 |
| - Change in livestock & crop inventory | 29,745 | 133 | 0.62 | 130,581 | 218 | 0.93 |
| - Change in accounts receivable | -11,495 | -51 | -0.24 | -25,220 | -42 | -0.18 |
| - Change in feed & supply inventory | 21,489 | 96 | 0.45 | 111,742 | 187 | 0.80 |
| + Change in accounts payable* | -353 | -2 | -0.01 | -6,764 | -11 | -0.05 |
| NET CASH FLOW | \$ 188,798 | \$843 | \$ 3.94 | \$ 536,175 | \$ 897 | \$ 3.82 |
| - Net personal withdrawals & family exp. | 51,758 | 231 | 1.08 | 126,680 | 212 | 0.90 |
| Available for Farm Debt Payments & Invest. | \$ 137,040 | \$612 | \$ 2.86 | \$ 409,495 | \$ 685 | \$ 2.92 |
| - Farm debt payments | 124,352 | 555 | 2.59 | 281,877 | 471 | 2.01 |
| Cash available for Farm Investments | \$ 12,688 | \$57 | \$ 0.26 | \$ 127,618 | \$ 213 | \$ 0.91 |

*Exclude change in interest account payable.

**Average of 31 farms with highest rates of return to all capital (without appreciation).

Repayment Analysis

The second step in cash flow planning and management is to compare and evaluate debt payments planned and made last year, and estimate the payments required in the current year. It is helpful to compare and evaluate a farm's repayment position by using debt payments per unit of production and receipt/debt payment ratios. The data below are from farms that completed summaries for both 1998 and 1999.

Table 16.

FARM DEBT PAYMENTS PLANNED New York Dairy Farms, 1999

| Debt Payments | Same 248 Dairy Farms | | | Same 26 Top 10% Farms | | |
|--------------------------------|----------------------|-----------|-----------------|-----------------------|------------|-----------------|
| | 1999 Payments | | Planned 2000 | 1999 Payments | | Planned 2000 |
| | Planned | Made | | Planned | Made | |
| Long term | \$ 37,342 | \$ 57,869 | \$ 42,837 | \$ 89,428 | \$ 146,074 | \$ 126,471 |
| Intermediate term | 62,840 | 75,050 | 71,079 | 124,460 | 139,084 | 161,978 |
| Short term | 2,907 | 3,827 | 2,614 | 7,105 | 4,496 | 3,110 |
| Operating (net reduction) | 6,034 | 0 | 8,879 | 28,583 | 0 | 26,923 |
| Accts. payable (net reduction) | 1,043 | 1,695 | 837 | 3,400 | 11,973 | 4,491 |
| Total | \$110,166 | \$138,441 | \$ 126,246 | \$ 252,976 | \$ 301,627 | \$ 322,973 |
| Per cow | \$ 463 | \$ 582 | | \$ 410 | \$ 489 | |
| Per cwt. 1999 milk | \$ 2.14 | \$ 2.68 | | \$ 1.73 | \$ 2.07 | |
| % of 1999 milk receipts | 14% | 18% | | 12% | 14% | |

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments. The ratios show the number of times the amount available for debt service in 1999 covered debt payments planned for 1999 (as of December 31, 1998).

Table 17.

COVERAGE RATIOS Same 248 New York Dairy Farms, 1998 & 1999

| Item | Average | Item | Average |
|---|------------|---|------------|
| <u>Cash Flow Coverage Ratio</u> | | <u>Debt Coverage Ratio</u> | |
| Cash farm receipts | \$ 857,807 | Net farm income (w/o apprec.) | \$ 131,610 |
| - Cash farm expenses | 701,327 | + Depreciation | 57,452 |
| + Interest paid (cash) | 41,607 | + Interest paid (accrual) | 41,523 |
| - Net personal withdrawals from farm* | 54,180 | - Net personal withdrawals from farm* | 54,180 |
| (A) = Amount Available for Debt Service | \$ 143,907 | (A') = Repayment Capacity | \$ 176,405 |
| (B) = Debt Payments Planned for 1999 (as of December 31, 1998) | \$ 110,166 | (B) = Debt Payments Planned for 1999 (as of December 31, 1998) | \$ 110,166 |
| (A/B) = Cash Flow Coverage Ratio for 1999 | 1.31 | (A'/B) = Debt Coverage Ratio for 1999 | 1.60 |
| ----- | | | |
| Same 26 Top 10% Dairy Farms, 1998 & 1999 | | | |
| (A) = Amount Available for Debt Service | \$ 412,549 | (A') = Repayment Capacity | \$ 605,446 |
| (B) = Debt Payments Planned for 1999 | 252,976 | (B) = Debt Payments Planned for 1999 | 252,976 |
| (A/B) = Cash Flow Coverage Ratio for 1999 | 1.63 | (A'/B) = Debt Coverage Ratio for 1999 | 2.39 |

*Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If excluded, the coverage ratios will be incorrect.

The debt to asset ratio is a good measure of the current relationship between assets and liabilities, but not the business' ability to meet cash flow obligations. Even with a debt to asset ratio of less than 40 percent, 9.3 percent of the farms had a cash flow coverage ratio less than 1.0.

Table 18.

DEBT TO ASSET RATIO VS. CASH FLOW COVERAGE 248 New York Dairy Farms, 1999

| Debt/Asset Ratio | Cash Flow Coverage Ratio (Farm & Nonfarm) | | | |
|------------------|---|-----------|-----------|------|
| | <.5 | .5 to .99 | 1 to 1.49 | ≥1.5 |
| | percent of farms | | | |
| <40% | 2.4 | 6.9 | 15.3 | 27.8 |
| 40 to 70% | 4.0 | 14.9 | 11.7 | 10.1 |
| 70% & over | 1.2 | 2.4 | 2.4 | 0.8 |

Cropping Program Analysis

The cropping program is an important part of the dairy farm business that sometimes is overlooked and neglected. A complete evaluation of available land resources, how they are being used, how well crops are produced and what it costs to produce them, is required to evaluate alternative cropping and feed purchase choices.

Table 19.

LAND RESOURCES AND CROP PRODUCTION 314 New York Dairy Farms, 1999

| Item | Average 314 Farms | | | Average Top 10% Farms* | | |
|--------------------|----------------------|---------------|------------------|------------------------|---------------|------------------|
| | <u>Owned</u> | <u>Rented</u> | <u>Total</u> | <u>Owned</u> | <u>Rented</u> | <u>Total</u> |
| <u>Land</u> | | | | | | |
| Tillable | 282 | 234 | 516 | 569 | 495 | 1,064 |
| Nontillable | 42 | 14 | 56 | 43 | 4 | 47 |
| Other nontillable | <u>114</u> | <u>6</u> | <u>121</u> | <u>175</u> | <u>1</u> | <u>176</u> |
| Total | 438 | 254 | 693 | 787 | 500 | 1,287 |
| <u>Crop Yields</u> | <u>Farms</u> | <u>Acres</u> | <u>Prod/Acre</u> | <u>Farms</u> | <u>Acres</u> | <u>Prod/Acre</u> |
| Hay crop | 303 | 257 | 2.9 tn DM | 27 | 540 | 3.8 tn DM |
| Corn silage | 283 | 207 | 16.3 tn | 27 | 534 | 17.6 tn |
| | | | 5.5 tn DM | | | 6.0 tn DM |
| Other forage | 33 | 44 | 1.7 tn DM | 1 | 27 | 0.8 tn DM |
| Total forage | 305 | 452 | 4.0 tn DM | 27 | 1,075 | 4.8 tn DM |
| Corn grain | 113 | 94 | 105 bu | 10 | 132 | 140 bu |
| Oats | 27 | 26 | 55 bu | 3 | 26 | 43 bu |
| Wheat | 21 | 67 | 63 bu | 0 | 0 | 0 bu |
| Other crops | 62 | 86 | | 6 | 372 | |
| Tillable pasture | 76 | 55 | | 4 | 42 | |
| Idle | 45 | 43 | | 5 | 26 | |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

Crop acres and yields compiled for the average represent only the number of farms reporting each crop. All but 11 of the 314 farms produced hay or hay crop silage in 1999. Ninety percent produced corn silage, 36 percent grew and harvested corn grain, and 9 percent grew oats for grain. Although 76 farms used tillable pasture in 1999, only 53 farms reported using rotational grazing.

Yields of forage crops have been converted to tons of dry matter using dry matter coefficients reported by the farmers. Grain production has been converted to bushels of dry grain equivalent.

Crop acres represent planted acres, therefore, any unharvested acres are reflected in lower yields per acre.

The following measures of crop management indicate how efficiently the land resource is being used and how well total forage requirements are being met.

Table 20.

CROP MANAGEMENT FACTORS 314 New York Dairy Farms, 1999

| Item | Average 314 Farms | Average Top 10% Farms* |
|---|----------------------|---------------------------|
| Total tillable acres per cow | 2.30 | 1.78 |
| Total forage acres per cow | 1.96 | 1.57 |
| Harvested forage dry matter, tons per cow | 7.85 | 7.58 |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

In the seventh year of collecting information on pasture costs, 13 cooperators provided pasture-related expenses. Fifty-six cooperators allocated direct crop related expenses to hay crop, corn and other crop production. The data in Table 21 have been compiled to show the average crop related production expenses per acre and per unit for these crops and for pasture. Note that labor and machinery costs have not been included. Total corn expenses are allocated to corn silage and corn grain based on the proportion of acres in each crop. In Table 21, the total per tillable acre represents all 314 farms, the expenses for hay are for 55 farms and corn crops are for the 56 farms. The pasture costs are for the 13 farms which submitted data.

Table 21.

CROP RELATED ACCRUAL EXPENSES
New York Dairy Farms, 1999

| Expenses | Average 314 Farms Total per Tillable Acre | Farms Reporting Crop Costs | | | | | | |
|----------------------------|--|---|---------------|----------------------------|---------------------------------|---------------------------------------|----------------------|----------------------|
| | | Average 55 Farms | | Average 56 Farms | | | Average 13 Farms | |
| | | Hay Crop | | All Corn Per Acre | Corn Silage Per Ton DM | Corn Grain Per Dry Shell Bu. | Pasture | |
| | | Per Acre | Per Ton DM | | | | Per Till. Acre | Per Total Acre |
| Fertilizer & lime | \$32.17 | \$22.61 | \$7.43 | \$38.73 | \$6.73 | \$0.38 | \$38.57 | \$9.76 |
| Seeds & plants | 18.90 | 11.67 | 3.83 | 32.42 | 5.63 | 0.32 | 17.76 | 4.49 |
| Spray & other crop exp. | <u>22.20</u> | <u>8.18</u> | <u>2.69</u> | <u>50.87</u> | <u>8.84</u> | <u>0.50</u> | <u>1.00</u> | <u>0.25</u> |
| Total | \$73.27 | \$42.46 | \$13.75 | \$122.02 | \$21.20 | \$1.20 | \$57.33 | \$14.50 |
| Ave. Top 10% Farms:* | <u>Average 31 Farms</u> | <u>Average 5 Farms Reporting Crop Costs</u> | | | | | | |
| Fertilizer & lime | \$37.80 | \$18.37 | \$4.71 | \$36.16 | \$5.08 | \$0.29 | | |
| Seeds & plants | 19.09 | 10.34 | 2.65 | 33.67 | 4.73 | 0.27 | | |
| Spray & other crop exp. | <u>21.14</u> | <u>14.41</u> | <u>3.70</u> | <u>64.64</u> | <u>9.08</u> | <u>0.52</u> | | |
| Total | \$78.03 | \$43.12 | \$11.06 | \$134.47 | \$18.89 | \$1.08 | | |

*Average of farms with highest rates of return to all capital (without appreciation).

Most machinery costs are associated with crop production and should be analyzed with the crop enterprise. Total machinery expenses include the major fixed costs (interest and depreciation), as well as the accrual operating costs. Machinery costs have not been allocated to individual crops, but they are calculated per total tillable acre.

Table 22.

ACCRUAL MACHINERY EXPENSES
314 New York Dairy Farms, 1999

| Machinery Expense Item | Average 314 Farms | | Average Top 10% Farms* | |
|-------------------------------------|-------------------|------------------|------------------------|------------------|
| | Total Expenses | Per Til. Acre | Total Expenses | Per Til. Acre |
| Fuel, oil & grease | \$11,676 | \$22.63 | \$25,484 | \$23.95 |
| Machinery repairs & vehicle expense | 37,198 | 72.09 | 82,636 | 77.67 |
| Machine hire, rent & lease | 18,968 | 36.76 | 52,120 | 48.98 |
| Interest (5%) | 13,023 | 25.24 | 28,166 | 26.47 |
| Depreciation | <u>31,585</u> | <u>61.21</u> | <u>76,971</u> | <u>72.34</u> |
| Total | \$112,450 | \$217.93 | \$265,377 | \$249.41 |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

Table 23.

CROP RELATED ACCRUAL EXPENSES BY HAY CROP PRODUCTION PER ACRE
55 New York Dairy Farms, 1999

| Item | Tons of Hay Crop Dry Matter Per Acre | | | | |
|---|--------------------------------------|----------|----------|----------|----------|
| | <2.0 | 2.0-2.4 | 2.5-2.9 | 3.0-3.4 | ≥3.5 |
| Hay crop, tons DM/acre | 1.5 | 2.2 | 2.8 | 3.3 | 4.5 |
| Farms reporting crop expense breakdowns | 12 | 10 | 13 | 9 | 11 |
| Average number hay crop acres for farms reporting | 215 | 197 | 258 | 217 | 284 |
| <u>Accrual Crop Expenses</u> | | | | | |
| <u>Per Acre of Hay Crop:</u> | | | | | |
| Fertilizer & lime | \$ 25.07 | \$ 19.23 | \$ 21.02 | \$ 24.85 | \$ 22.99 |
| Seeds & plants | 15.37 | 7.22 | 11.57 | 11.40 | 11.68 |
| Spray & other crop expenses | 9.95 | 7.19 | 6.34 | 5.35 | 11.07 |
| Total | \$ 50.39 | \$ 33.64 | \$ 38.93 | \$ 41.60 | \$ 45.74 |
| <u>Accrual Crop Expense</u> | | | | | |
| <u>Per Ton DM of Hay Crop:</u> | | | | | |
| Fertilizer & lime | \$ 16.95 | \$ 7.59 | \$ 7.87 | \$ 5.62 | \$ 4.46 |
| Seeds & plants | 10.39 | 2.85 | 4.33 | 2.58 | 2.27 |
| Spray & other crop expenses | 6.73 | 2.84 | 2.37 | 1.21 | 2.15 |
| Total | \$ 34.07 | \$ 13.28 | \$ 14.57 | \$ 9.41 | \$ 8.88 |

Table 24.

CROP RELATED ACCRUAL EXPENSES BY CORN PRODUCTION PER ACRE
56 New York Dairy Farms, 1999

| Item | Tons Corn Silage/Acre | | | Dry Shell Bushels of Corn Grain Per Acre | | |
|---|-----------------------|-----------|-----------|--|-----------|-----------|
| | <13 | 13-18 | ≥18 | <88 | 88-113 | ≥113 |
| Corn yield per acre | 10.3 | 15.5 | 20.3 | 65 | 98 | 141 |
| Farms reporting crop expense breakdowns | 16 | 20 | 19 | 6 | 16 | 8 |
| Average number corn acres for farms reporting | 147 | 197 | 239 | 238 | 222 | 199 |
| <u>Accrual Crop Expense/Acre of Corn</u> | | | | | | |
| Fertilizer & lime | \$ 34.40 | \$ 44.86 | \$ 35.90 | \$ 54.24 | \$ 42.60 | \$ 39.93 |
| Seeds & plants | 29.48 | 35.38 | 30.98 | 31.29 | 29.36 | 33.85 |
| Spray & other crop expenses | 44.76 | 53.80 | 52.02 | 41.68 | 50.24 | 65.93 |
| Total | \$ 108.64 | \$ 134.04 | \$ 118.90 | \$ 127.21 | \$ 122.20 | \$ 139.71 |
| <u>Accrual Crop Expense Per:*</u> | | | | | | |
| | Ton DM of Corn Silage | | | Dry Shell Bushel of Corn Grain | | |
| Fertilizer & lime | \$ 10.23 | \$ 8.57 | \$ 4.92 | \$ 0.75 | \$ 0.43 | \$ 0.29 |
| Seeds & plants | 8.77 | 6.76 | 4.24 | 0.43 | 0.30 | 0.24 |
| Spray & other crop expense | 13.31 | 10.28 | 7.12 | 0.58 | 0.51 | 0.47 |
| Total | \$ 32.31 | \$ 25.61 | \$ 16.28 | \$ 1.76 | \$ 1.24 | \$ 1.00 |

*Total corn expenses are allocated to corn silage and corn grain based on the proportion of acres in each crop.

From the above two tables, it is important to observe that as forage yields per acre increase, crop related expenses per acre generally also increase. For corn silage and corn grain, crop expense per ton of dry matter and per bushel are highest at the low levels of production. Hay crop expenses per ton of dry matter decrease substantially as yields exceed 3.0 tons per acre. The lower dry matter costs on the farms with greater than 3.0 tons per acre can be attributed to significantly higher yields with controlled expenses per acre.

Dairy Program Analysis

An analysis of the dairy enterprise can be the most important step in evaluating the strengths and weaknesses of the dairy farm business. Changes in dairy herd size and market values are identified in the table below. The change in inventory value without appreciation is attributed to physical changes in herd size and quality. This increase in inventory is included as an accrual farm receipt when calculating profitability.

Table 25.

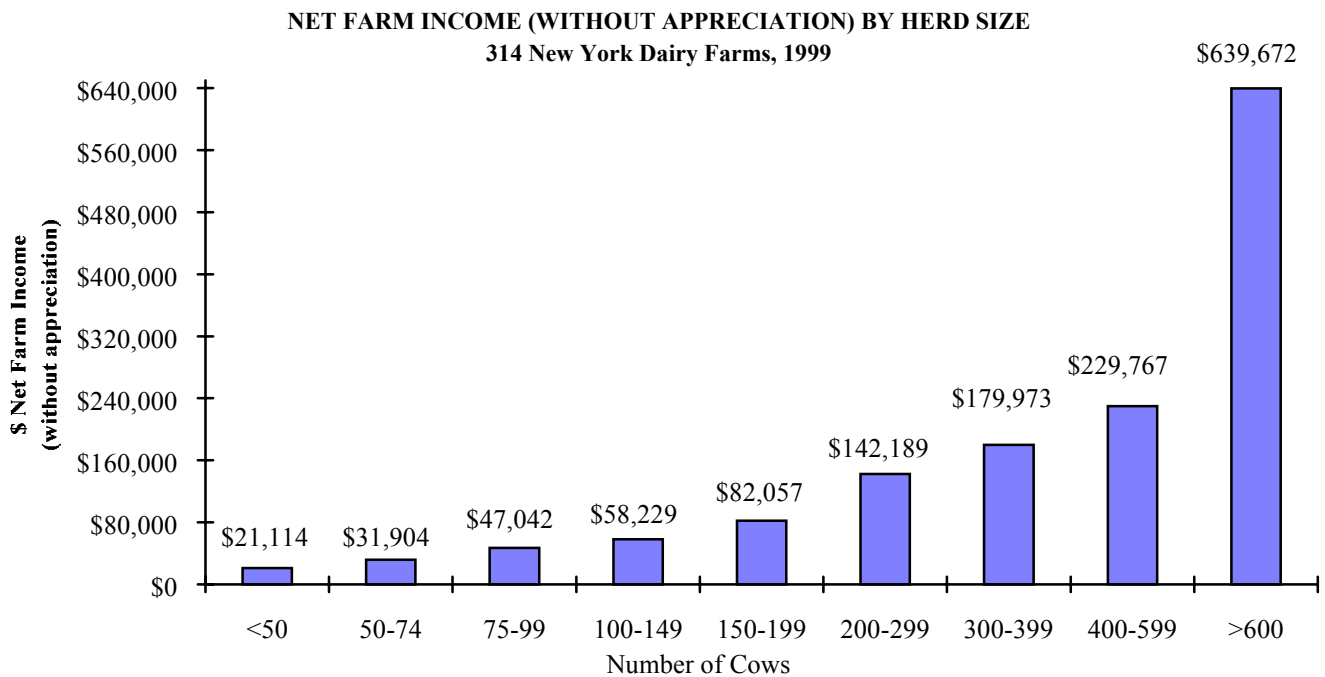
DAIRY HERD INVENTORY 314 New York Dairy Farms, 1999

| Item | Dairy Cows | | Heifers | | | | | |
|--------------------------------|------------|--------------|---------|------------------|------|--------------|--------|------------|
| | No. | Value | Bred | | Open | | Calves | |
| | | | No. | Value | No. | Value | No. | Value |
| Beg. year (owned) | 215 | \$ 224,709 | 58 | \$ 53,322 | 57 | \$ 31,698 | 44 | \$ 13,101 |
| + Change w/o apprec. | | 10,742 | | 4,496 | | 1,151 | | 994 |
| + Appreciation | | <u>4,896</u> | | <u>1,572</u> | | <u>1,383</u> | | <u>628</u> |
| End year (owned) | 225 | \$ 240,347 | 62 | \$ 59,390 | 57 | \$ 34,232 | 47 | \$ 14,723 |
| End including leased | 231 | | | | | | | |
| Average number | 224 | | 164 | (all age groups) | | | | |
| <u>Average Top 10% Farms:*</u> | | | | | | | | |
| Beg. year (owned) | 547 | \$ 550,419 | 161 | \$ 140,929 | 152 | \$ 77,721 | 96 | \$ 25,858 |
| + Change w/o apprec. | | 48,109 | | 15,272 | | 2,824 | | 8,603 |
| + Appreciation | | <u>2,371</u> | | <u>945</u> | | <u>2,642</u> | | <u>400</u> |
| End year (owned) | 592 | \$ 600,899 | 176 | \$ 157,146 | 148 | \$ 83,187 | 124 | \$ 34,861 |
| End including leased | 622 | | | | | | | |
| Average number | 598 | | 432 | (all age groups) | | | | |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

There is a strong relationship between farm size and farm income on well managed dairy farms. When data are sorted by herd size categories this relationship becomes apparent as shown in Chart 5. Net farm income increased \$618,558 while labor and management income per operator jumped \$199,048 as herd size increased from less than 50 to over 600 cows per farm. For more information on herd size comparisons, see pages 46-55.

Chart 5.



Total milk sold and milk sold per cow are extremely valuable measures of productivity on the dairy farm. These measures of milk output are based on pounds of milk marketed during the year.

Table 26.

MILK PRODUCTION
314 New York Dairy Farms, 1999

| Item | Average 314 Farms | Average Top 10% Farms* |
|--|----------------------|---------------------------|
| Total milk sold, lbs. | 4,793,159 | 14,027,628 |
| Milk sold per cow, lbs. | 21,439 | 23,463 |
| Average milk plant test, percent butterfat | 3.68% | 3.62% |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

Farms with higher rates of production tend to have higher profits. In 1999, most of the farms that sold more than 21,000 pounds of milk per cow had above average profit margins.

Table 27.

MILK SOLD PER COW AND FARM INCOME MEASURES
314 New York Dairy Farms, 1999

| Pounds of Milk Sold Per Cow | Number of Farms | Average Number of Cows | Net Farm Income w/o Apprec. | Net Farm Income Per Cow | Labor & Management Income/Oper. |
|--------------------------------|--------------------|------------------------------|-----------------------------------|-------------------------------|---------------------------------------|
| Under 16,000 | 49 | 92 | \$27,916 | \$303 | \$958 |
| 16,000 to 16,999 | 24 | 92 | 22,065 | 240 | -640 |
| 17,000 to 17,999 | 30 | 115 | 52,730 | 459 | 14,234 |
| 18,000 to 18,999 | 30 | 124 | 44,162 | 356 | 8,324 |
| 19,000 to 19,999 | 31 | 157 | 75,562 | 481 | 29,258 |
| 20,000 to 20,999 | 23 | 247 | 112,286 | 455 | 43,240 |
| 21,000 to 21,999 | 35 | 263 | 125,387 | 477 | 35,639 |
| 22,000 to 22,999 | 35 | 316 | 190,362 | 602 | 69,822 |
| 23,000 & over | 57 | 448 | 308,670 | 689 | 116,697 |

The relationship between milk output per cow and net farm income on all dairy farms is shown in Table 27 above and is diagrammed in Charts 6 and 7 on page 26. Each spot on each scatter diagram represents one of the 314 farms.

Data in Chart 6 and Table 27 show that as milk sold per cow increased from 8,000 to 18,000 pounds, there was an increase in net farm income and the variation around the trend was relatively small at these production levels. As milk output exceeded 19,000 pounds per cow, average net farm income increased rapidly and the range in net farm income exceeded \$600,000 at higher levels of milk output.

The relationship between milk output per cow and net farm income per cow is presented in Chart 7 and Table 27. Profitability measured as net farm income per cow rather than per farm partially removes the influence of herd size and also shows a positive relationship with milk sold per cow. Most of the farms that achieved \$1,000 or more of net farm income per cow sold between 20,000 and 30,000 pounds of milk per cow; however, many farms also achieved high levels of profit with lower milk output per cow.

The trend lines on charts on the following pages were completed using regression techniques. The predictive formulas and R^2 are presented for each relationship. An R^2 of 1.00 indicates a perfect relationship between the data and the trend line. An R^2 of .30 for example, is interpreted as the trend line explaining 30% of the variability in the relationship. The higher the R^2 , the better the trend line fits the data.

Chart 6.

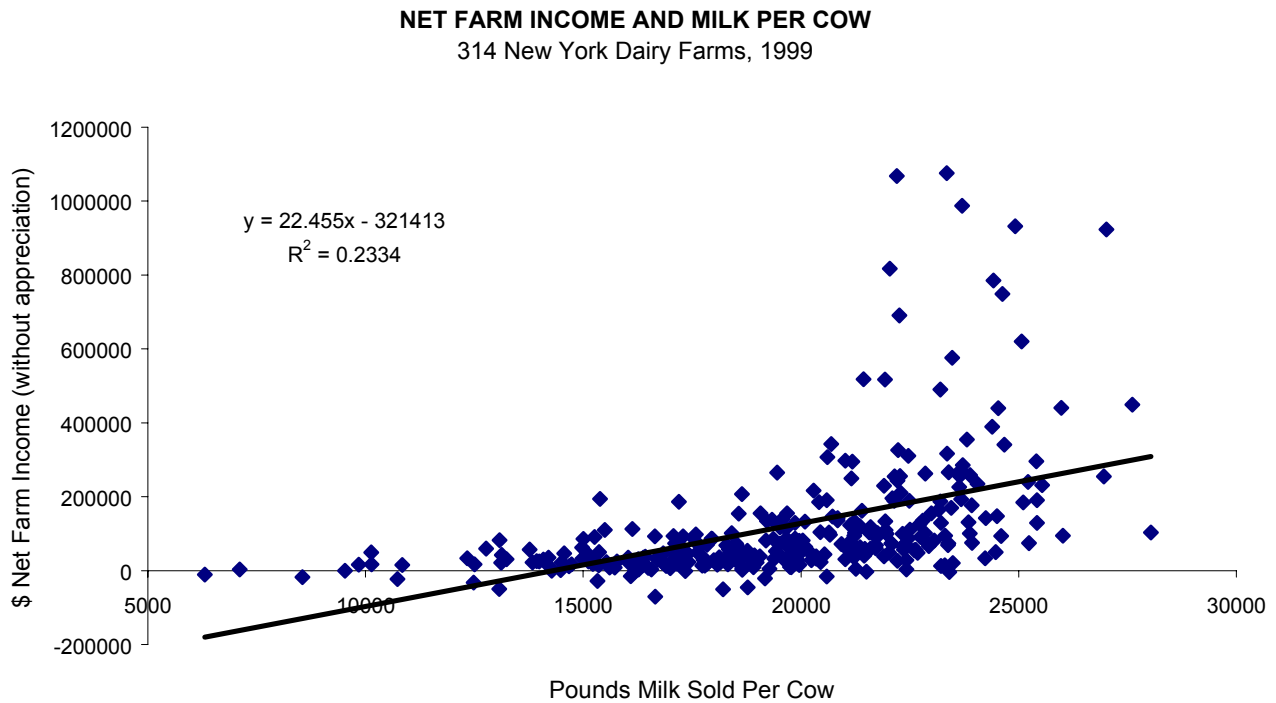
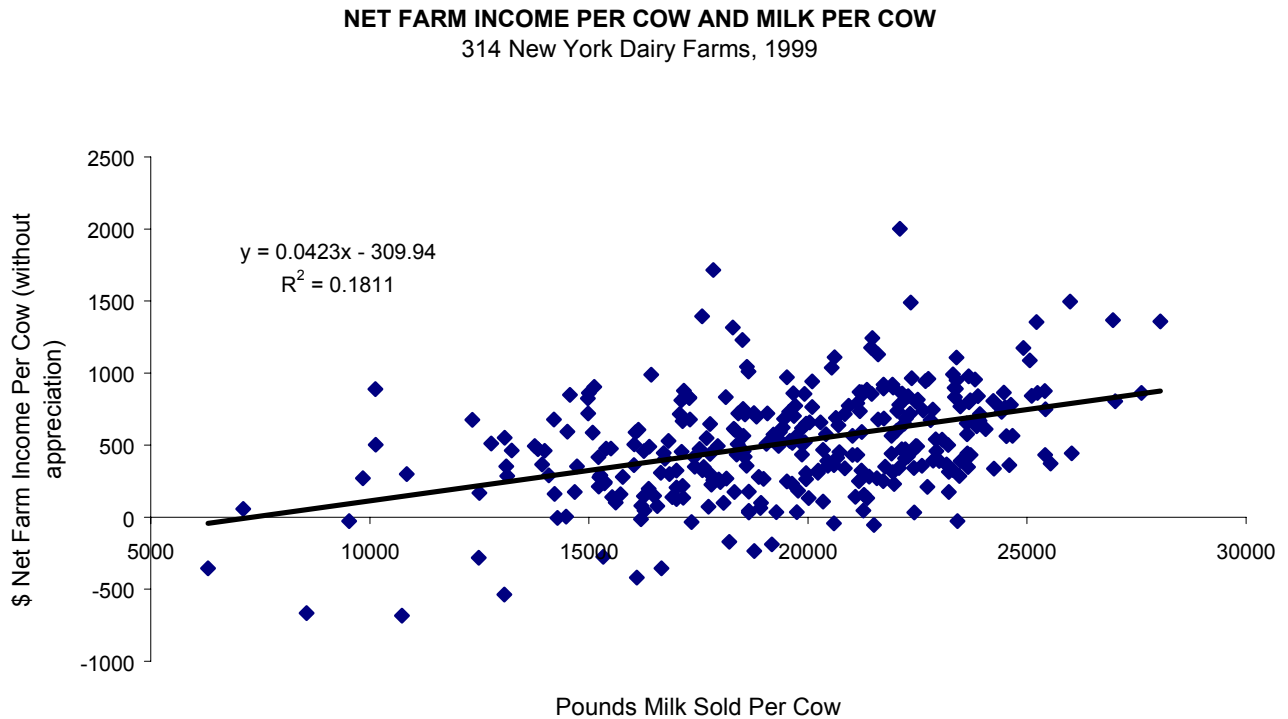


Chart 7.



Charts 8 and 9 look at relationships between cull rates and milk production and net farm income per cow. For the 1999 year, supplementary information concerning dairy replacements was collected from 88 participating farms. The business chart (Table 28.) reports the range of reported factors for the different information that was collected. Please refer to the glossary for definitions of the different terms and how the measures were calculated.

Chart 8.

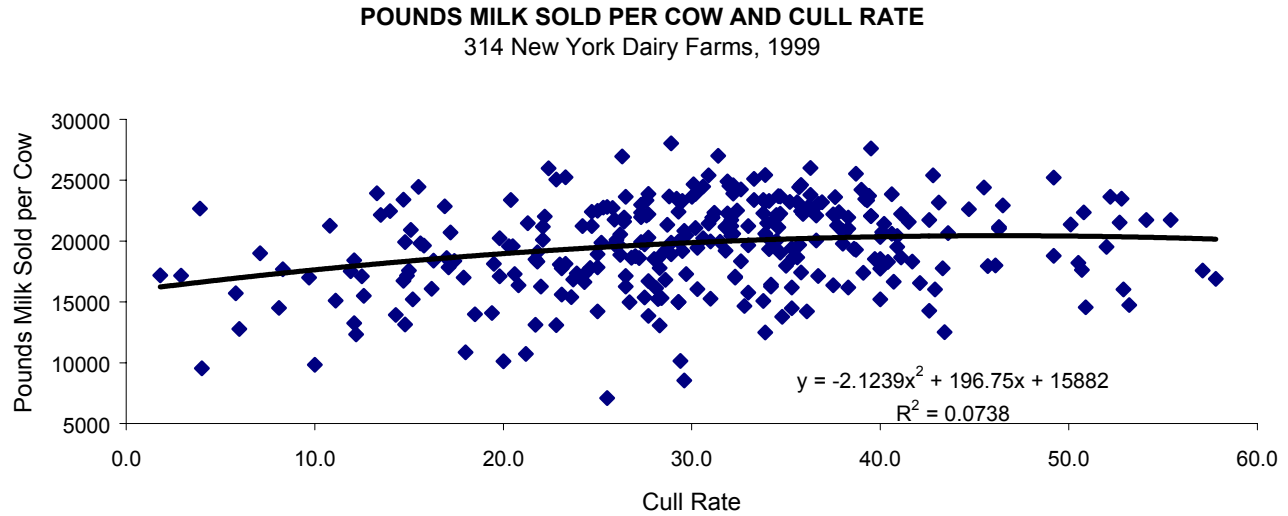


Chart 9.

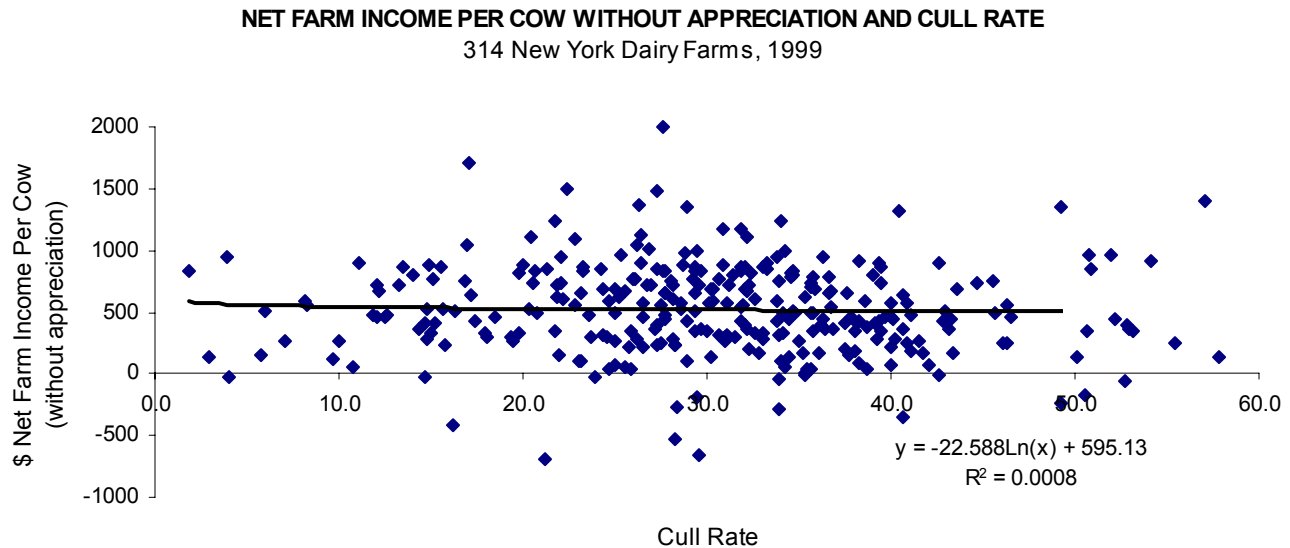


Table 28.

CULLING RATE AND DAIRY REPLACEMENT INFORMATION
New York Dairy Farms, 1999

| Sell Rate | Death Rate | Cull Rate | Value of Cows Sold | Value of Animals Purchased | Percent of Replacements Purchased | Percent of Heifers Being Custom Raised |
|----------------------|------------|-----------|--------------------|----------------------------|-----------------------------------|--|
| -----304 Farms*----- | | | | (115 Farms) | ----- 88 Farms ----- | |
| 7% | 0% | 11% | \$ 147 | \$516 | 0% | 0% |
| 14 | 1 | 19 | 253 | 920 | 0 | 0 |
| 20 | 2 | 24 | 312 | 1,063 | 0 | 0 |
| 23 | 3 | 27 | 347 | 1,149 | 0 | 0 |
| 25 | 3 | 29 | 381 | 1,208 | 0 | 0 |
| 27 | 4 | 32 | 408 | 1,247 | 3 | 0 |
| 30 | 5 | 34 | 436 | 1,317 | 13 | 1 |
| 32 | 6 | 37 | 474 | 1,440 | 23 | 19 |
| 36 | 8 | 40 | 550 | 1,758 | 50 | 46 |
| 44 | 12 | 49 | 939 | 6,121 | 91 | 93 |

*Average culling rate = 32.9%, sell rate = 28%, and death rate = 5%. Average number of cows sold for beef = 63, cows sold for dairy = 2, and cows died = 11.

Cost of Producing Milk

The cost of producing milk has been compiled below using the whole farm method. The following steps are used in the calculations.

1. The cost of expansion livestock is added to total accrual operating expenses to offset any related inventory increase included in accrual receipts.
2. Accrual milk sales are deducted from total accrual receipts to get total accrual nonmilk receipts which are used to represent total nonmilk operating costs.
3. Total accrual nonmilk receipts are subtracted from total accrual operating expenses including expansion livestock to calculate the operating cost of producing milk.
4. Machinery depreciation and building depreciation are added to operating costs to determine the purchased inputs cost of producing milk.
5. The opportunity cost of equity capital, operator's labor and operator's management and the value of unpaid family labor are added to all other costs to obtain the total cost of producing milk. This cost includes all the operating, depreciation, and imputed cost of producing milk.

Table 29.

COST OF PRODUCING MILK, WHOLE FARM METHOD
314 New York Dairy Farms, 1999

| Item | Average 314 Farms | | Average Top 10% Farms | |
|---|----------------------|-------------------|--------------------------|-------------------|
| Total Accrual Operating Expenses | \$ | 624,100 | \$ | 1,721,548 |
| Expansion Livestock, Accrual | + | <u>12,263</u> | + | <u>46,804</u> |
| 1. Total Accrual Operating Expenses, Including Expansion Livestock | | \$ 636,363 | | \$1,768,352 |
| Total Accrual Receipts | \$ | 813,071 | \$ | 2,383,184 |
| Milk Sales, Accrual | - | <u>714,529</u> | - | <u>2,097,843</u> |
| 2. Total Accrual Nonmilk Receipts | | <u>-\$ 98,542</u> | | <u>-\$285,341</u> |
| 3. Operating Cost of Producing Milk | | \$ 537,821 | | \$1,483,011 |
| Machinery Depreciation | + | \$ 31,585 | + | 76,971 |
| Building Depreciation | + | <u>22,913</u> | + | <u>59,843</u> |
| 4. Purchased Inputs Cost of Producing Milk | | \$ 592,319 | | \$1,619,825 |
| Family Labor Unpaid (\$1,800/month) | + | 5,400 | + | 3,420 |
| Real Interest on Equity Capital | + | 41,232 | + | 83,965 |
| Value of Operator's Labor & Management | + | <u>47,099</u> | + | <u>64,632</u> |
| 5. Total Costs of Producing Milk | | \$ 686,050 | | \$1,771,842 |
| 6. Costs Per Cwt.: | | | | |
| Cwt. Milk Sold | | 47,932 | | 140,276 |
| Operating Cost Per Cwt. | \$ | 11.22 | \$ | 10.57 |
| Purchased Inputs Cost Per Cwt. | \$ | 12.36 | \$ | 11.55 |
| Total Cost Per Cwt. | \$ | 14.31 | \$ | 12.63 |

Costs of producing milk per hundredweight are presented for eight expenditure categories in Table 30. The whole farm method assumption that accrual nonmilk receipts represent nonmilk operating costs is used in computing net costs. A \$12,168 average increase in crop inventories per farm, (\$.25 per cwt. of milk), is included in crop sales.

Table 30.

**ITEMIZED COSTS OF PRODUCING MILK PER HUNDREDWEIGHT
BASED ON WHOLE FARM DATA
314 New York Dairy Farms, 1999**

| Item | Average 314 Farms | Average Top 10% Farms** |
|---|----------------------|----------------------------|
| Dairy grain and concentrate | \$3.74 | \$3.75 |
| Dairy roughage | 0.22 | 0.29 |
| Nondairy feed | <u>0.00</u> | <u>0.00</u> |
| Total feed expense | \$3.96 | \$4.04 |
| Crop expense | 0.79 | 0.59 |
| - Crop sales and government receipts* | <u>0.74</u> | <u>0.67</u> |
| Net Feed and Crop Expense | \$4.01 | \$3.96 |
| Hired labor | 2.14 | 2.36 |
| Operator's and family labor | <u>1.10</u> | <u>0.49</u> |
| Total Labor Expense | \$3.24 | \$2.85 |
| Machine repairs, fuel and hire | 1.42 | 1.14 |
| Machinery depreciation | 0.66 | 0.55 |
| - Gas tax refunds and custom work | <u>0.04</u> | <u>0.01</u> |
| Net Machinery Expense | \$2.04 | \$1.68 |
| Replacement and expansion cattle purchases | 0.50 | 0.45 |
| - Sales and inventory growth | <u>1.08</u> | <u>1.26</u> |
| Net Cattle Purchases | \$-0.58 | \$-0.81 |
| Milk marketing costs | 0.49 | 0.39 |
| All other livestock expense excluding purchases | <u>1.77</u> | <u>1.84</u> |
| Net Livestock Expense | \$2.26 | \$2.23 |
| Real estate repairs, rent and taxes | 0.75 | 0.60 |
| Building depreciation | <u>0.48</u> | <u>0.43</u> |
| Total Real Estate Expense | \$1.23 | \$1.03 |
| Interest paid | 0.83 | 0.70 |
| Interest on equity | <u>0.86</u> | <u>0.60</u> |
| Total Interest Expense | \$1.69 | \$1.30 |
| Other operating and miscellaneous expenses | 0.64 | 0.49 |
| - Miscellaneous income | <u>0.20</u> | <u>0.10</u> |
| Net Miscellaneous Expenses | \$ 0.44 | \$0.39 |
| Total Cost of Producing Milk | \$14.31 | \$12.63 |
| Purchased Inputs Cost | \$12.36 | \$11.55 |
| Total Operating Cost | \$11.22 | \$10.57 |

*Non-crop related government payments may bias the results.

**Average of 31 farms with highest rates of return to all capital (without appreciation).

Costs of producing milk per hundredweight are presented in the table below for 248 farms that participated both in 1998 and 1999. Costs of production increased in all expense categories except feed and miscellaneous expenses when 1999 data are compared to 1998.

Table 31.

**ITEMIZED COSTS OF PRODUCING MILK PER HUNDREDWEIGHT
BASED ON WHOLE FARM DATA
Same 248 New York Dairy Farms, 1998-1999**

| Item | 1998 | 1999 | Percent Change |
|---|-------------|-------------|----------------|
| Dairy grain and concentrate | \$4.02 | \$3.72 | -7.5% |
| Dairy roughage | 0.21 | 0.22 | 4.8 |
| Nondairy feed | <u>0.00</u> | <u>0.00</u> | |
| Total feed expense | \$4.23 | \$3.94 | -6.9 |
| Crop expense | 0.79 | 0.78 | |
| - Crop sales and government receipts* | <u>0.55</u> | <u>0.75</u> | |
| Net Feed and Crop Expense | \$4.47 | \$3.97 | -11.2% |
| Hired labor | 2.11 | 2.21 | |
| Operator's and family labor | <u>1.03</u> | <u>0.99</u> | |
| Total Labor Expense | \$3.14 | \$3.20 | 1.9% |
| Machine repairs, fuel and hire | 1.34 | 1.41 | |
| Machinery depreciation | 0.59 | 0.64 | |
| - Gas tax refunds and custom work | <u>0.04</u> | <u>0.03</u> | |
| Net Machinery Expense | \$1.89 | \$2.02 | 6.9% |
| Replacement and expansion cattle purchases | 0.45 | 0.47 | |
| - Sales and inventory growth | <u>1.04</u> | <u>1.05</u> | |
| Net Cattle Purchases | \$-0.59 | \$-0.58 | 1.7% |
| Milk marketing costs | 0.53 | 0.51 | |
| All other livestock expense excluding purchases | <u>1.72</u> | <u>1.80</u> | |
| Net Livestock Expense | \$2.25 | \$2.31 | 2.7% |
| Real estate repairs, rent and taxes | 0.72 | 0.74 | |
| Building depreciation | <u>0.48</u> | <u>0.47</u> | |
| Total Real Estate Expense | \$1.20 | \$1.21 | 0.8% |
| Interest paid | 0.92 | 0.80 | |
| Interest on equity | <u>0.82</u> | <u>0.86</u> | |
| Total Interest Expense | \$1.74 | \$1.66 | -4.6% |
| Other operating and miscellaneous expenses | 0.61 | 0.62 | |
| - Miscellaneous income | <u>0.19</u> | <u>0.18</u> | |
| Net Miscellaneous Expenses | \$ 0.42 | \$0.44 | 4.8% |
| Total Cost of Producing Milk | \$14.51 | \$14.26 | -1.7% |
| Purchased Inputs Cost | \$12.67 | \$12.40 | -2.1% |
| Total Operating Cost | \$11.60 | \$11.29 | -2.7% |
| Average Price Received for Milk | \$15.59 | \$14.95 | -4.1% |

*Non-crop related government payments may bias the results.

The three measures of the accrual cost of producing milk per cow and per hundredweight are compared with accrual receipts from milk sales in Table 32.

Table 32.

**COST OF PRODUCING MILK, ACCRUAL RECEIPTS FROM DAIRY, AND PROFITABILITY
314 New York Dairy Farms, 1999**

| Item | Average 314 Farms | | | Average Top 10% Farms | | |
|---|-------------------|---------|----------|-----------------------|---------|----------|
| | Total | Per Cow | Per Cwt. | Total | Per Cow | Per Cwt. |
| <u>Accrual Cost of Producing Milk</u> | | | | | | |
| Operating Cost | \$537,821 | \$2,401 | \$11.22 | \$1,483,011 | 2,480 | \$10.57 |
| Purchased Inputs Cost | 592,319 | 2,644 | 12.36 | 1,619,825 | 2,709 | 11.55 |
| Total Cost | 686,050 | 3,063 | 14.31 | 1,771,842 | 2,963 | 12.63 |
| <u>Accrual Receipts from Milk</u> | | | | | | |
| Net Milk Receipts | \$714,529 | \$3,190 | \$14.91 | \$2,097,843 | \$3,508 | \$14.96 |
| | 690,999 | 3,085 | 14.42 | 2,042,512 | 3,416 | 14.56 |
| <u>Profitability</u> | | | | | | |
| Net Farm Income without Appreciation | \$122,210 | \$546 | \$2.55 | \$478,018 | \$799 | \$3.41 |
| Net Farm Income with Appreciation | \$151,175 | \$675 | \$3.15 | \$529,087 | \$885 | \$3.77 |

The operating cost of producing milk on all 314 dairy farms averaged \$11.22 per hundredweight, leaving \$3.69 to cover depreciation, unpaid labor and operator resources.

The total cost of producing milk on all 314 dairy farms averaged \$14.31 per hundredweight, \$0.60 less than the average price received for milk sold from these farms during 1999. The imputed costs or charge for the operator's labor, management and equity capital average \$1.84 per hundredweight in 1999. The computed returns averaged \$2.44 per hundredweight. The 31 most profitable farms held their operating costs to \$10.57 per hundredweight and their total cost of producing milk averaged \$12.63 per hundredweight. This left a profit of \$2.33 per hundredweight of milk sold.

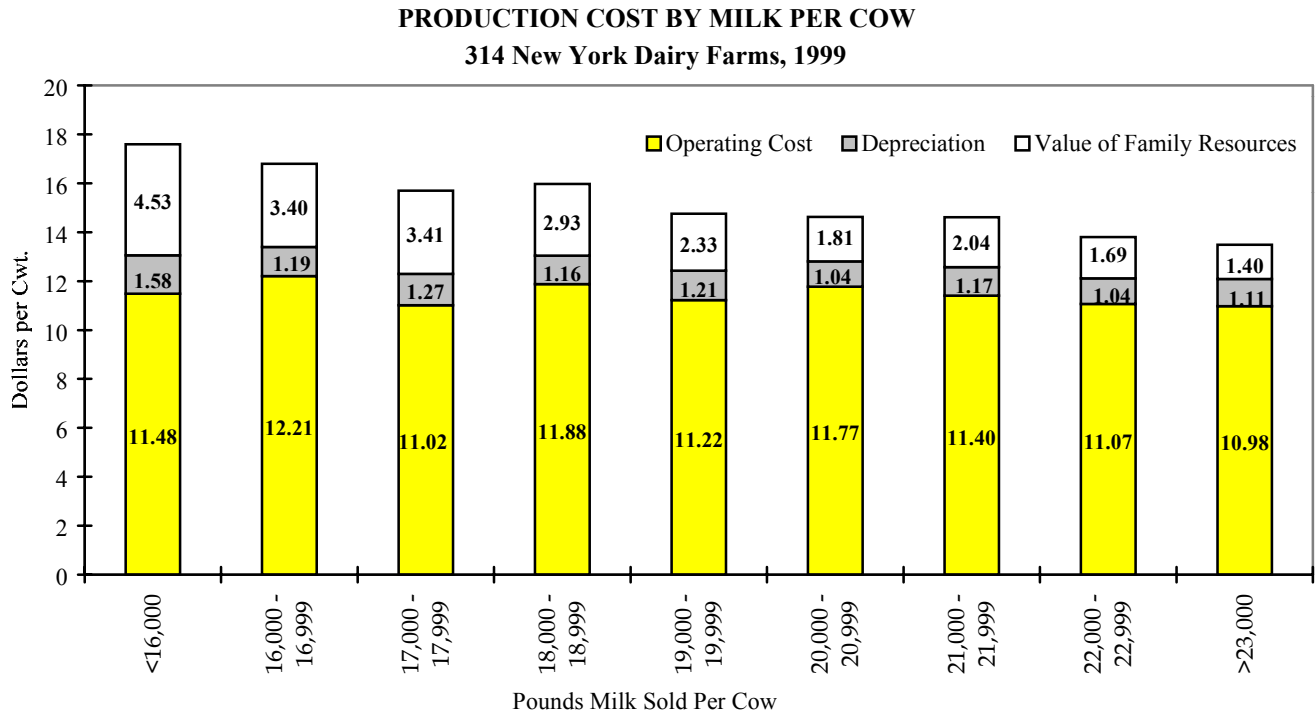
The strong relationship between milk output per cow and the cost of producing milk are shown in Table 33 and Chart 10 on page 32. Farms selling less than 18,000 pounds of milk per cow had average total costs of production of \$16.70 per hundredweight while those selling 18,000 pounds and over averaged \$14.54 for a difference of \$2.16 per hundredweight.

Table 33.

**FARM COST OF PRODUCING MILK BY MILK SOLD PER COW
314 New York Dairy Farms, 1999**

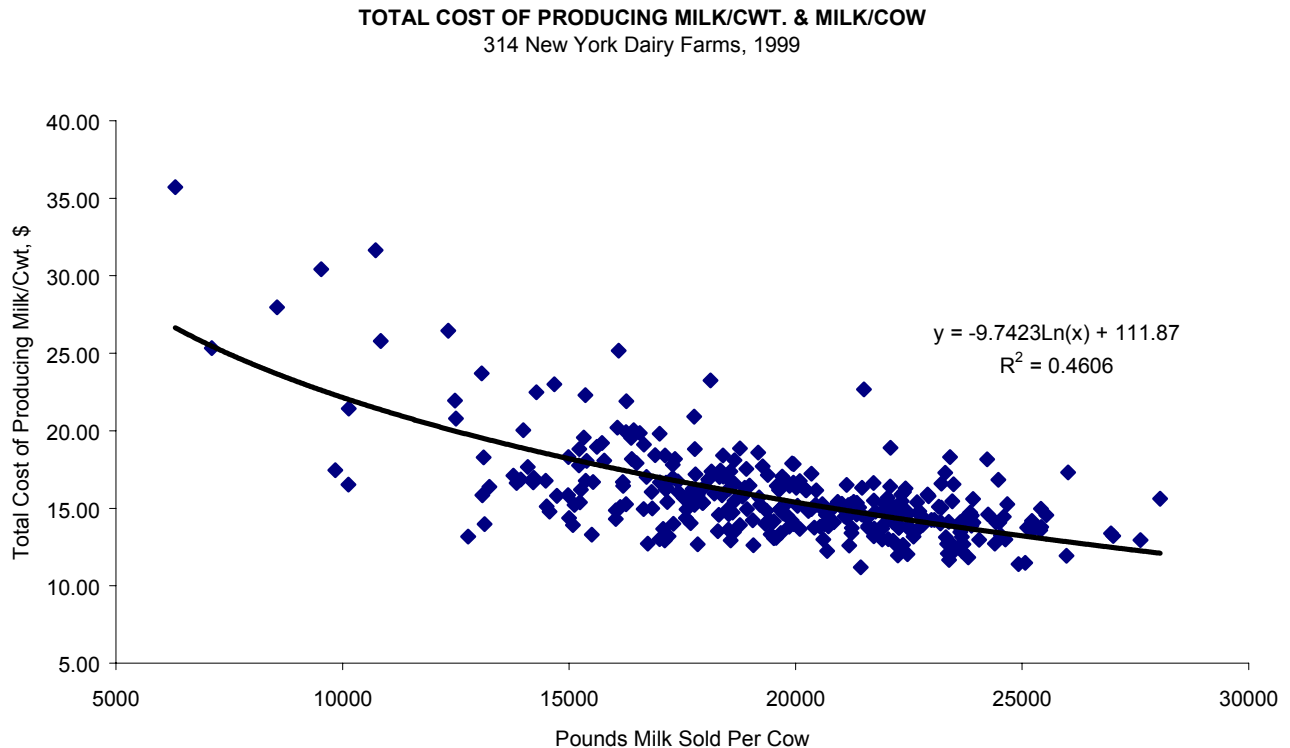
| Pounds Milk Sold Per Cow | Cost per Hundredweight | | | | | Accrual Receipts From Milk Per Cwt. | Return Per Cwt. To Operator's Labor, Mgmt. & Capital |
|-----------------------------|------------------------|------------------------|--------------------|---------------------|---------|--|---|
| | Hired Labor | Dairy Grain & Conc. | Total Operating | Purchased Inputs | Total | | |
| Under 16,000 | \$1.35 | \$3.97 | \$11.48 | \$13.06 | \$17.59 | \$15.20 | \$1.60 |
| 16,000-16,999 | 1.09 | 4.22 | 12.21 | 13.40 | 16.80 | 14.86 | 1.04 |
| 17,000-17,999 | 1.21 | 3.88 | 11.02 | 12.29 | 15.70 | 14.92 | 2.29 |
| 18,000-18,999 | 1.64 | 3.92 | 11.88 | 13.04 | 15.97 | 14.96 | 1.72 |
| 19,000-19,999 | 1.79 | 3.93 | 11.22 | 12.43 | 14.76 | 14.89 | 2.27 |
| 20,000-20,999 | 2.08 | 3.60 | 11.77 | 12.81 | 14.62 | 15.03 | 2.15 |
| 21,000-21,999 | 2.14 | 3.75 | 11.40 | 12.57 | 14.61 | 14.79 | 2.13 |
| 22,000-22,999 | 2.20 | 3.76 | 11.07 | 12.11 | 13.80 | 14.81 | 2.61 |
| 23,000 & over | 2.46 | 3.64 | 10.98 | 12.09 | 13.49 | 14.93 | 2.81 |

Chart 10.



The relationship between total cost of producing milk and milk sold per cow is diagrammed in Chart 11. It shows that as milk sold per cow increases on the average, total cost of production decreases, at a fairly constant rate.

Chart 11.



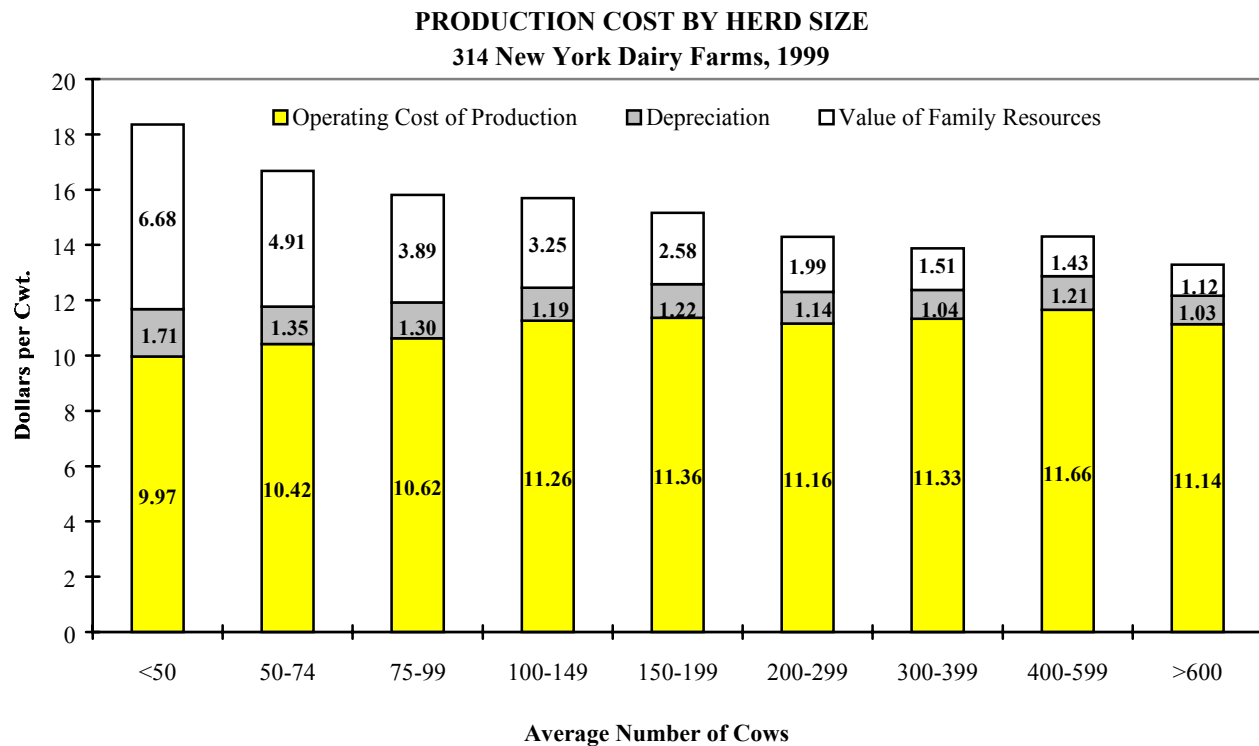
Data in Table 34 and Chart 12 show that the total cost of production generally declines as herd size increases because the cost of operator's resources are spread over more units of production.

Table 34.

FARM COST OF PRODUCING MILK BY HERD SIZE
314 New York Dairy Farms, 1999

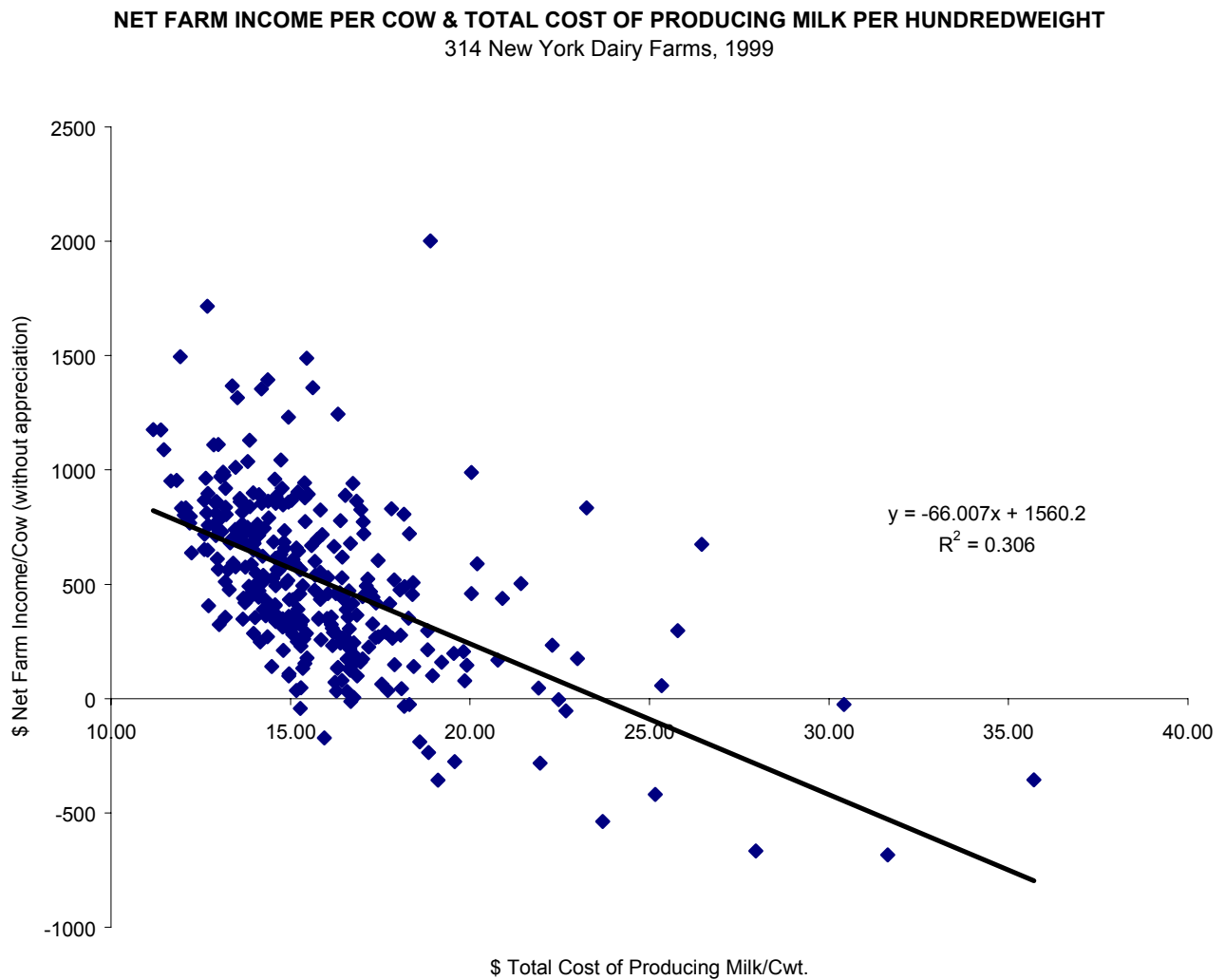
| Number of Cows | Cost per Hundredweight | | | | | Accrual Receipts From Milk | Return Per Cwt. To Operator's Labor, Mgmt. & Capital |
|----------------|------------------------|------------------------|--------------------|---------------------|---------|----------------------------------|---|
| | Operating Costs | | | Purchased Inputs | Total | | |
| | Hired Labor | Dairy Grain & Conc. | Total Operating | | | | |
| Under 50 | \$0.50 | \$3.47 | \$9.97 | \$11.68 | \$18.36 | \$14.85 | \$2.28 |
| 50 to 74 | 0.94 | 3.53 | 10.42 | 11.77 | 16.68 | 14.71 | 2.34 |
| 75 to 99 | 1.06 | 3.60 | 10.62 | 11.92 | 15.81 | 14.81 | 2.47 |
| 100 to 149 | 1.27 | 3.70 | 11.26 | 12.45 | 15.70 | 14.88 | 2.13 |
| 150 to 199 | 1.98 | 3.61 | 11.36 | 12.58 | 15.16 | 14.91 | 2.27 |
| 200 to 299 | 1.88 | 3.73 | 11.16 | 12.30 | 14.29 | 15.05 | 2.65 |
| 300 to 399 | 2.26 | 3.60 | 11.33 | 12.37 | 13.88 | 14.70 | 2.30 |
| 400 to 599 | 2.40 | 3.79 | 11.66 | 12.87 | 14.30 | 14.98 | 2.07 |
| 600 and over | 2.65 | 3.85 | 11.14 | 12.17 | 13.29 | 14.92 | 2.74 |

Chart 12.



The importance of cost control and its impact on farm profitability are illustrated in Chart 13. As the total cost of producing milk per hundredweight increased, net farm income per cow fell. All farms had a positive net farm income per cow until the total cost of producing milk exceeded \$15 per hundredweight. The majority of the farms with costs greater than \$22 per hundredweight experienced negative net farm incomes per cow.

Chart 13.



Cost of Producing Milk (continued)

A 10-year comparison of the average costs and returns of producing milk per hundredweight are presented in Table 35 on page 36. Average individual operating and overhead expenses per hundredweight of milk sold are reported on all specialized dairy farms included in the New York State Summary from 1990 through 1999. In 1999 the average operating cost of producing milk decreased 5 percent after decreasing 2 percent from 1997 to 1998. The average return per hundredweight to operator labor, management, and capital fell to \$2.70 in 1999, 7 percent below 1998.

Hired labor expense per hundredweight has increased consistently from 1990 to 1999. Hired labor expense was \$1.77 in 1990 and has risen to \$2.14 in 1999. Thus, even as pounds of milk sold per worker have increased from 563,349 in 1990 to 839,432 in 1999; labor expense per worker has increased even more rapidly. Some of this effect is due to increasing farm size where a larger portion of the labor force is comprised of hired workers. Purchased feed expense per hundredweight of milk has been remarkably stable. At \$4.28 in 1990, it decreased to a low of \$3.71 in 1995, before reaching its high a year later at \$4.73. In 1999, purchased feed expense was \$0.32 lower than in 1990.

Interest paid on debt per hundredweight of milk sold has decreased over this period. In 1990, interest expense was \$1.05 per cwt. While it reached a low of \$0.80 in 1993, interest expense was at \$0.83 in 1999. Property taxes per hundredweight of milk have decreased by over 40 percent during this ten-year period. Property taxes were \$0.37 per hundredweight in 1990, but were only \$0.21 in 1999. This is due to productivity increases and more of the land resources being rented, rather than owned.

A 10-year comparison of selected average business factors for all specialized DFBS farms is presented in Table 36 on page 37. Average cow numbers are up 109 percent, tillable acres have increased 59 percent, and milk sold per farm has jumped 152 percent since 1990. Capital investment per cow has decreased 3 percent, far less than inflation, over the last 10 years. Labor and management income per operator decreased 23 percent in 1999 compared to 1998 and farm net worth continued to grow.

After being stable for many years, crop yields increased over the past ten years. Hay crop yields, tons of dry matter per acre increased from 2.7 to 2.9 tons per acre. Corn silage yields, as fed, increased from 14.4 to 16.3 tons per acre. As yields increased, fertilizer and lime expense increased only \$3.00 per tillable acre, from \$29 to \$32 per acre. Pounds of milk sold per cow increased by 21 percent, from 17,720 pounds in 1990 to 21,439 pounds in 1999.

Average number of workers per farm increased by two and operators/managers per farm increased by less than 0.4. Cows per worker equivalent increased from 32 in 1990 to 39 in 1999, but labor cost per cow increased from \$541 to \$653 over the same time period.

The asset turnover ratio has improved in recent years. Total accrual receipts as a proportion of total farm assets (asset turnover ratio) has increased from 0.48 in 1990 to 0.59 in 1999. Percent equity has deteriorated. It was 66 percent in 1990, but was down to 58 percent in 1999 because there are more large (higher leveraged) farms in the sample..

Table 35.

TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1990 to 1999

| Item | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|--|---------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| <u>Operating Expenses</u> | | | | | | | | | | |
| Hired labor | \$ 1.77 | \$ 1.74 | \$ 1.80 | \$ 1.86 | \$ 1.80 | \$1.78 | \$1.89 | \$1.97 | \$2.06 | \$2.14 |
| Purchased feed | 4.28 | 3.88 | 3.92 | 3.85 | 3.89 | 3.71 | 4.73 | 4.63 | 4.18 | 3.96 |
| Machinery repair, vehicle expense & rent | 1.11 | .93 | .97 | .93 | .92 | .85 | 1.02 | .94 | 1.12 | 1.18 |
| Fuel, oil & grease | .41 | .37 | .35 | .34 | .31 | .27 | .31 | .28 | .25 | .24 |
| Replacement livestock | .20 | .15 | .21 | .17 | .21 | .15 | .19 | .18 | .24 | .24 |
| Breeding fees | .19 | .18 | .18 | .19 | .17 | .15 | .15 | .15 | .16 | .17 |
| Veterinary & medicine | .32 | .33 | .35 | .37 | .40 | .39 | .42 | .41 | .45 | .47 |
| Milk marketing | .53 | .58 | .63 | .64 | .67 | .70 | .59 | .52 | .53 | .49 |
| Other dairy expenses | .68 | .65 | .70 | .72 | .88 | .92 | .99 | 1.05 | 1.09 | 1.13 |
| Lime & fertilizer | .50 | .40 | .37 | .36 | .33 | .31 | .32 | .33 | .35 | .35 |
| Seeds & plants | .22 | .20 | .21 | .20 | .19 | .19 | .20 | .21 | .22 | .20 |
| Spray & other crop expense | .22 | .20 | .21 | .20 | .20 | .20 | .21 | .23 | .24 | .24 |
| Land, building & fence repair | .32 | .19 | .24 | .21 | .21 | .16 | .23 | .19 | .27 | .27 |
| Taxes | .37 | .38 | .35 | .34 | .29 | .27 | .26 | .23 | .21 | .21 |
| Insurance | .24 | .23 | .22 | .20 | .18 | .17 | .18 | .16 | .17 | .16 |
| Utilities (farm share) | .39 | .39 | .38 | .39 | .38 | .38 | .39 | .35 | .32 | .31 |
| Interest paid | 1.05 | 1.07 | .88 | .80 | .81 | .94 | .91 | .90 | .89 | .83 |
| Misc. (including rent) | .47 | .43 | .44 | .41 | .40 | .40 | .41 | .38 | .41 | .44 |
| Total Operating Expenses | \$13.27 | \$12.30 | \$12.41 | \$12.18 | \$12.24 | \$11.94 | \$13.40 | \$13.12 | \$13.15 | \$13.02 |
| <u>Less:</u> Nonmilk cash receipts | 1.75 | 1.73 | 1.67 | 1.65 | 1.30 | 1.15 | 1.07 | 1.14 | 1.18 | 1.44 |
| Increase in grown feed & supplies | .26 | .04 | .23 | .13 | .25 | .14 | .15 | .07 | .25 | .26 |
| Increase in livestock | .15 | .18 | .08 | .22 | .21 | .25 | .18 | .15 | .22 | .36 |
| OPERATING COST OF MILK PRODUCTION | \$11.11 | \$10.35 | \$10.43 | \$10.18 | \$10.47 | \$10.40 | \$12.00 | \$11.76 | \$11.50 | \$10.96 |
| <u>Overhead Expenses</u> | | | | | | | | | | |
| Depreciation: machinery & buildings | \$1.35 | \$ 1.28 | \$ 1.19 | \$ 1.17 | \$ 1.13 | \$1.07 | \$1.04 | \$0.95 | \$1.08 | \$1.14 |
| Unpaid labor | .19 | .18 | .16 | .15 | .12 | .12 | .13 | .13 | .11 | .11 |
| Operator(s) labor * | 1.10 | 1.06 | .99 | 1.00 | .86 | .92 | .88 | .79 | .74 | .80 |
| Operator(s) management (5% of cash receipts) | .85 | .73 | .76 | .74 | .73 | .70 | .80 | .73 | .82 | .83 |
| Interest on farm equity capital (5%) | 1.24 | 1.20 | 1.11 | 1.11 | 1.00 | .94 | .94 | .87 | .85 | .86 |
| Total Overhead Expenses | \$ 4.73 | \$ 4.45 | \$ 4.21 | \$ 4.17 | \$ 3.84 | \$ 3.75 | \$3.79 | \$3.47 | \$3.60 | 3.74 |
| TOTAL COST OF MILK PRODUCTION | \$15.84 | \$14.80 | \$14.64 | \$14.35 | \$14.31 | \$14.15 | \$15.79 | \$15.23 | \$15.10 | 14.70 |
| AVERAGE FARM PRICE OF MILK | \$14.93 | \$12.95 | \$13.58 | \$13.14 | \$13.44 | \$13.03 | \$14.98 | \$13.65 | \$15.60 | 14.91 |
| Return per cwt. to operator labor, capital & mgmt. | \$ 2.28 | \$ 1.14 | \$ 1.80 | \$ 1.64 | \$ 1.72 | \$ 1.44 | \$ 1.81 | \$ 0.81 | \$2.91 | \$2.70 |
| Rate of return on farm equity capital | 1.3% | -2.7% | 0.2% | -0.4% | 0.6% | -1.0% | 0.7% | -4.1% | 8.0% | 6.2% |

*1990 = \$1,250/month, 1991 = \$1,300/month, 1992 = \$1,350/month, 1993 = \$1,400/month, 1994 and 1995 = \$1,450/month, 1996 = \$1,500/month, 1997 = \$1,550/month, 1998 = \$1,600/month and 1999 = \$1,800/month of operator labor.

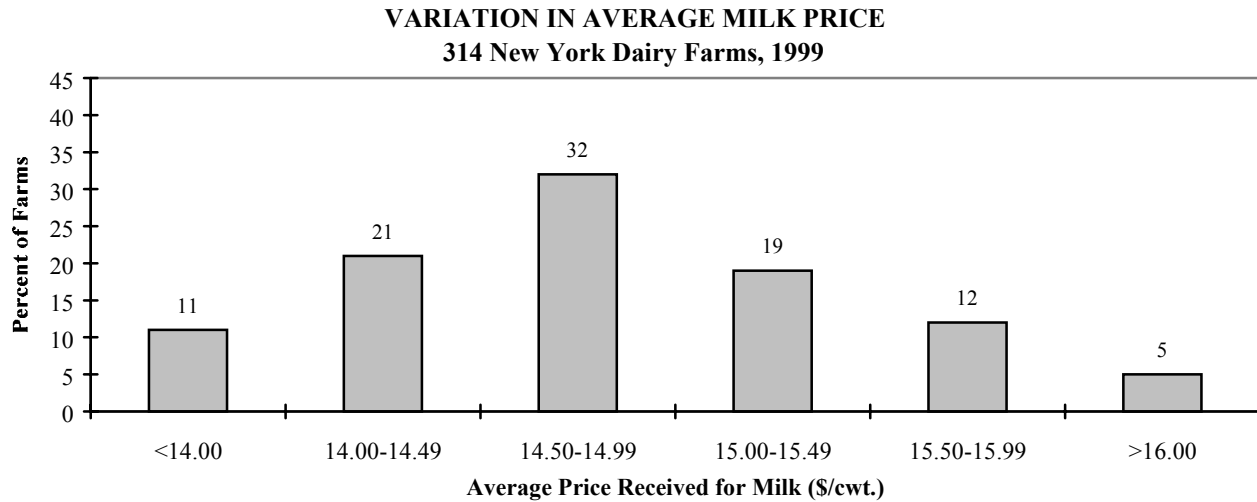
Table 36.

TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1990 to 1999

| Item | 1990 | 1991 | 1992 | 1993 | 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|---|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|-----------|
| Number of farms | 395 | 407 | 357 | 343 | 321 | 321 | 300 | 253 | 305 | 314 |
| <u>Cropping Program</u> | | | | | | | | | | |
| Total tillable acres | 325 | 330 | 346 | 351 | 392 | 399 | 415 | 462 | 497 | 516 |
| Tillable acres rented | 121 | 124 | 135 | 135 | 159 | 166 | 183 | 207 | 232 | 234 |
| Hay crop acres | 166 | 169 | 171 | 182 | 195 | 197 | 198 | 219 | 239 | 248 |
| Corn silage acres | 82 | 88 | 98 | 96 | 110 | 117 | 120 | 156 | 175 | 186 |
| Hay crop, tons DM/acre | 2.7 | 2.4 | 2.8 | 2.7 | 3.0 | 2.8 | 2.8 | 2.5 | 3.1 | 2.9 |
| Corn silage, tons/acre | 14.4 | 13.7 | 14.5 | 14.9 | 16.4 | 15.6 | 15.9 | 16.1 | 18.0 | 16.3 |
| Fert. & lime exp./tillable acre | \$29 | \$25 | \$25 | \$25 | \$25 | \$25 | \$26 | \$28 | \$31 | \$32 |
| Machinery cost/cow | \$483 | \$438 | \$444 | \$430 | \$438 | \$402 | \$450 | \$429 | \$471 | \$502 |
| <u>Dairy Analysis</u> | | | | | | | | | | |
| Number of cows | 107 | 111 | 123 | 130 | 151 | 160 | 167 | 190 | 210 | 224 |
| Number of heifers | 87 | 92 | 96 | 100 | 116 | 121 | 124 | 139 | 155 | 164 |
| Milk sold, cwt. | 19,005 | 20,060 | 23,130 | 24,448 | 30,335 | 32,362 | 33,504 | 39,309 | 43,954 | 47,932 |
| Milk sold/cow, lbs. | 17,720 | 18,027 | 18,789 | 18,858 | 20,091 | 20,269 | 20,113 | 20,651 | 20,900 | 21,439 |
| Purchased dairy feed/cwt. milk | \$4.27 | \$3.87 | \$3.91 | \$3.85 | \$3.89 | \$3.70 | \$4.73 | \$4.63 | \$4.18 | \$3.96 |
| Purc. grain & conc. as % of milk receipts | 28% | 29% | 28% | 29% | 28% | 27% | 30% | 33% | 26% | 25% |
| Purc. feed & crop exp/cwt. milk | \$5.21 | \$4.67 | \$4.70 | \$4.61 | \$4.61 | \$4.39 | \$5.46 | \$5.39 | \$5.00 | \$4.75 |
| <u>Capital Efficiency</u> | | | | | | | | | | |
| Farm capital/cow | \$6,556 | \$6,688 | \$6,587 | \$6,462 | \$6,398 | \$6,264 | \$6,218 | \$6,196 | \$6,161 | \$6,368 |
| Real estate/cow | \$2,977 | \$3,063 | \$3,015 | \$2,932 | \$2,859 | \$2,763 | \$2,701 | \$2,650 | 2,537 | 2,562 |
| Mach. invest./cow | \$1,233 | \$1,267 | \$1,203 | \$1,165 | \$1,150 | \$1,098 | \$1,107 | \$1,108 | 1,118 | 1,163 |
| Asset turnover ratio | .48 | .43 | .47 | .46 | .50 | .49 | .55 | .52 | 0.61 | 0.59 |
| <u>Labor Efficiency</u> | | | | | | | | | | |
| Worker equivalent | 3.37 | 3.38 | 3.60 | 3.68 | 4.02 | 4.40 | 4.48 | 5.01 | 5.35 | 5.71 |
| Operator/manager equivalent | 1.39 | 1.37 | 1.41 | 1.45 | 1.49 | 1.56 | 1.56 | 1.60 | 1.62 | 1.76 |
| Milk sold/worker, lbs. | 563,349 | 593,297 | 641,893 | 664,868 | 755,178 | 736,269 | 747,861 | 784,604 | 821,565 | 839,432 |
| Cows/worker | 32 | 33 | 34 | 35 | 38 | 36 | 37 | 38 | 39 | 39 |
| Labor cost/cow | \$541 | \$538 | \$552 | \$568 | \$558 | \$570 | \$582 | \$598 | \$609 | \$653 |
| <u>Profitability & Financial Analysis</u> | | | | | | | | | | |
| Labor & mgmt. income/operator | \$14,328 | \$-955 | \$11,254 | \$9,000 | \$14,789 | \$10,346 | \$18,651 | \$-1,424 | \$55,917 | \$42,942 |
| Farm net worth, end year | \$471,322 | \$480,131 | \$515,215 | \$542,126 | \$608,749 | \$624,261 | \$648,186 | \$685,665 | \$798,297 | \$865,626 |
| Percent equity | 66% | 64% | 64% | 65% | 63% | 61% | 61% | 57% | 59% | 58% |

The average or mean price per hundredweight of milk sold is calculated by dividing gross milk receipts by total pounds of milk sold. The average price for the 314 farms was \$14.91 but there was considerable variation among the individual farms. The variation in average price received and the distribution of farms around the mean is shown below.

Chart 14.



Fifty-one percent of the farms received from \$14.50 to \$15.49 per hundredweight of milk sold. Seventeen percent of the farms received \$15.50 or more and 32 percent received less than \$14.50 per hundredweight. Location and organization of markets are factors contributing to the difference in average milk prices on these dairy farms. Management practices on farms as well as in milk companies also affect farm milk prices. Seasonality of production and butterfat content are two variables that affect milk price. Butterfat content, which ranges from an average 3.6 percent to 3.9 percent as the milk price increases from less than \$14.50 per cwt. to more than \$16.00, explains a small portion of the difference in milk price on these farms.

The accrual operating expenses most commonly associated with the dairy enterprise are listed in the table below. Evaluating these costs per unit of production enables the comparison of different size dairy farms for strengths and areas for improvement.

Table 37.

DAIRY RELATED ACCRUAL EXPENSES
314 New York Dairy Farms, 1999

| Item | Average 314 Farms | | Average Top 10% Farms* | |
|---|-------------------|----------|------------------------|----------|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| Purchased dairy grain & concentrate | \$800 | \$3.74 | \$880 | \$3.75 |
| Purchased dairy roughage | 48 | .22 | 68 | .29 |
| Total Purchased Dairy Feed | \$848 | \$3.96 | \$948 | \$4.04 |
| Purchased grain & concentrate as % of milk receipts | | 25% | | 25% |
| Purchased feed & crop expense | \$1,016 | \$4.75 | \$1,087 | \$4.63 |
| Purchased feed & crop expense as % of milk receipts | | 32% | | 31% |
| Breeding | \$36 | \$.17 | \$38 | \$.16 |
| Veterinary & medicine | 101 | .47 | 114 | .48 |
| Milk marketing | 105 | .49 | 93 | .39 |
| Bedding | 41 | .19 | 55 | .24 |
| Milking Supplies | 72 | .34 | 64 | .27 |
| Cattle lease | 11 | .05 | 23 | .10 |
| Custom boarding | 32 | .15 | 54 | .23 |
| bST expense | 52 | .24 | 62 | .27 |
| Other livestock expense | 34 | .16 | 21 | .09 |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

Feed costs per cow and per hundredweight of milk sold are influenced by a number of factors. These cost measures are affected by the amount of homegrown grains fed, quality and quantity of the roughage harvested, and the number of youngstock. Feed costs are also influenced by the farmer's ability to purchase grains and concentrates at reasonable prices and to balance nutrients fed with energy and protein requirements.

Purchased dairy grain and concentrates per cow is calculated by dividing the total accrual expenses for dairy grains and concentrates purchased by the average number of cows. Because this also included the amount spent for calf and heifer feed, it actually represents the feed cost for one cow and 0.73 replacement being raised.

Purchased feed and crop expense per hundredweight of milk is one of the most useful feed cost measures because it accounts for some of the variations in feeding and cropping programs, and milk production between herds. It includes all purchased feeds used on the farm, and it includes crop expenses that are associated with feed production. It does not represent total feed costs because machinery, labor and other costs are excluded.

Purchased grain and concentrates as percent of milk sales is calculated by dividing feed purchased by milk receipts. This is another useful measure of feed efficiency although variations in homegrown grains fed, heifers fed, and milk prices can have an impact. Purchased feed and crop expense as percent of milk sales removes much of the variation caused by the feeding of home grown grains.

Cost control has an important affect on farm profitability. The relationship between purchased feed and crop expense per hundredweight of milk and farm profitability is shown in the following table.

Table 38.

**PURCHASED FEED AND CROP EXPENSE PER HUNDREDWEIGHT
OF MILK AND FARM INCOME MEASURES
314 New York Dairy Farms, 1999**

| Feed & Crop Exp. Per Cwt. of Milk | Number of Farms | Number of Cows | Forage Dry Matter Harvested Per Cow | Pounds Milk Per Cow | Net Farm Income Without Apprec. | Labor & Management Income Per Operator | Labor & Management Per Operator Per Cow |
|---|-----------------------|----------------------|--|---------------------------|--|---|--|
| \$6.00 or more | 31 | 113 | 7.2 | 17,183 | \$32,959 | \$5,575 | \$49 |
| 5.50 to 5.99 | 30 | 175 | 6.5 | 19,126 | \$62,260 | \$22,231 | 127 |
| 5.00 to 5.49 | 55 | 277 | 8.1 | 21,459 | \$132,967 | \$43,069 | 155 |
| 4.50 to 4.99 | 82 | 275 | 8.4 | 22,244 | \$161,924 | \$56,357 | 205 |
| 4.00 to 4.49 | 57 | 270 | 7.9 | 22,231 | \$164,458 | \$60,078 | 223 |
| 3.50 to 3.99 | 32 | 175 | 7.1 | 21,299 | \$115,756 | \$53,137 | 304 |
| Less than 3.50 | 27 | 99 | 7.2 | 20,386 | \$67,249 | \$20,814 | 210 |

On average, farms with feed and crop expenses exceeding \$5.50 per hundredweight of milk reported well below average profits. This is especially striking when the profit measure of labor and management income per operator is presented on a per cow basis. Farms reporting purchased feed and crop expense between \$3.50 and \$3.99 per hundredweight of milk, reported the highest labor and management income per operator per cow.

Capital and Labor Efficiency Analysis

Capital efficiency factors measure how intensively capital is being used in the farm business. Measures of labor efficiency are key indicators of the work accomplished by each worker.

Table 39.

| CAPITAL EFFICIENCY 314 New York Dairy Farms, 1999 | | | | |
|--|-------------------|------------------|-------------------|-------------------------|
| Item (Average for Year) | Per Worker | Per Cow | Per Tillable Acre | Per Tillable Acre Owned |
| Farm capital | \$249,829 | \$6,368 | \$2,765 | \$5,059 |
| Real estate | | \$2,562 | | \$2,035 |
| Machinery & equipment | \$45,615 | \$1,163 | \$505 | |
| <u>Ratios</u> | | | | |
| Asset turnover | Operating Expense | Interest Expense | | Depreciation Expense |
| 0.59 | 0.73 | 0.05 | | 0.07 |
| <u>Average Top 10% Farms:*</u> | | | | |
| Farm capital | \$261,508 | \$5,392 | \$3,030 | \$5,667 |
| Real estate | | \$1,899 | | \$1,996 |
| Machinery & equipment | \$45,688 | \$942 | \$529 | |
| <u>Ratios</u> | | | | |
| Asset turnover ratio | Operating Expense | Interest Expense | | Depreciation Expense |
| 0.75 | 0.70 | 0.04 | | 0.06 |

*Average of 31 farms with highest rates of return to all capital (without appreciation).

Asset turnover ratio measures the relationship between capital investment and farm receipts. It is computed by dividing the year's total farm accrual receipts including appreciation by the average farm assets. The relationship the asset turnover ratio has to farm profitability and other factors is shown in the following table. As a general rule, dairy farmers should aim for an asset turnover ratio of 0.6 or higher. The operational ratios reflect the relationship of expense categories to total farm receipts. The sum of the operating, interest, and depreciation expense ratios expresses total farm expenses per dollar of total farm receipts.

Table 40.

| ASSET TURNOVER AND PROFITABILITY 314 New York Dairy Farms, 1999 | | | | | | |
|--|--------------|-------------|------------------------------------|------------|-----------------------------------|-------------------------------------|
| Ratio | No. of Farms | No. of Cows | Farm Capital (average for year) | | Labor & Mgt. Inc. Per Operator | Net Farm Income (w/o apprec.) |
| | | | Per Cow | Per Worker | | |
| ≥ .80 | 17 | 432 | \$4,357 | \$203,698 | \$147,701 | \$304,985 |
| .70 to .79 | 39 | 434 | 5,410 | 227,964 | 96,969 | 241,466 |
| .60 to .69 | 50 | 296 | 6,098 | 246,911 | 53,060 | 158,187 |
| .50 to .59 | 66 | 249 | 6,751 | 272,879 | 48,938 | 138,547 |
| .40 to .49 | 70 | 130 | 7,663 | 263,550 | 13,530 | 59,654 |
| .30 to .39 | 48 | 88 | 9,240 | 272,871 | 3,594 | 43,170 |
| Less than .30 | 24 | 55 | 10,912 | 274,035 | -7,426 | 19,633 |

The 31 farms with the highest rates of return on all capital (without appreciation) were above the average of all 314 farms in 2 measures of labor efficiency. The top 10 percent averaged 10 more cows per worker and sold 36 percent more milk per worker than the average of all farms.

Table 41.

| LABOR EFFICIENCY 314 New York Dairy Farms, 1999 | | | | |
|--|---------------|-------------|-----------------------|-------------|
| Labor Efficiency | Average Farms | | Average Top 10% Farms | |
| | Total | Per Worker* | Total | Per Worker* |
| Cows, average number | 224 | 39 | 598 | 49 |
| Milk sold, pounds | 4,793,159 | 839,432 | 14,027,628 | 1,137,683 |
| Tillable acres | 516 | 90 | 1,064 | 86 |

*The method used to calculate worker equivalent incorporates the number of hours actually worked by the owner/operators instead of using a standard 12 months for each full-time owner/operator of the business.

The labor force averaged 5.71 full-time worker equivalents per farm (based on 230 hours per month). Thirty-one percent of the labor was supplied by the farm operator/managers. There were two operators on 142 farms, three on 40 farms, and 12 farms reported four or more operators.

Labor costs, labor efficiency, and farm profitability are closely related. Farms with high rates of return can attribute some of their success to the control of labor and machinery costs. Labor and machinery costs average \$86 per cow and \$0.85 per cwt. less on the 31 farms in the top decile.

Table 42.

LABOR FORCE INVENTORY AND COST ANALYSIS
314 New York Dairy Farms, 1999

| Labor Force | Months* | Age | Years of Education | Value of Labor & Management | |
|--|--------------------------|------------|----------------------------------|--------------------------------|-------------|
| Operator number 1 | 13.8 | 46 | 13 | \$29,911 | |
| Operator number 2 | 5.6 | 43 | 13 | 12,366 | |
| Operator number 3 | 1.5 | 39 | 13 | 3,670 | |
| Operator number 4 | 0.5 | 28 | 11 | <u>1,121</u> | |
| Family paid | 4.8 | | | Total \$47,068 | |
| Family unpaid | 3.0 | | | | |
| Hired | <u>39.2</u> | | | | |
| Total | 68.5 | ÷ 12 = | 5.71 Worker Equivalent | | |
| | | | 1.76 Operator/Manager Equivalent | | |
| <u>Average Top 10% Farms:**</u> | | | | | |
| Total | 148.0 | ÷ 12 = | 12.33 Worker Equivalent | | |
| Operators' | | | 1.68 Operator/Manager Equivalent | | |
| | <u>Average 314 Farms</u> | | | <u>Avg. Top 10% Farms**</u> | |
| | | Per | Per | | |
| Labor Costs | Total | Cow | Cwt. | Per Cow | Per Cwt. |
| Value operators' labor (\$1,800/mo.) | \$ 38,520 | \$ 172 | \$.80 | \$ 66 | \$.28 |
| Family unpaid (\$1,800/mo.) | 5,400 | 24 | .11 | 6 | .02 |
| Hired | <u>102,335</u> | <u>457</u> | <u>2.14</u> | <u>554</u> | <u>2.36</u> |
| Total Labor | \$146,335 | \$ 653 | \$ 3.05 | \$ 626 | \$ 2.66 |
| Machinery Cost | <u>112,450</u> | <u>502</u> | <u>2.35</u> | <u>444</u> | <u>1.89</u> |
| Total Labor & Machinery | \$258,705 | \$ 1,155 | \$ 5.40 | \$1,069 | \$ 4.55 |
| Hired labor exp. per hired worker equiv. | 27,910 | | | 32,004 | |
| Hired labor exp. as % of milk sales | 14.3% | | | 15.8% | |

*See footnote for Table 41.

**Average of 31 farms with highest rates of return to all capital (without appreciation).

The relationship of labor efficiency to net farm income is positive on the farms. The higher outputs of milk sold per worker are partially attributable to more and higher producing cows.

Table 43.

MILK SOLD PER WORKER AND NET FARM INCOME
314 New York Dairy Farm, 1999

| Pounds of Milk Sold Per Worker | No. of Farms | No. of Cows | Pounds of Milk Per Cow | Net Farm Income (w/o apprec.) | Labor & Mgmt. Income Per Operator |
|--------------------------------|--------------|-------------|------------------------|-------------------------------|-----------------------------------|
| Under 400,000 | 53 | 58 | 16,308 | \$25,683 | \$478 |
| 400,000 to 499,999 | 28 | 79 | 17,194 | 32,480 | 2,597 |
| 500,000 to 599,999 | 33 | 98 | 17,444 | 42,113 | 7,403 |
| 600,000 to 699,999 | 50 | 162 | 19,886 | 83,472 | 26,049 |
| 700,000 to 799,999 | 44 | 175 | 20,850 | 83,871 | 27,459 |
| 800,000 to 899,999 | 33 | 258 | 21,339 | 131,007 | 37,727 |
| 900,000 to 999,999 | 25 | 459 | 22,102 | 187,982 | 56,198 |
| 1,000,000 & over | 48 | 540 | 23,300 | 371,407 | 154,872 |

Farm Business Charts

The Farm Business Chart is a tool which can be used in analyzing a business by drawing a line through the figure in each column which represents the current level of management performance. The figure at the top of each column is the average of the top 10 percent of the 314 farms for that factor. The other figures in each column are the average for the second 10 percent, third 10 percent, etc. Each column of the chart is independent of the others. The farms which are in the top 10 percent for one factor would not necessarily be the same farms which make up the 10 percent for any other factor.

The cost control factors are ranked from low to high, but the lowest cost is not necessarily the most profitable. In some cases, the "best" management position is somewhere near the middle or average. Many things affect the level of costs, and must be taken into account when analyzing the factors.

Table 44.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS 314 New York Dairy Farms, 1999

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|----------------------------|-----------------------------------|-------------------------------|---------------------------------------|------------------------------------|--|-----------------------|-----------------------------------|
| Worker Equiv- alent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| 18.6 | 851 | 19,987,607 | 25,069 | 5.3 | 23 | 55 | 1,213,661 |
| 9.9 | 418 | 9,126,584 | 23,355 | 4.0 | 20 | 47 | 1,009,282 |
| 7.0 | 279 | 5,925,301 | 22,344 | 3.4 | 19 | 44 | 888,653 |
| 5.3 | 198 | 3,903,863 | 21,492 | 3.0 | 17 | 40 | 798,241 |
| 4.2 | 145 | 2,857,909 | 20,435 | 2.6 | 16 | 37 | 731,684 |
| <hr/> | | | | | | | |
| 3.5 | 111 | 2,145,630 | 19,413 | 2.3 | 15 | 34 | 660,719 |
| 3.0 | 87 | 1,605,859 | 18,334 | 2.0 | 14 | 31 | 597,681 |
| 2.5 | 71 | 1,261,635 | 17,209 | 1.7 | 12 | 28 | 493,858 |
| 2.0 | 56 | 1,003,180 | 15,764 | 1.5 | 10 | 24 | 390,912 |
| 1.4 | 40 | 588,644 | 12,475 | 1.0 | 8 | 18 | 281,530 |
| <hr/> | | | | | | | |
| Cost Control | | | | | | | |
| Grain Bought Per Cow | % Grain is of Milk Receipts | Machinery Costs Per Cow | Labor & Machinery Costs Per Cow | Feed & Crop Expenses Per Cow | Feed & Crop Expenses Per Cwt. Milk | | |
| \$365 | 15% | \$278 | \$778 | \$506 | \$3.25 | | |
| 519 | 20 | 381 | 933 | 703 | 3.81 | | |
| 590 | 22 | 427 | 1,028 | 805 | 4.25 | | |
| 653 | 23 | 463 | 1,111 | 866 | 4.48 | | |
| 700 | 24 | 504 | 1,164 | 921 | 4.67 | | |
| <hr/> | | | | | | | |
| 743 | 25 | 541 | 1,223 | 971 | 4.88 | | |
| 793 | 27 | 582 | 1,299 | 1,021 | 5.05 | | |
| 852 | 28 | 624 | 1,398 | 1,089 | 5.29 | | |
| 916 | 30 | 701 | 1,540 | 1,163 | 5.71 | | |
| 1,036 | 37 | 845 | 1,847 | 1,300 | 6.78 | | |

The next section of the Farm Business Chart provides for comparative analysis of the value and costs of dairy production.

provides for comparative analysis of the value and costs of

The profitability section shows the variation in farm income by decile and enables a dairy farmer to determine where he or she ranks by using several measures of farm profitability. Remember that each column is independently established and the farms making up the top decile in the first column will not necessarily be on the top of any other column. The dairy farmer who ranks at or near the top of most of these columns is in a very enviable position.

Table 44. (continued)

**FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS
314 New York Dairy Farms, 1999**

| Milk Receipts Per Cow | Milk Receipts Per Cwt. | Oper. Cost Milk Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cow | Total Cost Production Per Cwt. | |
|---|---------------------------|-------------------------------|--------------------------------------|-------------------------------------|--------------------------------------|-----------------|
| \$3,817 | \$16.50 | \$1,200 | \$7.89 | \$2,176 | \$12.45 | |
| 3,461 | 15.56 | 1,635 | 9.24 | 2,532 | 13.42 | |
| 3,293 | 15.27 | 1,832 | 9.90 | 2,752 | 13.97 | |
| 3,160 | 15.05 | 1,998 | 10.35 | 2,864 | 14.48 | |
| 3,046 | 14.86 | 2,137 | 10.78 | 2,987 | 14.98 | |
| <hr/> | | | | | | |
| 2,908 | 14.73 | 2,262 | 11.20 | 3,101 | 15.43 | |
| 2,743 | 14.58 | 2,367 | 11.66 | 3,211 | 16.16 | |
| 2,529 | 14.39 | 2,479 | 12.10 | 3,306 | 16.79 | |
| 2,320 | 14.12 | 2,636 | 12.76 | 3,459 | 17.98 | |
| 1,838 | 13.61 | 2,955 | 14.43 | 3,867 | 22.84 | |
| <hr/> | | | | | | |
| Profitability | | | | | | |
| Net Farm Income Without Appreciation | | | Net Farm Income With Appreciation | | Labor & Management Income | |
| Total | Per Cow | Operations Ratio | Total | Per Cow | Per Farm | Per Operator |
| \$578,366 | \$1,174 | 0.33 | \$668,929 | \$1,351 | \$454,170 | \$318,071 |
| 222,031 | 863 | 0.25 | 270,325 | 1,035 | 150,302 | 88,408 |
| 136,405 | 763 | 0.22 | 180,888 | 922 | 82,986 | 54,378 |
| 96,263 | 663 | 0.19 | 124,395 | 824 | 54,339 | 39,122 |
| 74,615 | 550 | 0.17 | 91,554 | 697 | 38,704 | 26,018 |
| <hr/> | | | | | | |
| 56,349 | 464 | 0.14 | 69,234 | 615 | 25,330 | 15,699 |
| 39,420 | 376 | 0.11 | 53,026 | 520 | 13,406 | 9,369 |
| 26,824 | 290 | 0.09 | 38,225 | 405 | 1,342 | 876 |
| 15,421 | 173 | 0.16 | 26,086 | 282 | -11,196 | -10,038 |
| -10,114 | -114 | -0.06 | 4,679 | 12 | -42,427 | -38,149 |

Farm Business Charts for farms with freestall barns and 150 cows or less, 150 to 300 cows, and more than 300 cows, and farms with conventional barns with 60 cows or less and more than 60 cows are discussed in the supplemental section on pages 61-65.

Financial Analysis and Management

Analysis and astute management of farm financial affairs must receive high priority if the farm business is to be successful and if the farm family is to achieve a reasonable living standard.

The farm finance checklist and the financial analysis chart are provided to serve as guidelines. Dairy farmers can determine how their financial management measures up by comparing with average data from other farms.

Table 45.

A FARM FINANCE CHECKLIST 314 New York Dairy Farms, 1999

| | Average 314 Farms | | Average Top 10% Farms* | |
|---|-------------------|----------------|------------------------|----------------|
| <u>How farm assets are being used (average for the year):</u> | | | | |
| Total assets (capital) per cow | \$6,368 | | \$5,392 | |
| Farm assets in livestock | 24% | | 27% | |
| Farm assets in farm real estate | 40% | | 35% | |
| Farm assets in machinery | 18% | | 17% | |
| <u>Measures of debt capacity & debt structure:</u> | | | | |
| Equity in the business | 58% | | 53% | |
| Farm debt per cow | \$2,702 | | \$2,605 | |
| Long term debt/asset ratio** | 0.40 | | 0.47 | |
| Intermediate & current term debt/asset ratio** | 0.43 | | 0.46 | |
| Intermediate & current term debt as % of total | 62% | | 64% | |
| <u>Debt repayment ability:***</u> | | | | |
| Cash flow coverage ratio | 1.31 | | 1.63 | |
| Debt coverage ratio | 1.60 | | 2.39 | |
| Debt payments made per cow | \$582 | | \$489 | |
| Debt payments made as % of milk receipts | 18% | | 14% | |
| <u>Indicators of annual financial progress:</u> | | | | |
| | <u>Amount</u> | <u>Percent</u> | <u>Amount</u> | <u>Percent</u> |
| Annual change in farm assets | \$126,343 | +9.3% | +\$501,757 | +16.9% |
| Annual change in farm debts | +\$44,351 | +7.7% | +\$150,834 | +10.3% |
| Annual change in farm net worth | \$81,992 | +10.5% | +\$350,923 | +23.3% |

*Thirty farms with highest rates of return on all capital (without appreciation).

**Long or intermediate and current term debt divided by long or intermediate and current term assets.

***Average of 248 farms that participated in DFBS both in 1998 and 1999. Twenty-six of the 31 top 10 percent farms participated both years.

The most profitable farms carried \$97 less debt per cow, the average equity in their businesses was 5 percent lower than that of the average of all 314 farms, but they had a greater ability to make 1999 debt payments.

Average farm assets grew 1.6 percentage points faster than debt during 1999 on the 314 dairy farms. Average farm net worth increased 10.5 percent.

The farm financial analysis chart is designed just like the farm business chart on pages 42-43 and may be used to measure the financial health of the farm business. Most of the financial measures are defined on pages 12, 14, 16, 20, and 40 in this publication.

Table 46.

FINANCIAL ANALYSIS CHART
314 New York Dairy Farms, 1999

| Liquidity (repayment) | | | | | | | |
|-------------------------------|------------------------------------|------------------------------|---------------------------|--|--------------------------|--|---------------|
| Planned Debt Payments Per Cow | Available for Debt Service Per Cow | Cash Flow Coverage Ratio | Debt Coverage Ratio | Debt Payments as Percent of Milk Sales | Debt Per Cow | Working Capital as % of Total Expenses | Current Ratio |
| \$128 | \$1,177 | 5.71 | 7.13 | 4% | \$217 | 57% | 30.96 |
| 247 | 868 | 2.38 | 2.84 | 8 | 929 | 34 | 5.03 |
| 333 | 757 | 1.88 | 2.19 | 11 | 1,464 | 27 | 3.54 |
| 383 | 675 | 1.61 | 1.75 | 13 | 1,862 | 22 | 2.73 |
| 430 | 599 | 1.38 | 1.52 | 14 | 2,343 | 18 | 2.10 |
| 476 | 546 | 1.17 | 1.28 | 16 | 2,758 | 13 | 1.71 |
| 521 | 486 | 1.04 | 1.10 | 18 | 3,067 | 9 | 1.45 |
| 581 | 406 | 0.89 | 0.94 | 21 | 3,426 | 5 | 1.20 |
| 710 | 300 | 0.70 | 0.73 | 24 | 3,882 | -2 | 0.91 |
| 922 | 69 | 0.29 | 0.31 | 37 | 5,125 | -17 | 0.55 |
| Solvency | | | | Profitability | | | |
| Leverage Ratio* | Percent Equity | Debt/Asset Ratio | | Percent Rate of Return with appreciation on: | | Investment** | |
| | | Current & Intermediate | Long Term | Equity | | | |
| 0.06 | 98% | 0.03 | 0.00 | 36% | | 19% | |
| 0.17 | 88 | 0.11 | 0.00 | 19 | | 14 | |
| 0.29 | 80 | 0.19 | 0.04 | 14 | | 11 | |
| 0.40 | 73 | 0.26 | 0.18 | 11 | | 9 | |
| 0.56 | 66 | 0.33 | 0.29 | 8 | | 8 | |
| 0.70 | 60 | 0.39 | 0.38 | 6 | | 6 | |
| 0.90 | 54 | 0.47 | 0.46 | 3 | | 4 | |
| 1.13 | 48 | 0.55 | 0.56 | 0 | | 3 | |
| 1.50 | 40 | 0.64 | 0.73 | -3 | | 0 | |
| 3.91 | 23 | 0.88 | 1.19 | -31 | | -5 | |
| Efficiency (Capital) | | | | | | | |
| Asset Turnover (ratio) | Real Estate Investment Per Cow | Machinery Investment Per Cow | Total Farm Assets Per Cow | Change in Net Worth w/Appreciation | Farm Net Worth, End Year | | |
| .85 | \$1,210 | \$527 | \$4,275 | \$449,790 | \$3,107,799 | | |
| .72 | 1,808 | 775 | 5,134 | 169,937 | 1,452,198 | | |
| .64 | 2,109 | 944 | 5,668 | 93,388 | 1,021,329 | | |
| .59 | 2,336 | 1,082 | 6,126 | 59,438 | 804,166 | | |
| .54 | 2,628 | 1,204 | 6,555 | 42,597 | 644,876 | | |
| .50 | 2,935 | 1,348 | 6,999 | 29,284 | 547,645 | | |
| .46 | 3,307 | 1,493 | 7,497 | 20,531 | 429,658 | | |
| .41 | 3,836 | 1,738 | 8,214 | 12,457 | 347,748 | | |
| .35 | 4,552 | 2,103 | 9,192 | 838 | 251,306 | | |
| .25 | 6,622 | 2,899 | 11,691 | -47,361 | 124,028 | | |

*Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

**Return on all farm capital (no deduction for interest paid) divided by total farm assets.

Herd Size Comparisons

The 314 New York dairy farms have been sorted into nine herd size categories and averages for the farms in each category are presented in Tables 47 through 51. Note that after the less than 50 cow category, the herd size categories increase by 25 cows up to 100 cows, by 50 cows up to 200 cows, by 100 cows up to 400 cows, and by 200 cows up to 600 cows.

As herd size increases, the average profitability generally increases (Table 47). Net farm income without appreciation averaged \$21,114 per farm for the less than 50 cow farms and \$639,672 per farm for those with 600 cows and over. This relationship generally holds for all measures of profitability including rate of return on capital.

It is more than size of herd that determines profitability on dairy farms. Farms with 600 and over cows averaged \$649 net farm income per cow while the 100 to 199 cow dairy farms average \$466 net farm income per cow. The 200 to 299 herd size category had the second highest net farm income per cow at \$580. Other factors that affect profitability and their relationship to the size classifications are shown in Table 48.

Table 47.

**COWS PER FARM AND FARM FAMILY INCOME MEASURES
314 New York Dairy Farms, 1999**

| Number of Cows | Number of Farms | Ave. No. of Cows | Net Farm Income Without Apprec. | Net Farm Income Per Cow | Labor & Management Inc./Oper. | Return to all Capital Without Apprec. |
|----------------|-----------------|------------------|---------------------------------|-------------------------|-------------------------------|---------------------------------------|
| Under 50 | 32 | 40 | \$21,114 | \$528 | \$1,363 | -0.9% |
| 50 to 74 | 56 | 61 | 31,904 | 523 | 6,030 | 0.9% |
| 75 to 99 | 42 | 86 | 47,042 | 547 | 12,447 | 3.2% |
| 100 to 149 | 52 | 125 | 58,229 | 466 | 12,853 | 3.3% |
| 150 to 199 | 25 | 176 | 82,057 | 466 | 23,447 | 5.0% |
| 200 to 299 | 37 | 245 | 142,189 | 580 | 49,714 | 8.3% |
| 300 to 399 | 22 | 361 | 179,973 | 499 | 63,828 | 9.1% |
| 400 to 599 | 27 | 491 | 229,767 | 468 | 71,521 | 8.4% |
| 600 & over | 21 | 986 | 639,672 | 649 | 200,411 | 12.0% |

Net farm income per cow increased as economies were attained. Farms with over 200 cows saw purchased inputs increase per cow before economies of size again appeared. Net farm income per cow will increase as farms become larger if the costs of increased purchased inputs are offset by greater and more efficient output.

The farms with 600 and more cows averaged more milk sold per cow than any other size category (Table 48). With 23,517 pounds of milk sold per cow, farms in the largest herd size group averaged 15 percent more milk output per cow than the average of all herds in the summary with less than 600 cows.

The ability to reach high levels of milk output per cow with large herds is a major key to high profitability. Three times a day milking (3X) and supplementing with bST are herd management practices commonly used to increase milk output per cow in large herds. Many dairy farmers who have been willing and able to employ and manage the labor required to milk 3X have been successful. Only 5 percent of the 130 DFBS farms with less than 100 cows used a milking frequency greater than 2X. As herd size increased, the percent of herds using a higher milking frequency increased. Farms with 100 to 149 cows reported 10 percent of the herds milking more often than 2X, the 150-199 cow herds reported 40 percent, 200-299 cow herds reported 35 percent, 300-399 cow herds reported 73 percent, 400-599 cow herds reported 93 percent, and the 600 cow and larger herds reported 90 percent exceeding the 2X milking frequency.

Table 48.

**COWS PER FARM AND RELATED FARM FACTORS
314 New York Dairy Farms, 1999**

| Number of Cows | Avg. No. of Cows | Milk Sold Per Cow (lbs.) | Milk Sold Per Worker (cwt.) | Till- able Acres Per Cow | Forage DM Per Cow (tons) | Farm Capital Per Cow | Cost of Producing Milk/Cwt. | |
|-------------------|------------------------|-----------------------------------|--------------------------------------|-----------------------------------|-----------------------------------|-------------------------------|-----------------------------------|---------|
| | | | | | | | Oper. | Total |
| Under 50 | 40 | 16,588 | 3,637 | 3.8 | 6.3 | \$8,805 | \$9.97 | \$18.36 |
| 50 to 74 | 61 | 17,661 | 4,653 | 3.5 | 7.9 | 7,947 | 10.42 | 16.68 |
| 75 to 99 | 86 | 18,995 | 5,497 | 3.4 | 8.3 | 7,577 | 10.62 | 15.81 |
| 100 to 149 | 125 | 19,173 | 6,466 | 2.9 | 7.2 | 6,991 | 11.26 | 15.70 |
| 150 to 199 | 176 | 20,008 | 7,167 | 2.8 | 8.1 | 7,121 | 11.36 | 15.16 |
| 200 to 299 | 245 | 21,067 | 8,320 | 2.4 | 7.9 | 6,195 | 11.16 | 14.29 |
| 300 to 399 | 361 | 21,437 | 9,016 | 2.1 | 7.5 | 5,585 | 11.33 | 13.88 |
| 400 to 599 | 491 | 22,145 | 9,519 | 2.0 | 8.0 | 6,308 | 11.66 | 14.30 |
| 600 & over | 986 | 23,517 | 11,187 | 1.8 | 8.1 | 5,855 | 11.14 | 13.29 |

Bovine somatotropin (bST), was used to a greater extent on the large herd farms. bST was used sometime during 1999 on 25 percent of the herds with less than 100 cows, 63 percent of the farms with 100 to 299 cows and on 91 percent of the farms with 300 cows and more.

Milk output per worker has always shown a strong correlation with farm profitability. The farms with 100 cows or more averaged over 861,000 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 460,000 pounds per worker.

In addition to achieving the highest productivity per cow and per worker, the largest farms practiced the most efficient use of cropland with 1.8 tillable acres per cow, and the most efficient use of farm capital with an average investment of \$5,855 per cow.

The last column in Table 48 may be the most important in explaining why profits were significantly higher on the 600 plus cow farms. The 21 farms with 600 and more cows held their average total costs of producing milk to \$13.29 per hundredweight, \$1.51 below the \$14.80 average for the remaining 293 dairy farms. The lower average costs of production plus a similar milk price gave the managers of the 600 plus cow dairy farms profit margins (milk price less total cost of producing milk) that averaged \$1.73 per hundredweight above the average of the other 293 DFBS farms.

A detailed list of accrual expenses, receipts and a profitability analysis is presented in Table 49, on pages 48 and 49 for the nine herd size categories. Purchased feed is the largest expense on all farms, regardless of size. However, large farms find hired labor expense as the second largest expense category.

Assets, liabilities and financial measures are presented in Table 50 on pages 50-53. All herd size categories saw an increase in net worth during 1999. The largest herd size category experienced an increase in net worth of over \$400,000. However, percent equity went down as herd size increased. The largest herds had 53% equity; while the smaller herds averaged 78%.

Selected business factors by herd size group are presented in Table 51 on pages 54 and 55. Larger farms are, on average, more profitable; but no farm is large enough to insure a profit. For a more detailed analysis of large herd farms, see E.B. 2000-04, Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 1999. For analysis of smaller herds, see E.B. 2000-12, Dairy Farm Business Summary, New York Small Herd Farms, 65 Cows or Fewer, 1999.

Table 49.

FARM BUSINESS SUMMARY BY HERD SIZE
314 New York Dairy Farms, 1999

| Item | Farm Size: | Less than 50 Cows | 50 to 74 Cows | 75 to 99 Cows | 100 to 149 Cows |
|--|------------|----------------------|------------------|------------------|--------------------|
| Number of farms | | 32 | 56 | 42 | 52 |
| <u>ACCRUAL EXPENSES</u> | | | | | |
| Hired labor | | \$3,354 | \$10,164 | \$17,299 | \$30,455 |
| Dairy grain & concentrate | | 23,124 | 38,281 | 58,641 | 88,565 |
| Dairy roughage | | 2,470 | 3,777 | 2,220 | 8,559 |
| Nondairy feed | | 0 | 0 | 4 | 440 |
| Machine hire, rent & lease | | 2,059 | 3,134 | 5,682 | 9,182 |
| Machine repairs & farm vehicle expense | | 6,324 | 11,691 | 15,795 | 22,878 |
| Fuel, oil & grease | | 2,043 | 4,097 | 5,419 | 7,260 |
| Replacement livestock | | 1,243 | 3,587 | 3,074 | 8,285 |
| Breeding | | 1,256 | 2,408 | 3,521 | 4,713 |
| Veterinary & medicine | | 1,981 | 3,586 | 6,090 | 10,127 |
| Milk marketing | | 5,415 | 7,533 | 9,977 | 15,066 |
| Bedding | | 485 | 876 | 1,546 | 2,839 |
| Milking supplies | | 2,985 | 4,938 | 6,138 | 9,091 |
| Cattle lease & rent | | 0 | 33 | 20 | 22 |
| Custom boarding | | 483 | 527 | 702 | 2,176 |
| bST expense | | 248 | 693 | 1,961 | 3,982 |
| Other livestock expense | | 2,037 | 3,146 | 5,106 | 6,137 |
| Fertilizer & lime | | 2,857 | 4,484 | 7,763 | 9,826 |
| Seeds & plants | | 1,156 | 2,535 | 3,912 | 5,387 |
| Spray & other crop expense | | 970 | 2,007 | 4,856 | 5,885 |
| Land, building & fence repair | | 2,928 | 3,836 | 4,940 | 6,748 |
| Taxes & rent | | 4,247 | 7,493 | 10,803 | 12,725 |
| Utilities | | 3,635 | 5,847 | 7,515 | 9,727 |
| Interest paid | | 6,555 | 8,525 | 14,746 | 19,463 |
| Misc. (including insurance) | | 3,198 | 5,607 | 7,098 | 9,822 |
| Total Operating Expenses | | \$81,055 | \$138,806 | \$204,826 | \$309,361 |
| Expansion livestock | | 0 | 174 | 931 | 3,630 |
| Machinery depreciation | | 8,881 | 10,688 | 14,431 | 16,691 |
| Building depreciation | | 2,510 | 3,911 | 6,704 | 11,787 |
| Total Accrual Expenses | | \$92,446 | \$153,579 | \$226,892 | \$341,469 |
| <u>ACCRUAL RECEIPTS</u> | | | | | |
| Milk sales | | \$98,860 | \$159,503 | \$241,035 | \$356,117 |
| Dairy cattle | | 6,156 | 10,598 | 14,496 | 15,951 |
| Dairy calves | | 1,043 | 1,663 | 2,187 | 3,138 |
| Other livestock | | 524 | 76 | 35 | 1,022 |
| Crops | | -425 | 2,438 | 2,147 | 5,252 |
| Misc. receipts | | 7,401 | 11,205 | 14,034 | 18,217 |
| Total Accrual Receipts | | \$113,560 | \$185,483 | \$273,934 | \$399,698 |
| <u>PROFITABILITY ANALYSIS</u> | | | | | |
| Net farm income (without appreciation) | | \$21,114 | \$31,904 | \$47,042 | \$58,229 |
| Net farm income (with appreciation) | | \$27,932 | \$42,524 | \$55,950 | \$75,949 |
| Labor & management income | | \$1,649 | \$8,141 | \$18,172 | \$22,107 |
| Number of operators | | 1.21 | 1.35 | 1.46 | 1.72 |
| Labor & management income/operator | | \$1,363 | \$6,030 | \$12,447 | \$12,853 |
| Rates of return on: | | | | | |
| Equity capital without appreciation | | -3.6% | -1.2% | 1.3% | 1.6% |
| Equity capital with appreciation | | -1.1% | 1.9% | 3.3% | 4.7% |
| All capital without appreciation | | -0.9% | 0.9% | 3.2% | 3.3% |
| All capital with appreciation | | 1.0% | 3.1% | 4.5% | 5.3% |

Table 49. (continued)

FARM BUSINESS SUMMARY BY HERD SIZE
314 New York Dairy Farms, 1999

| Item | Farm Size: | 150 to 199 Cows | 200 to 299 Cows | 300 to 399 Cows | 400 to 599 Cows | 600 or More Cows |
|--|------------|--------------------|--------------------|--------------------|--------------------|---------------------|
| Number of farms | | 25 | 37 | 22 | 27 | 21 |
| <u>ACCRUAL EXPENSES</u> | | | | | | |
| Hired labor | | \$69,545 | \$97,379 | \$174,824 | \$261,155 | \$614,648 |
| Dairy grain & concentrate | | 126,986 | 192,478 | 278,554 | 412,433 | 892,337 |
| Dairy roughage | | 3,817 | 6,159 | 30,123 | 29,748 | 35,202 |
| Nondairy feed | | 152 | 68 | 0 | 0 | 0 |
| Machine hire, rent & lease | | 13,728 | 24,788 | 27,832 | 36,361 | 102,103 |
| Machine repairs & farm vehicle expense | | 35,458 | 41,794 | 59,341 | 80,418 | 145,737 |
| Fuel, oil & grease | | 9,784 | 14,062 | 17,717 | 24,519 | 45,218 |
| Replacement livestock | | 9,347 | 10,171 | 26,354 | 36,826 | 31,105 |
| Breeding | | 5,037 | 8,855 | 10,894 | 18,921 | 35,521 |
| Veterinary & medicine | | 13,771 | 25,238 | 35,036 | 54,592 | 120,027 |
| Milk marketing | | 19,896 | 30,188 | 37,610 | 51,977 | 83,120 |
| Bedding | | 5,680 | 7,176 | 14,046 | 23,977 | 59,854 |
| Milking supplies | | 14,115 | 18,535 | 25,843 | 30,305 | 72,801 |
| Cattle lease & rent | | 338 | 670 | 4,120 | 4,972 | 25,340 |
| Custom boarding | | 3,781 | 8,656 | 12,236 | 15,488 | 45,594 |
| bST expense | | 5,065 | 10,991 | 19,957 | 30,860 | 72,113 |
| Other livestock expense | | 6,403 | 8,890 | 11,145 | 18,392 | 16,965 |
| Fertilizer & lime | | 14,223 | 20,647 | 21,422 | 36,678 | 69,119 |
| Seeds & plants | | 8,850 | 10,637 | 18,847 | 21,879 | 39,012 |
| Spray & other crop expense | | 10,920 | 12,228 | 19,837 | 29,032 | 47,522 |
| Land, building & fence repair | | 10,280 | 17,973 | 19,733 | 25,474 | 55,948 |
| Taxes & rent | | 21,152 | 27,195 | 31,551 | 43,666 | 97,459 |
| Utilities | | 13,299 | 15,471 | 22,357 | 28,586 | 57,747 |
| Interest paid | | 31,636 | 43,187 | 68,656 | 103,843 | 116,103 |
| Misc. (including insurance) | | <u>13,681</u> | <u>19,255</u> | <u>22,245</u> | <u>36,751</u> | <u>59,237</u> |
| Total Operating Expenses | | \$466,941 | \$672,692 | \$1,010,281 | \$1,456,856 | \$2,989,832 |
| Expansion livestock | | 12,893 | 27,138 | 27,138 | 46,806 | 39,746 |
| Machinery depreciation | | 26,775 | 47,870 | 47,870 | 72,631 | 122,533 |
| Building depreciation | | <u>15,870</u> | <u>23,599</u> | <u>33,319</u> | <u>58,919</u> | <u>114,620</u> |
| Total Accrual Expenses | | \$522,479 | \$747,619 | \$1,118,608 | \$1,635,212 | \$3,266,731 |
| <u>ACCRUAL RECEIPTS</u> | | | | | | |
| Milk sales | | \$524,593 | \$777,693 | \$1,138,236 | \$1,630,212 | \$3,460,884 |
| Dairy cattle | | 36,068 | 50,198 | 76,364 | 111,694 | 196,131 |
| Dairy calves | | 4,320 | 5,756 | 10,179 | 14,440 | 24,031 |
| Other livestock | | -270 | 10,658 | 2,908 | 1,823 | 3,716 |
| Crops | | 6,806 | 11,862 | 28,008 | 49,437 | 104,113 |
| Misc. receipts | | <u>33,020</u> | <u>33,641</u> | <u>42,885</u> | <u>57,373</u> | <u>117,529</u> |
| Total Accrual Receipts | | \$604,536 | \$889,808 | \$1,298,581 | \$1,864,979 | \$3,906,403 |
| <u>PROFITABILITY ANALYSIS</u> | | | | | | |
| Net farm income (without appreciation) | | \$82,057 | \$142,189 | \$179,973 | \$229,767 | \$639,672 |
| Net farm income (with appreciation) | | \$113,986 | 178,725 | \$221,804 | \$294,449 | \$743,001 |
| Labor & management income | | \$39,391 | 93,463 | \$125,742 | \$143,758 | \$486,999 |
| Number of operators | | 1.68 | 1.88 | 1.97 | 2.01 | 2.43 |
| Labor & management income/operator | | \$23,447 | \$49,714 | \$63,828 | \$71,521 | \$200,411 |
| Rates of return on: | | | | | | |
| Equity capital without appreciation | | 3.9% | 9.5% | 11.1% | 9.6% | 17.6% |
| Equity capital with appreciation | | 7.8% | 13.7% | 15.1% | 13.6% | 21.0% |
| All capital without appreciation | | 5.0% | 8.3% | 9.1% | 8.4% | 12.0% |
| All capital with appreciation | | 7.6% | 10.7% | 11.2% | 10.5% | 13.8% |

Table 50.

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
314 New York Dairy Farms, 1999

| Item | Farms with: | | 50 to 74 Cows | |
|---|-------------------|----------------|----------------|----------------|
| | Less than 50 Cows | | Jan. 1 | Dec. 31 |
| | Jan. 1 | Dec. 31 | | |
| ASSETS | | | | |
| Farm cash, checking & savings | \$4,184 | \$4,839 | \$4,850 | \$6,278 |
| Accounts receivable | 9,410 | 6,971 | 15,664 | 12,222 |
| Prepaid expenses | 133 | 106 | 59 | 15 |
| Feed & supplies | 18,364 | 18,922 | 31,003 | 33,483 |
| Livestock* | 60,403 | 63,017 | 94,400 | 100,880 |
| Machinery & equipment* | 67,460 | 78,888 | 97,192 | 103,548 |
| Farm Credit stock | 852 | 737 | 927 | 1,081 |
| Other stock & certificates | 796 | 876 | 2,701 | 3,025 |
| Land & buildings* | <u>182,721</u> | <u>185,721</u> | <u>229,485</u> | <u>232,737</u> |
| Total Farm Assets | \$344,323 | \$360,077 | \$476,281 | \$493,269 |
| Personal cash, checking & savings | \$3,878 | \$3,328 | \$1,746 | \$1,739 |
| Cash value of life insurance | 4,693 | 5,421 | 12,178 | 9,586 |
| Nonfarm real estate | 11,653 | 11,852 | 13,131 | 11,655 |
| Auto (personal share) | 4,535 | 3,603 | 3,907 | 4,891 |
| Stocks & bonds | 2,951 | 3,454 | 10,709 | 14,592 |
| Household furnishings | 12,222 | 12,470 | 10,488 | 10,560 |
| All other | <u>14,943</u> | <u>16,739</u> | <u>2,190</u> | <u>3,520</u> |
| Nonfarm Assets** | \$54,857 | \$56,867 | \$54,349 | \$56,543 |
| Farm & Nonfarm Assets | \$399,180 | \$416,944 | \$530,630 | \$549,812 |
| LIABILITIES | | | | |
| Accounts payable | \$2,252 | \$1,850 | \$7,698 | \$5,666 |
| Operating debt | 2,743 | 2,503 | 4,292 | 4,219 |
| Short term | 393 | 277 | 1,848 | 857 |
| Advanced government receipt | 16 | 15 | 0 | 73 |
| Current Portion: | | | | |
| Intermediate | 6,135 | 6,809 | 8,644 | 10,912 |
| Long Term | 3,277 | 2,833 | 4,290 | 3,105 |
| Intermediate*** | 26,086 | 29,513 | 49,162 | 48,727 |
| Long term* | <u>41,895</u> | <u>36,819</u> | <u>63,866</u> | <u>64,359</u> |
| Total Farm Liabilities | \$82,798 | \$80,619 | \$140,300 | \$137,918 |
| Nonfarm Liabilities** | <u>5,954</u> | <u>6,353</u> | <u>4,031</u> | <u>4,203</u> |
| Farm & Nonfarm Liabilities | \$88,752 | \$86,972 | \$144,331 | \$142,121 |
| Farm Net Worth (Equity Capital) | \$261,525 | \$279,458 | \$335,981 | \$355,351 |
| Farm & Nonfarm Net Worth | \$310,428 | \$329,972 | \$386,299 | \$407,691 |
| FINANCIAL MEASURES | | | | |
| | Less than 50 Cows | | 50 to 74 Cows | |
| Percent Equity | 78% | | 72% | |
| Debt/asset ratio-long term | 0.20 | | 0.28 | |
| Debt/asset ratio-intermediate & current | 0.25 | | 0.28 | |
| Change in net worth with appreciation | \$17,933 | | \$19,370 | |
| Total farm debt per cow | \$1,966 | | \$2,224 | |
| Debt payments made per cow | \$521 | | \$620 | |
| Debt payments as % of milk sales | 20% | | 23% | |
| Amount available for debt service | \$28,437 | | \$30,232 | |
| Cash flow coverage ratio for 1999 | 1.51 | | 1.26 | |
| Debt coverage ratio for 1999 | 1.46 | | 1.24 | |

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1999.

***Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 50. (cont'd)

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
314 New York Dairy Farms, 1999

| Item | Farms with: | | 100 to 149 Cows | |
|---|----------------|----------------|-----------------|----------------|
| | 75 to 99 Cows | | Jan. 1 | Dec. 31 |
| | Jan. 1 | Dec. 31 | | |
| ASSETS | | | | |
| Farm cash, checking & savings | \$6,898 | \$14,469 | \$7,241 | \$7,171 |
| Accounts receivable | 26,964 | 21,582 | 35,478 | 27,336 |
| Prepaid expenses | 500 | 489 | 107 | 354 |
| Feed & supplies | 51,803 | 56,150 | 71,039 | 79,435 |
| Livestock* | 130,750 | 139,363 | 182,909 | 194,268 |
| Machinery & equipment* | 130,530 | 144,195 | 165,393 | 180,131 |
| Farm Credit stock | 2,195 | 2,250 | 3,490 | 3,273 |
| Other stock & certificates | 5,265 | 6,130 | 12,511 | 13,775 |
| Land & buildings* | <u>277,692</u> | <u>285,970</u> | <u>379,016</u> | <u>384,734</u> |
| Total Farm Assets | \$632,597 | \$670,571 | \$857,184 | \$890,477 |
| Personal cash, checking & savings | \$3,520 | \$3,925 | \$8,496 | \$6,178 |
| Cash value of life insurance | 10,049 | 12,260 | 7,463 | 7,880 |
| Nonfarm real estate | 12,295 | 15,245 | 59,083 | 59,577 |
| Auto (personal share) | 5,731 | 5,536 | 6,185 | 6,262 |
| Stocks & bonds | 18,365 | 24,519 | 12,889 | 16,405 |
| Household furnishings | 6,625 | 7,000 | 6,212 | 6,988 |
| All other | <u>5,656</u> | <u>7,398</u> | <u>9,768</u> | <u>9,786</u> |
| Nonfarm Assets** | \$62,241 | \$75,883 | \$110,051 | \$113,076 |
| Farm & Nonfarm Assets | \$694,838 | \$746,454 | \$967,235 | \$1,003,553 |
| LIABILITIES | | | | |
| Accounts payable | \$11,192 | \$10,054 | \$14,389 | \$14,266 |
| Operating debt | 4,990 | 6,522 | 15,812 | 17,645 |
| Short term | 1,521 | 2,870 | 1,529 | 1,760 |
| Advanced government receipt | 205 | 205 | 47 | 51 |
| Current Portion: | | | | |
| Intermediate | 12,710 | 15,616 | 21,550 | 24,862 |
| Long Term | 5,087 | 8,402 | 7,859 | 8,321 |
| Intermediate*** | 67,615 | 72,889 | 113,247 | 110,081 |
| Long term* | <u>102,464</u> | <u>99,362</u> | <u>121,981</u> | <u>117,383</u> |
| Total Farm Liabilities | \$205,783 | \$216,190 | \$296,414 | \$294,370 |
| Nonfarm Liabilities** | <u>2,439</u> | <u>2,193</u> | <u>6,535</u> | <u>4,891</u> |
| Farm & Nonfarm Liabilities | \$208,222 | \$218,383 | \$302,949 | \$299,261 |
| Farm Net Worth (Equity Capital) | \$426,814 | \$454,381 | \$560,770 | \$596,107 |
| Farm & Nonfarm Net Worth | \$486,616 | \$528,071 | \$664,286 | \$704,292 |
| FINANCIAL MEASURES | | | | |
| | 75 to 99 Cows | | 100 to 149 Cows | |
| Percent equity | 68% | | 67% | |
| Debt/asset ratio-long term | 0.35 | | 0.31 | |
| Debt/asset ratio-intermediate & current | 0.30 | | 0.35 | |
| Change in net worth with appreciation | \$27,567 | | \$35,337 | |
| Total farm debt per cow | \$2,485 | | \$2,318 | |
| Debt payments made per cow | \$543 | | \$488 | |
| Debt payments as % of milk sales | 19% | | 17% | |
| Amount available for debt service | \$60,890 | | \$66,919 | |
| Cash flow coverage ratio for 1999 | 1.57 | | 1.14 | |
| Debt coverage ratio for 1999 | 1.61 | | 1.23 | |

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1999.

***Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 50. (cont'd)

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
314 New York Dairy Farms, 1999

| Item | Farms with: | | 200 o 299 Cows | |
|---|-----------------|----------------|-----------------|----------------|
| | 150 to 199 Cows | | Jan. 1 | Dec. 31 |
| | Jan. 1 | Dec. 31 | | |
| ASSETS | | | | |
| Farm cash, checking & savings | \$9,600 | \$8,646 | \$11,146 | \$8,719 |
| Accounts receivable | 50,414 | 47,100 | 74,199 | 59,576 |
| Prepaid expenses | 683 | 659 | 936 | 1,194 |
| Feed & supplies | 119,680 | 132,729 | 152,987 | 188,526 |
| Livestock* | 253,951 | 281,643 | 366,350 | 400,440 |
| Machinery & equipment* | 244,072 | 268,865 | 260,638 | 290,750 |
| Farm Credit stock | 3,093 | 3,531 | 4,344 | 4,576 |
| Other stock & certificates | 21,433 | 25,200 | 20,523 | 20,313 |
| Land & buildings* | <u>502,458</u> | <u>532,711</u> | <u>566,619</u> | <u>603,699</u> |
| Total Farm Assets | \$1,205,384 | \$1,301,084 | \$1,457,742 | \$1,577,793 |
| Personal cash, checking & savings | \$600 | \$120 | \$7,864 | \$8,890 |
| Cash value of life insurance | 12,415 | 11,735 | 25,783 | 26,298 |
| Nonfarm real estate | 74,800 | 74,800 | 34,057 | 33,031 |
| Auto (personal share) | 5,268 | 3,550 | 3,881 | 4,738 |
| Stocks & bonds | 200 | 1,180 | 70,475 | 81,230 |
| Household furnishings | 10,700 | 10,700 | 10,531 | 10,531 |
| All other | <u>26,358</u> | <u>25,359</u> | <u>16,285</u> | <u>15,050</u> |
| Nonfarm Assets** | \$130,341 | \$127,444 | \$168,876 | \$179,768 |
| Farm & Nonfarm Assets | \$1,335,725 | \$1,428,528 | \$1,626,618 | \$1,757,561 |
| LIABILITIES | | | | |
| Accounts payable | \$14,276 | \$21,552 | \$14,325 | \$13,661 |
| Operating debt | 17,985 | 30,694 | 27,287 | 33,012 |
| Short term | 1,996 | 1,032 | 8,782 | 9,206 |
| Advanced government receipt | 1,346 | 0 | 0 | 0 |
| Current Portion: | | | | |
| Intermediate | 31,582 | 33,714 | 52,872 | 58,711 |
| Long Term | 9,411 | 14,449 | 11,303 | 12,869 |
| Intermediate*** | 172,085 | 186,932 | 291,909 | 301,433 |
| Long term* | <u>172,997</u> | <u>176,177</u> | <u>236,057</u> | <u>223,890</u> |
| Total Farm Liabilities | \$421,667 | \$464,550 | \$642,534 | \$652,782 |
| Nonfarm Liabilities** | <u>2,258</u> | <u>13,949</u> | <u>2,336</u> | <u>2,411</u> |
| Farm & Nonfarm Liabilities | \$423,935 | \$478,499 | \$644,870 | \$655,193 |
| Farm Net Worth (Equity Capital) | \$783,707 | \$836,534 | \$815,208 | \$925,011 |
| Farm & Nonfarm Net Worth | \$911,790 | \$950,029 | \$981,748 | \$1,102,368 |
| FINANCIAL MEASURES | | | | |
| | 150 to 199 Cows | | 200 to 299 Cows | |
| Percent equity | 64% | | 59% | |
| Debt/asset ratio-long term | 0.33 | | 0.37 | |
| Debt/asset ratio-intermediate & current | 0.38 | | 0.44 | |
| Change in net worth with appreciation | \$52,827 | | \$109,803 | |
| Total farm debt per cow | \$2,567 | | \$2,611 | |
| Debt payments made per cow | \$455 | | \$657 | |
| Debt payments as % of milk sales | 15% | | 21% | |
| Amount available for debt service | \$100,611 | | \$159,392 | |
| Cash flow coverage ratio for 1999 | 1.39 | | 1.23 | |
| Debt coverage ratio for 1999 | 1.54 | | 1.50 | |

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1999.

***Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 50. (cont'd)

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
314 New York Dairy Farms, 1999

| Item | Farms with: | | | | | |
|---|------------------------|-----------------|------------------------|------------------|---------------------------|------------------|
| | 300 to 399 Cows | 400 to 599 Cows | More than 600 Cows | | | |
| | Jan. 1 | Dec. 31 | Jan. 1 | Dec. 31 | Jan. 1 | Dec. 31 |
| ASSETS | | | | | | |
| Farm cash, checking & savings | \$5,621 | \$9,612 | \$22,071 | \$22,845 | \$-5,148 | \$38,261 |
| Accounts receivable | 105,273 | 79,018 | 122,274 | 104,322 | 233,275 | 185,514 |
| Prepaid expenses | 240 | 541 | 840 | 3,123 | 15,572 | 22,263 |
| Feed & supplies | 189,343 | 232,670 | 291,390 | 354,675 | 679,163 | 929,759 |
| Livestock* | 514,704 | 566,610 | 718,365 | 798,443 | 1,450,514 | 1,511,830 |
| Machinery & equipment* | 319,594 | 366,604 | 509,870 | 590,579 | 911,970 | 997,838 |
| Farm Credit stock | 5,562 | 5,376 | 18,926 | 18,109 | 22,700 | 26,497 |
| Other stock & certificates | 38,734 | 48,220 | 58,814 | 69,073 | 129,135 | 160,034 |
| Land & buildings* | <u>720,931</u> | <u>823,562</u> | <u>1,159,532</u> | <u>1,330,748</u> | <u>2,040,538</u> | <u>2,197,194</u> |
| Total Farm Assets | \$1,900,002 | \$2,132,213 | \$2,902,082 | \$3,291,917 | \$5,477,719 | \$6,069,190 |
| Personal cash, checking & savings | \$2,940 | \$2,536 | \$2,354 | \$5,210 | \$0 | \$0 |
| Cash value of life insurance | 5,635 | 7,450 | 15,823 | 19,039 | 36,231 | 46,948 |
| Nonfarm real estate | 11,500 | 11,500 | 62,950 | 73,000 | 0 | 0 |
| Auto (personal share) | 3,420 | 8,200 | 5,290 | 5,400 | 0 | 0 |
| Stocks & bonds | 1,050 | 13,517 | 6,720 | 9,914 | 22,335 | 40,600 |
| Household furnishings | 4,600 | 6,600 | 12,500 | 12,700 | 0 | 0 |
| All other | <u>0</u> | <u>0</u> | <u>0</u> | <u>3,100</u> | <u>0</u> | <u>0</u> |
| Nonfarm Assets** | \$29,145 | \$49,803 | \$105,637 | \$128,363 | \$58,566 | \$87,548 |
| Farm & Nonfarm Assets | \$1,929,147 | \$2,182,016 | \$3,007,719 | \$3,420,280 | \$5,536,285 | \$6,156,738 |
| LIABILITIES | | | | | | |
| Accounts payable | \$41,870 | \$43,064 | \$34,077 | \$27,783 | \$37,721 | \$38,220 |
| Operating debt | 53,037 | 69,629 | 44,819 | 72,568 | 291,368 | 433,151 |
| Short term | 9,172 | 11,375 | 29,047 | 30,020 | 7,371 | 6,137 |
| Advanced government receipts | 965 | 141 | 0 | 0 | 257 | 0 |
| Current Portion: | | | | | | |
| Intermediate | 70,081 | 79,784 | 114,482 | 126,870 | 112,760 | 153,303 |
| Long Term | 21,991 | 23,203 | 37,085 | 33,359 | 79,929 | 138,379 |
| Intermediate*** | 354,142 | 403,104 | 536,529 | 635,980 | 1,053,090 | 1,093,867 |
| Long term* | <u>367,134</u> | <u>407,866</u> | <u>553,771</u> | <u>664,432</u> | <u>1,108,088</u> | <u>979,951</u> |
| Total Farm Liabilities | \$918,393 | \$1,038,166 | \$1,349,810 | \$1,591,013 | \$2,690,584 | \$2,843,008 |
| Nonfarm Liabilities** | <u>10,686</u> | <u>635</u> | <u>28,000</u> | <u>26,767</u> | <u>0</u> | <u>0</u> |
| Farm & Nonfarm Liabilities | \$929,079 | \$1,038,801 | \$1,377,810 | \$1,617,780 | \$2,690,584 | \$2,843,008 |
| Farm Net Worth (Equity Capital) | 981,609 | 1,094,047 | 1,552,272 | 1,700,904 | 2,787,135 | 3,226,182 |
| Farm & Nonfarm Net Worth | \$1,000,068 | \$1,143,215 | \$1,629,909 | \$1,802,500 | \$2,845,701 | \$3,313,730 |
| FINANCIAL MEASURES | | | | | | |
| | <u>300 to 399 Cows</u> | | <u>400 to 599 Cows</u> | | <u>More than 600 Cows</u> | |
| Percent equity | 51% | | 52% | | 53% | |
| Debt/asset ratio-long term | .50 | | .50 | | .45 | |
| Debt/asset ratio-intermediate & current | .48 | | .47 | | .48 | |
| Change in net worth with appreciation | \$112,438 | | \$148,632 | | \$439,047 | |
| Total farm debt per cow | \$2,791 | | \$3,042 | | \$2,818 | |
| Debt payments made per cow | \$697 | | \$853 | | \$388 | |
| Debt payments as % of milk sales | 22% | | 25% | | 11% | |
| Amount available for debt service | \$212,796 | | \$313,192 | | \$621,668 | |
| Cash flow coverage ratio for 1999 | 1.11 | | 1.18 | | 1.64 | |
| Debt coverage ratio for 1999 | 1.24 | | 1.42 | | 2.32 | |

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1999.

***Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 51.

SELECTED BUSINESS FACTORS BY HERD SIZE
314 New York Dairy Farms, 1999

| Item | Farms with: | Less than 50 Cows | 50 to 74 Cows | 75 to 99 Cows | 100 to 149 Cows |
|--|-------------|----------------------|------------------|------------------|--------------------|
| Number of farms | | 32 | 56 | 42 | 52 |
| <u>Cropping Program Analysis</u> | | | | | |
| Total Tillable acres | | 151 | 215 | 288 | 358 |
| Tillable acres rented* | | 54 | 87 | 121 | 159 |
| Hay crop acres* | | 98 | 127 | 164 | 196 |
| Corn silage acres* | | 18 | 46 | 75 | 89 |
| Hay crop, tons DM/acre | | 1.7 | 2.2 | 2.2 | 2.3 |
| Corn silage, tons/acre | | 13.0 | 12.9 | 13.7 | 14.2 |
| Oats, bushels/acre | | 22 | 62 | 68 | 49 |
| Forage DM per cow, tons | | 6.3 | 7.9 | 8.3 | 7.2 |
| Tillable acres/cow | | 3.8 | 3.5 | 3.4 | 2.9 |
| Fert. & lime expense/tillable acre | | \$18.92 | \$20.86 | \$26.95 | \$27.45 |
| Total machinery costs | | \$22,966 | \$34,629 | \$48,195 | \$64,649 |
| Machinery cost/tillable acre | | \$152 | \$161 | \$167 | \$181 |
| <u>Dairy Analysis</u> | | | | | |
| Number of cows | | 40 | 61 | 86 | 125 |
| Number of heifers | | 29 | 48 | 69 | 87 |
| Milk sold, lbs. | | 665,606 | 1,084,254 | 1,627,249 | 2,392,579 |
| Milk sold/cow, lbs. | | 16,588 | 17,661 | 18,995 | 19,173 |
| Operating cost of prod. milk/cwt. | | \$9.97 | \$10.42 | \$10.62 | \$11.26 |
| Total cost of prod. milk/cwt. | | \$18.36 | 16.68 | \$15.81 | \$15.70 |
| Price/cwt. milk sold | | \$14.85 | 14.71 | \$14.81 | \$14.88 |
| Purchased dairy feed/cow | | \$640 | \$689 | \$708 | \$777 |
| Purchased dairy feed/cwt. milk | | \$3.85 | \$3.88 | \$3.74 | \$4.06 |
| Purchased grain & concentrate as % of milk receipts | | 23% | 24% | 24% | 25% |
| Purchased feed & crop expense/cwt. milk | | \$4.59 | \$4.71 | \$4.76 | \$4.94 |
| Cull rate | | 25% | 28% | 30% | 27% |
| <u>Capital Efficiency</u> | | | | | |
| Farm capital/worker | | \$192,459 | \$208,058 | \$220,130 | \$236,171 |
| Farm capital/cow | | 8,805 | 7,947 | 7,577 | 6,991 |
| Farm capital/tillable acre owned | | 3,631 | 3,787 | 3,902 | 4,391 |
| Real estate/cow | | 4,606 | 3,789 | 3,277 | 3,055 |
| Machinery investment/cow | | 1,829 | 1,645 | 1,597 | 1,382 |
| Asset turnover ratio | | 0.34 | 0.40 | 0.43 | 0.48 |
| <u>Labor Efficiency</u> | | | | | |
| Worker equivalent | | 1.83 | 2.33 | 2.96 | 3.70 |
| Operator/manager equivalent | | 1.21 | 1.46 | 1.46 | 1.72 |
| Milk sold/worker, lbs. | | 363,719 | 465,345 | 549,746 | 646,643 |
| Cows/worker | | 22 | 26 | 29 | 34 |
| Work units/worker | | 230 | 279 | 311 | 344 |
| Labor cost/cow | | \$961 | \$783 | \$678 | \$614 |
| Labor cost/tillable acre | | \$255 | \$222 | \$203 | \$214 |

*Average of all farms, not only those reporting data.

Table 51. (cont'd)

SELECTED BUSINESS FACTORS BY HERD SIZE
314 New York Dairy Farms, 1999

| Item | Farms with: 150 to 199 Cows | 200 to 299 Cows | 300 to 399 Cows | 400 to 599 Cows | 600 or More Cows |
|--|-----------------------------------|--------------------|--------------------|--------------------|---------------------|
| Number of farms | 25 | 37 | 22 | 27 | 21 |
| <u>Cropping Program Analysis</u> | | | | | |
| Total Tillable acres | 487 | 598 | 746 | 987 | 1,768 |
| Tillable acres rented* | 217 | 303 | 384 | 395 | 846 |
| Hay crop acres* | 237 | 288 | 305 | 428 | 748 |
| Corn silage acres* | 149 | 216 | 300 | 448 | 816 |
| Hay crop, tons DM/acre | 2.6 | 2.8 | 3.1 | 3.3 | 4.0 |
| Corn silage, tons/acre | 15.5 | 15.6 | 17.4 | 16.5 | 17.9 |
| Oats, bushels/acre | 6.5 | 0 | 0 | 46 | 0 |
| Forage DM per cow, tons | 8.1 | 7.9 | 7.5 | 8.0 | 8.1 |
| Tillable acres/cow | 2.8 | 2.4 | 2.1 | 2.0 | 1.8 |
| Fert. & lime expense/tillable acre | \$29.21 | \$34.53 | \$28.72 | \$37.16 | \$39.09 |
| Total machinery costs | \$98,568 | \$129,673 | \$169,915 | \$241,440 | \$463,336 |
| Machinery cost/tillable acre | \$202 | \$217 | \$228 | \$245 | \$262 |
| <u>Dairy Analysis</u> | | | | | |
| Number of cows | 176 | 245 | 361 | 491 | 986 |
| Number of heifers | 139 | 181 | 235 | 339 | 771 |
| Milk sold, lbs. | 3,518,992 | 5,167,015 | 7,744,509 | 10,879,879 | 23,189,783 |
| Milk sold/cow, lbs. | 20,008 | 21,067 | 21,437 | 22,145 | 23,517 |
| Operating cost of prod. milk/cwt. | \$11.36 | \$11.16 | \$11.33 | \$11.66 | \$11.14 |
| Total cost of prod. milk/cwt. | 15.16 | \$14.29 | \$13.88 | \$14.30 | 13.29 |
| Price/cwt. milk sold | 14.91 | \$15.05 | \$14.70 | \$14.98 | 14.92 |
| Purchased dairy feed/cow | \$743 | \$811 | \$855 | \$901 | 941 |
| Purchased dairy feed/cwt. milk | \$3.72 | \$3.84 | \$3.99 | \$4.06 | \$4.00 |
| Purchased grain & concentrate as % of milk receipts | 24% | 25% | 24% | 25% | 26% |
| Purchased feed & crop expense/cwt. milk | \$4.68 | \$4.69 | \$4.76 | \$4.87 | \$4.67 |
| Cull Rate | 31% | 29% | 30% | 35% | 35% |
| <u>Capital Efficiency</u> | | | | | |
| Farm capital/worker | \$255,241 | \$244,407 | \$234,704 | \$270,954 | \$278,507 |
| Farm capital/cow | \$7,121 | 6,195 | 5,585 | 6,308 | 5,855 |
| Farm capital/tillable acre owned | 4,642 | 5,145 | 5,569 | 5,231 | 6,262 |
| Real estate/cow | 2,941 | 2,388 | 2,139 | 2,536 | 2,149 |
| Machinery investment/cow | 1,457 | 1,125 | 950 | 1,121 | 968 |
| Asset turnover ratio | 0.51 | 0.61 | 0.66 | 0.62 | 0.69 |
| <u>Labor Efficiency</u> | | | | | |
| Worker equivalent | 4.91 | 6.21 | 8.59 | 11.43 | 20.73 |
| Operator/manager equivalent | 1.68 | 1.88 | 1.97 | 2.01 | 2.43 |
| Milk sold/worker, lbs. | 716,699 | 832,048 | 901,573 | 951,870 | 1,118,658 |
| Cows/worker | 36 | 39 | 42 | 43 | 48 |
| Work units/worker | 374 | 398 | 406 | 420 | 466 |
| Labor cost/cow | \$637 | \$594 | \$610 | \$637 | \$681 |
| Labor cost/tillable acre | \$230 | \$243 | \$295 | \$317 | \$380 |

*Average of all farms, not only those reporting data.

SUPPLEMENTAL INFORMATION

Comparisons of business performance by farms buying or growing forages, types of housing and herd size, bST usage, rotational grazers, milking frequency, same farms over 10 years, and dairy region are presented in this section. Farm receipts and expenses per cow and per hundredweight of milk sold for different levels of milk output and herd size groups, plus additional data, are included.

A word of caution to the reader on the interpretation of these data. It is the combination of resources and practices, and implementation of business management strategies by farmers that determine business performance. Examining one factor, while not holding all others constant, can lead to erroneous conclusions of cause and effect relationships. As an example, farms using bST have higher pounds of milk sold per cow. Is it exclusively bST or is it that farms using bST would have higher milk production per cow without bST? Keep this distinction in mind when reviewing the following data.

Comparison for Farms That Buy All Feed Versus Farms That Grow Forages

Farms specializing in only milk production are a growing trend in New York. In 1999, 20 farms purchased the majority of their feed, including all forages. Less than 10 acres of crops were harvested by the average farm. Table 52 highlights the income and expenses for these 20 farms compared to the income and expenses for 38 farms of similar size that grew their forages. Table 53 compares selected business factors for the two groups of farms. In 1999, the 20 farms buying forages averaged higher rates of return by shipping more milk per cow with less capital investment and had an operating cost that was very similar to the farms growing all forages.

Comparison by Type of Barn and Herd Size

When analyzing a dairy farm business by comparing it to a group of farms, it is important that the group of farms have as many of the same physical characteristics as possible as the farm being analyzed. To assist in this endeavor, dairy farms in the summary have been divided into those with freestall and those with conventional housing. Conventional housing includes stanchion and tiestall barns. Within each group, is a further classification by size of the dairy herd. Table 54 on page 60 includes the average values for the resulting five groups of dairy farms. The average size in the five groups ranges from 47 cows on the small conventional farms to 601 cows on the largest freestall farms. The largest freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow, and the greatest returns to labor, management and capital. The small freestall farms showed average profits somewhat higher than the large conventional farm businesses.

Farm business charts have been computed for each of the five housing and herd size categories and are on pages 61-65. By comparing the farm's performance on the most appropriate business chart, a farm manager will be better able to evaluate his or her business performance.

Comparison of Data, Same Farms, 1990 - 1999

Follow ten years of growth, change and progress made by 71 New York DFBS farms in Table 60, pages 66 and 67. Although milk receipts per cwt. increased less than two percent, net farm income without appreciation increased 158 percent from 1990 to 1999. Care should be exercised in using these data to indicate change in the dairy industry since the composition of the sample of farms is different from the state as a whole.

Comparison of Farms by bST Usage

Farms adopting bovine somatotropin (bST) experienced greater increases in milk production, had larger herds and were more profitable than farms not adopting bST (Table 61). Forty-three farms used bST in each year 1995, 1996, 1997, 1998 and 1999. In comparison, 53 farms did not use bST in 1995 through 1999.

Farms not using bST showed a 4.7 percent increase in pounds of milk sold per cow, from 17,210 pounds in 1995 to 18,024 pounds in 1999. Farms using bST increased milk sold per cow 5.3 percent, from 22,126 pounds per cow in 1995 to 23,291 pounds per cow in 1999. Farms that used bST in 1995 through 1999 were larger, and increased in size more rapidly than did farms not supplementing with bST. Farms not using bST increased by 6 cows, from an average of 83 cows in 1995 to 89 in 1999. Farms adopting bST increased by 118 cows, up to 495 cows in 1999. Both groups saw an increase in rate of return on all capital and net farm income in 1999. Both groups saw an increase in net worth, with the bST group increasing more rapidly. Debt to asset ratio and debt per cow changed very little over the study period. The reader is again reminded that bST is not solely responsible for the total changes, size alone is a significant factor.

Receipts and Expenses per Hundredweight of Milk and per Cow

Average accrual receipts and expenses per cow and per hundredweight of milk sold are listed for all 314 dairy farms, 164 dairy farms selling less than 20,000 pounds of milk per cow, and 150 dairy farms selling 20,000 pounds and more in Table 62 on page 69. Table 63 on page 70 provides the same list of average accrual receipts and expenses for 99 farms averaging less than 80 cows per farm, 98 farms with 80 to 180 cows and 117 farms with 180 cows or more.

These data are very useful for forward planning or budgeting when a farmer or planner does not have complete and accurate data from his or her own farm business. It is important to use the costs and returns per unit of output that most closely fit the level of production and herd size that is included in the plan. For example, an expansion budget for a 20,000 pound herd should include higher feed costs per cow than a budget for an 18,000 pound herd. Herds with more than 180 cows must budget higher labor costs per cow than smaller herds. These data should also be adjusted to the operating characteristics of the farm being budgeted. Most farms are not average. It is always better to have data on the specific farm being budgeted.

Intensive Grazing Farms vs. Non-Grazing Farms

In 1999, 65 of the 314 DFBS cooperators practiced intensive grazing. This means the dairy herd was on pasture for three months or more and was moved to a new paddock every third day or less and at least 30 percent of the forage was from pasture. The farms using intensive grazing are compared with a control group of non-grazing farms in Table 64. The control group is a selection of non-grazing dairy farms of similar size. In 1999 average net farm income was somewhat higher on intensive grazing farms. Operating cost of producing milk was 20 cents per cwt. lower while total costs were 6 cents per cwt. higher than the costs of production on the control farms. Table 64 also includes a comparison of 13 profitable grazing farms to 25 profitable non-grazing farms. E.B. 2000-11 contains detailed information on New York farms using intensive grazing.

Comparison of Dairy Farm Business Data by Region

Average farm business summary data from five regions of the State are compared in Tables 65 and 66. The largest average farm size, highest average rate of milk production, and highest average farm income came from the Western and Central Plain Region. Dairy farmers in this region have increased milk production 42.6 percent over the last 10 years and they produced milk for an average total cost of \$13.91 per hundredweight in 1999. Total milk production has declined 8.8 percent over 10 years in the Northern Hudson and Southeastern New York Region (Figure 2.). This is the region with the highest costs of producing milk and the third lowest returns to labor and management.

Comparison of Farms by Milking Frequency

Twenty-four percent of the 314 DFBS farms utilized three times per day (3X) milking in 1999. Most of the remaining farms milked twice per day (2X). Two years of selected average business and cost of milk production factors from the two milking frequency groups are compared in Table 67.

In 1999, the 3X farms averaged 5 more cows per farm, sold 2 percent more milk per cow, decreased the total cost of producing milk by one percent, and showed an average 12 percent decrease in net farm income, compared to the 2X farm averages for 1998. The 2X farms increased milk output per cow 3.6 percent, decreased total production costs \$0.11 per hundredweight but decreased average net farm income \$11,053 per farm in 1999 compared to 1998.

The 3X farms compared with the 2X farms averaged 22 percent more milk per cow and 55 percent additional milk per worker in 1999, very similar to the differences found in 1998. In 1999 the average total cost of producing milk was 10 percent lower on 3X farms than on 2X dairies, the same as in 1998. On the average, farmers milking 3X sold more milk per cow and per worker, produced milk at lower costs per hundredweight and received higher returns for their labor, management and capital than the average dairy farmer milking 2X. However, milking frequency was not the only, and probably not the most important, factor that contributed to financial success on these dairy farms. Comparison of herd size, crop yields, labor and capital efficiency indicate there are other important management differences contributing to higher profits.

Other Comparisons

Forty-two dairy renter farms were smaller, on average, than the 314 owner-operated farms, but averaged higher returns to equity capital than the average for 314 owned dairy farms (Table 68). E.B. 2000-13 contains detailed information on Eastern New York dairy renters. Data for the top 10 percent of farms by rate of return on all capital without appreciation is presented in Table 69. Additional data for the top 10 percent of farms is presented in many of the first 44 tables of this publication. Summary data for the 314 specialized dairy farms are presented in Table 70.

Table 52.

**INCOME & EXPENSE COMPARISON FOR
FARMS BUYING MAJORITY OF FORAGES VERSUS SIMILAR SIZE FARMS GROWING FORAGES, 1999**

| Item | 20 Farms Buying Majority of Forages | | 38 Similar Size Farms Growing Forages | |
|--|--|-----------------|--|-----------------|
| Number of cows | 169 | | 167 | |
| Pounds of Milk Sold | 3,429,567 | | 3,290,570 | |
| <u>Income</u> | <u>Per Cow</u> | <u>Per Cwt.</u> | <u>Per Cow</u> | <u>Per Cwt.</u> |
| Milk sold | \$3,015 | \$14.85 | \$2,931 | \$14.87 |
| Dairy cattle | 314 | 1.55 | 168 | .85 |
| Dairy calves | 45 | 0.22 | 24 | .12 |
| Other livestock | 1 | 0.01 | 0 | .00 |
| Crops | 2 | 0.01 | 31 | .16 |
| Miscellaneous | 68 | 0.34 | 172 | .87 |
| Total Accrual Receipts | \$3,445 | \$16.98 | \$3,326 | \$16.88 |
| <u>Expenses</u> | | | | |
| Hired Labor | \$300 | \$1.48 | \$346 | \$1.75 |
| Dairy grain & conc. | 765 | 3.77 | 717 | 3.64 |
| Dairy Roughage | 408 | 2.01 | 22 | .11 |
| Nondairy | 0 | 0.00 | 1 | .00 |
| Mach. Hire, rent/lease | 47 | 0.23 | 89 | .45 |
| Machinery repairs/veh. | 63 | 0.31 | 189 | .96 |
| Fuel, oil & greaser | 27 | 0.13 | 54 | .27 |
| Replacement livestock | 192 | 0.95 | 70 | .35 |
| Breeding | 21 | 0.10 | 28 | .14 |
| Veterinary & medicine | 83 | 0.41 | 80 | .40 |
| Milk marketing | 118 | 0.58 | 114 | .58 |
| Bedding | 46 | 0.23 | 28 | .14 |
| Milking supplies | 70 | 0.35 | 75 | .38 |
| Cattle lease/rent | 2 | 0.01 | 1 | .01 |
| Custom boarding | 25 | 0.13 | 25 | .13 |
| BST expense | 38 | 0.19 | 29 | .15 |
| Other livestock expenses | 30 | 0.15 | 45 | .23 |
| Fertilizer & lime | 1 | 0.01 | 82 | .42 |
| Seeds & plants | 3 | 0.01 | 49 | .25 |
| Spray, other crop expenses | 0 | 0.00 | 62 | .31 |
| Land/bldg/fence repair | 55 | 0.27 | 67 | .34 |
| Taxes | 18 | 0.09 | 54 | .27 |
| Rent & lease | 54 | 0.26 | 62 | .31 |
| Insurance | 23 | 0.11 | 43 | .22 |
| Utilities | 71 | 0.35 | 72 | .36 |
| Interest paid | 150 | 0.74 | 162 | .82 |
| Miscellaneous | 35 | 0.17 | 29 | .15 |
| Total Operating Expenses | \$2,646 | \$13.04 | \$2,593 | \$13.16 |
| Expansion livestock | \$141 | \$0.69 | \$56 | \$.28 |
| Machinery depreciation | 57 | 0.28 | 142 | .72 |
| Building depreciation | 48 | 0.24 | 91 | .46 |
| Total Accrual Expenses | \$2,892 | \$14.25 | \$2,881 | \$14.62 |
| Net Farm Income (without appreciation) | \$553 | \$2.73 | \$445 | \$2.26 |

Table 53.

**SELECTED BUSINESS FACTORS FOR FARMS BUYING MAJORITY OF FORAGES
VERSUS SIMILAR SIZE FARMS GROWING FORAGES, 1999**

| Selected Factors | 20 Farms Buying Majority of Forages | 38 Farms Growing Forages |
|--|--|-----------------------------|
| <u>Size of Business</u> | | |
| Average number of cows | 169 | 167 |
| Average number of heifers | 62 | 127 |
| Milk sold, lbs. | 3,429,567 | 3,290,570 |
| Worker equivalent | 3.34 | 4.56 |
| Total tillable acres | 54 | 481 |
| Tillable acres harvested | 0 | 474 |
| <u>Rates of Production</u> | | |
| Milk sold per cow, lbs. | 20,311 | 19,751 |
| Hay DM per acre, tons | 0.0 | 2.51 |
| Corn silage per acre, tons | 0.0 | 15.13 |
| <u>Labor Efficiency & Costs</u> | | |
| Cows per worker | 51 | 37 |
| Milk sold/worker, lbs. | 1,026,816 | 721,616 |
| Hired labor cost/cwt. | \$1.48 | \$1.75 |
| Hired labor cost/worker | \$29,087 | \$23,326 |
| Hired labor cost as % of milk sales | 9.9% | 11.8% |
| <u>Cost Control</u> | | |
| Grain & conc. purchased as % of milk sales | 25% | 24% |
| Grain & conc. per cwt. milk | \$3.77 | \$3.64 |
| Dairy feed & crop expense per cwt. milk | \$5.78 | \$4.73 |
| Labor & mach. costs/cow | \$721 | \$1,160 |
| Total farm operating costs per cwt. sold | \$13.04 | \$13.16 |
| Interest costs per cwt. milk | \$0.74 | \$0.82 |
| Milk marketing costs per cwt. milk sold | \$0.58 | \$0.58 |
| Operating cost of producing cwt. of milk | \$11.61 | \$11.43 |
| <u>Capital Efficiency</u> (average for the year) | | |
| Farm capital per cow | \$3,651 | \$6,955 |
| Mach. & equip. per cow | \$461 | \$1,400 |
| Asset turnover ratio | 0.96 | 0.50 |
| <u>Income Generation</u> | | |
| Gross milk sales per cow | \$3,015 | \$2,931 |
| Gross milk sales per cwt. | \$14.85 | \$14.87 |
| Net milk sales per cwt. | \$14.27 | \$14.30 |
| Dairy cattle sales per cow | \$314 | \$168 |
| Dairy calf sales per cow | \$45 | \$24 |
| <u>Profitability</u> | | |
| Net farm income w/o apprec. | \$93,495 | \$74,342 |
| Net farm income w/apprec. | \$106,683 | \$102,797 |
| Labor & mgt. income per oper./manager | \$61,233 | \$18,815 |
| Rate of return on equity capital w/o apprec. | 29.9% | 2.9% |
| Rate of return on all capital w/o apprec. | 13.01% | 4.2% |
| <u>Cash flow</u> | | |
| Principal & int. payments per cow, 1999 | \$615 | \$457 |
| Net cash flow | \$113,775 | \$136,386 |
| <u>Financial Summary</u> | | |
| Farm net worth, end year | \$217,187 | \$780,005 |
| Farm net worth change from last year, % | 44.9% | 6.5% |
| Debt to asset ratio | 0.68 | 0.35 |
| Farm debt per cow | \$2,515 | \$2,456 |

Table 54.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE
292 New York Dairy Farms, 1999

| Item | Farms with: | Conventional | | Freestall | | |
|---|-------------|--------------|-----------|------------|--------------|------------|
| | | <= 60 Cows | >60 Cows | <=150 Cows | 151-300 Cows | ≥300 Cows |
| Number of farms | | 53 | 52 | 63 | 55 | 69 |
| <u>Cropping Program Analysis</u> | | | | | | |
| Total Tillable acres | | 163 | 296 | 308 | 557 | 1,149 |
| Tillable acres rented* | | 60 | 124 | 141 | 261 | 531 |
| Hay crop acres* | | 104 | 177 | 164 | 266 | 486 |
| Corn silage acres* | | 27 | 61 | 85 | 196 | 515 |
| Hay crop, tons DM/acre | | 1.9 | 2.2 | 2.4 | 2.7 | 3.6 |
| Corn silage, tons/acre | | 11.8 | 14.7 | 14.1 | 15.2 | 17.3 |
| Oats, bushels/acre | | 38 | 63 | 45 | 61 | 36 |
| Forage DM per cow, tons | | 6.6 | 8.2 | 7.7 | 7.9 | 7.9 |
| Tillable acres/cow | | 3.5 | 3.4 | 2.9 | 2.5 | 1.9 |
| Fert. & lime exp./tillable acre | | \$19.93 | \$22.70 | \$26.23 | \$33.97 | \$36.28 |
| Total machinery costs | | \$25,558 | \$47,622 | \$56,876 | \$119,638 | \$285,367 |
| Machinery cost/tillable acre | | \$157 | \$161 | \$185 | \$215 | \$248 |
| <u>Dairy Analysis</u> | | | | | | |
| Number of cows | | 47 | 87 | 105 | 219 | 601 |
| Number of heifers | | 34 | 70 | 74 | 165 | 436 |
| Milk sold, lbs. | | 794,585 | 1,572,844 | 2,019,084 | 4,572,742 | 13,630,992 |
| Milk sold/cow, lbs. | | 16,920 | 18,027 | 19,267 | 20,833 | 22,694 |
| Operating cost of prod. milk/cwt. | | \$10.15 | \$10.40 | \$11.34 | \$11.27 | \$11.34 |
| Total cost of prod. milk/cwt. | | \$17.63 | \$15.88 | \$15.85 | \$14.65 | \$13.70 |
| Price/cwt. milk sold | | \$14.86 | \$14.85 | \$14.85 | \$14.98 | \$14.89 |
| Purchased dairy feed/cow | | \$694 | \$648 | \$787 | \$790 | \$911 |
| Purchased dairy feed/cwt. milk | | \$4.11 | \$3.58 | \$4.09 | \$3.78 | \$4.02 |
| Purchased grain & conc. as % milk rec. | | 25% | 23% | 25% | 24% | 25% |
| Purchased feed & crop exp./cwt. milk | | \$4.82 | \$4.55 | \$5.01 | \$4.67 | \$4.75 |
| <u>Capital Efficiency</u> | | | | | | |
| Farm capital/worker | | \$195,392 | \$210,516 | \$252,922 | \$249,401 | \$266,995 |
| Farm capital/cow | | \$8,315 | \$7,453 | \$7,347 | \$6,514 | \$5,931 |
| Farm capital/tillable acre owned | | \$3,794 | \$3,770 | \$4,619 | \$4,820 | \$5,768 |
| Real estate/cow | | \$4,222 | \$3,298 | \$3,330 | \$2,561 | \$2,269 |
| Machinery investment/cow | | \$1,734 | \$1,565 | \$1,423 | \$1,239 | \$1,004 |
| Asset turnover ratio | | 0.37 | 0.43 | 0.46 | 0.58 | 0.67 |
| <u>Labor Efficiency</u> | | | | | | |
| Worker equivalent | | 2.00 | 3.08 | 3.05 | 5.72 | 13.35 |
| Operator/manager equivalent | | 1.33 | 1.59 | 1.46 | 1.79 | 2.13 |
| Milk sold/worker, lbs. | | 397,293 | 510,664 | 661,995 | 799,430 | 1,021,048 |
| Cows/worker | | 24 | 28 | 34 | 38 | 45 |
| Labor cost/cow | | \$872 | \$709 | \$614 | \$617 | \$653 |
| Labor cost/tillable acre | | \$251 | \$208 | \$209 | \$243 | \$342 |
| <u>Profitability & Balance Sheet Analysis</u> | | | | | | |
| Net farm income (without appreciation) | | \$25,834 | \$50,194 | \$45,437 | \$115,430 | \$337,256 |
| Labor & management income/operator | | \$ 3,537 | \$12,243 | \$10,141 | \$38,510 | \$113,628 |
| Rate return on all capital with appreciation | | 2.0% | 4.8% | 4.5% | 9.5% | 12.3% |
| Farm debt/cow | | \$1,967 | \$1,965 | \$2,633 | \$2,607 | \$2,901 |
| Percent equity | | 76% | 74% | 64% | 61% | 52% |

*Average of all farms, not only those reporting data.

Table 55.

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS
53 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1999

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|------------------------------------|--|-------------------------------------|-----------------------------------|
| Worker Equiv- Alent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| 3.36 | 60 | 1,249,557 | 23,442 | 4.1 | 24 | 42 | 866,834 |
| 2.82 | 57 | 1,097,188 | 21,649 | 3.2 | 20 | 34 | 623,722 |
| 2.49 | 54 | 997,166 | 19,974 | 2.7 | 17 | 31 | 511,506 |
| 2.16 | 52 | 951,687 | 18,273 | 2.3 | 15 | 27 | 431,444 |
| 1.98 | 51 | 842,501 | 17,468 | 2.0 | 14 | 26 | 405,806 |
| ----- | | | | | | | |
| 1.83 | 47 | 771,571 | 16,658 | 1.8 | 11 | 25 | 382,448 |
| 1.71 | 46 | 700,887 | 15,691 | 1.6 | 10 | 23 | 352,446 |
| 1.52 | 42 | 636,598 | 14,698 | 1.4 | 10 | 20 | 326,229 |
| 1.39 | 37 | 553,671 | 13,054 | 1.2 | 8 | 18 | 266,346 |
| 1.12 | 30 | 319,766 | 8,782 | 0.9 | 6 | 15 | 193,003 |
| ----- | | | | | | | |
| Cost Control | | | | | | | |
| Grain Bought Per Cow | % Grain is of Milk Receipts | Machinery Costs Per Cow | Labor & Machinery Costs Per Cow | Feed & Crop Expenses Per Cow | Feed & Crop Expenses Per Cwt. Milk | | |
| \$291 | 15% | \$284 | \$892 | \$398 | \$3.31 | | |
| 435 | 19 | 370 | 1,109 | 509 | 3.52 | | |
| 495 | 21 | 430 | 1,222 | 630 | 3.81 | | |
| 537 | 22 | 482 | 1,301 | 697 | 4.14 | | |
| 558 | 22 | 540 | 1,361 | 745 | 4.56 | | |
| ----- | | | | | | | |
| 601 | 24 | 580 | 1,453 | 784 | 4.87 | | |
| 670 | 27 | 614 | 1,585 | 898 | 5.13 | | |
| 735 | 30 | 670 | 1,707 | 1,036 | 5.65 | | |
| 818 | 33 | 742 | 1,847 | 1,154 | 6.58 | | |
| 1,066 | 43 | 857 | 2,090 | 1,343 | 7.58 | | |
| ----- | | | | | | | |
| Value and Cost of Production | | | Profitability | | | | |
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Apprec. | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. | |
| | | | Total | Per Cow | | | |
| \$3,495 | \$6.88 | \$13.66 | \$67,606 | \$1,399 | \$37,900 | \$56,577 | |
| 3,255 | 8.35 | 14.90 | 51,727 | 1,028 | 24,910 | 41,828 | |
| 3,049 | 8.67 | 15.48 | 39,496 | 861 | 15,940 | 25,057 | |
| 2,849 | 9.12 | 16.35 | 34,679 | 735 | 12,211 | 22,037 | |
| 2,554 | 9.98 | 16.91 | 29,487 | 652 | 8,205 | 18,746 | |
| ----- | | | | | | | |
| 2,423 | 10.53 | 17.89 | 23,104 | 532 | 2,786 | 15,378 | |
| 2,294 | 11.17 | 19.10 | 19,484 | 418 | 22 | 12,474 | |
| 2,169 | 11.68 | 20.80 | 14,070 | 264 | -6,642 | 9,145 | |
| 1,960 | 12.74 | 23.78 | 4,661 | 104 | -14,728 | 2,663 | |
| 1,208 | 15.67 | 29.51 | -11,863 | -369 | -37,507 | -11,715 | |

Table 56.

FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
52 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1999

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|------------------------------------|--|-------------------------------------|-----------------------------------|
| Worker Equiv- Alent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| 4.87 | 154 | 2,730,517 | 24,029 | 4.4 | 24 | 42 | 770,362 |
| 4.07 | 106 | 1,955,695 | 20,762 | 3.2 | 20 | 38 | 701,390 |
| 3.63 | 98 | 1,847,727 | 19,622 | 2.8 | 19 | 35 | 659,484 |
| 3.24 | 89 | 1,657,243 | 18,787 | 2.5 | 18 | 32 | 602,209 |
| 3.17 | 81 | 1,504,242 | 18,451 | 2.1 | 16 | 30 | 568,430 |
| ----- | | | | | | | |
| 2.93 | 77 | 1,441,765 | 17,688 | 2.0 | 15 | 29 | 524,998 |
| 2.72 | 74 | 1,362,999 | 17,211 | 1.9 | 14 | 27 | 461,326 |
| 2.52 | 70 | 1,232,960 | 16,396 | 1.7 | 12 | 25 | 405,822 |
| 2.26 | 67 | 1,168,162 | 15,643 | 1.4 | 9 | 22 | 371,817 |
| 1.80 | 64 | 1,018,863 | 14,002 | 1.0 | 7 | 19 | 315,077 |
| ----- | | | | | | | |
| Cost Control | | | | | | | |
| Grain Bought Per Cow | % Grain is of Milk Receipts | Machinery Costs Per Cow | Labor & Machinery Costs Per Cow | Feed & Crop Expenses Per Cow | Feed & Crop Expenses Per Cwt. Milk | | |
| \$320 | 12% | \$283 | \$887 | \$514 | \$3.03 | | |
| 464 | 18 | 422 | 988 | 635 | 3.48 | | |
| 538 | 20 | 466 | 1,072 | 710 | 3.77 | | |
| 568 | 21 | 515 | 1,164 | 774 | 4.07 | | |
| 608 | 22 | 562 | 1,237 | 824 | 4.39 | | |
| ----- | | | | | | | |
| 646 | 24 | 591 | 1,307 | 857 | 4.64 | | |
| 687 | 26 | 629 | 1,414 | 881 | 4.95 | | |
| 723 | 28 | 650 | 1,496 | 919 | 5.28 | | |
| 769 | 30 | 700 | 1,644 | 970 | 5.68 | | |
| 902 | 35 | 837 | 1,799 | 1,140 | 6.74 | | |
| ----- | | | | | | | |
| Value and Cost of Production | | | Profitability | | | | |
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Apprec. | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. | |
| | | | Total | Per Cow | | | |
| \$3,471 | \$7.60 | \$13.02 | \$118,857 | \$1,145 | \$54,023 | \$81,736 | |
| 3,082 | 8.82 | 14.10 | 83,539 | 916 | 37,675 | 47,776 | |
| 2,928 | 9.47 | 14.49 | 70,691 | 847 | 29,425 | 36,423 | |
| 2,810 | 9.74 | 15.22 | 62,069 | 689 | 21,755 | 31,469 | |
| 2,728 | 10.20 | 15.87 | 51,419 | 574 | 17,112 | 26,330 | |
| ----- | | | | | | | |
| 2,661 | 10.76 | 16.40 | 42,228 | 489 | 12,169 | 21,569 | |
| 2,553 | 11.12 | 16.86 | 33,666 | 449 | 7,566 | 17,147 | |
| 2,436 | 11.51 | 17.41 | 29,170 | 371 | 1,784 | 13,183 | |
| 2,280 | 12.03 | 18.26 | 21,667 | 294 | -9,900 | 2,177 | |
| 2,051 | 13.97 | 20.60 | 3,657 | 64 | - 34,295 | -20,718 | |

Table 57.

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
63 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 1999

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|------------------------------------|--|-------------------------------------|-----------------------------------|
| Worker Equiv- Alent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| 4.88 | 147 | 3,202,363 | 23,465 | 5.7 | 21 | 59 | 1,099,774 |
| 4.15 | 141 | 2,826,420 | 22,587 | 3.4 | 19 | 46 | 932,011 |
| 3.76 | 132 | 2,591,385 | 21,572 | 3.0 | 17 | 43 | 819,869 |
| 3.40 | 121 | 2,430,389 | 20,668 | 2.6 | 17 | 39 | 741,613 |
| 3.22 | 115 | 2,225,447 | 19,876 | 2.3 | 16 | 38 | 686,560 |
| <hr/> | | | | | | | |
| 2.90 | 108 | 2,035,131 | 19,182 | 2.1 | 14 | 34 | 640,699 |
| 2.59 | 95 | 1,724,716 | 18,501 | 1.9 | 13 | 32 | 602,729 |
| 2.37 | 85 | 1,479,864 | 17,675 | 1.6 | 11 | 29 | 572,122 |
| 2.11 | 74 | 1,250,141 | 15,995 | 1.4 | 10 | 28 | 497,571 |
| 1.62 | 49 | 839,593 | 12,201 | 1.1 | 7 | 19 | 324,190 |
| <hr/> | | | | | | | |
| Cost Control | | | | | | | |
| Grain Bought Per Cow | % Grain is of Milk Receipts | Machinery Costs Per Cow | Labor & Machinery Costs Per Cow | Feed & Crop Expenses Per Cow | Feed & Crop Expenses Per Cwt. Milk | | |
| \$398 | 16% | \$278 | \$755 | \$504 | \$3.37 | | |
| 532 | 20 | 394 | 907 | 757 | 4.15 | | |
| 612 | 22 | 422 | 1,002 | 872 | 4.48 | | |
| 648 | 24 | 455 | 1,073 | 911 | 4.76 | | |
| 680 | 25 | 520 | 1,125 | 935 | 4.95 | | |
| <hr/> | | | | | | | |
| 739 | 26 | 542 | 1,182 | 981 | 5.10 | | |
| 775 | 27 | 595 | 1,236 | 1,033 | 5.31 | | |
| 833 | 29 | 682 | 1,400 | 1,093 | 5.55 | | |
| 929 | 31 | 776 | 1,552 | 1,176 | 6.08 | | |
| 1,063 | 37 | 908 | 1,859 | 1,348 | 6.82 | | |
| <hr/> | | | | | | | |
| Value and Cost of Production | | | Profitability | | | | |
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Apprec. | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. | |
| | | | Total | Per Cow | | | |
| \$3499 | \$8.40 | \$13.54 | \$105,781 | \$892 | \$59,306 | \$132,279 | |
| 3,279 | 9.73 | 14.11 | 90,022 | 792 | 42,957 | 61,621 | |
| 3,117 | 10.28 | 14.75 | 77,375 | 686 | 35,110 | 49,786 | |
| 3,056 | 10.85 | 15.38 | 67,071 | 571 | 17,345 | 41,699 | |
| 2,995 | 11.16 | 15.91 | 54,109 | 521 | 12,461 | 34,045 | |
| <hr/> | | | | | | | |
| 2,883 | 11.46 | 16.41 | 36,762 | 419 | 7,745 | 26,599 | |
| 2,748 | 11.83 | 16.66 | 25,170 | 293 | -692 | 18,504 | |
| 2,557 | 12.33 | 17.19 | 16,133 | 199 | -7,054 | 10,198 | |
| 2,352 | 13.43 | 18.04 | 8,502 | 92 | -13,987 | 1,712 | |
| 1,871 | 14.47 | 21.75 | - 6,797 | - 60 | -32,477 | -11,848 | |

Table 58

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS
55 Freestall Barn Dairy Farms with 151-300 Cows, New York, 1999

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|------------------------------------|--|-------------------------------------|-----------------------------------|
| Worker Equiv- Alent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| 8.90 | 297 | 6,965,476 | 25,959 | 4.8 | 23 | 55 | 1,180,513 |
| 7.39 | 280 | 6,123,854 | 24,416 | 3.8 | 20 | 50 | 994,280 |
| 6.60 | 258 | 5,579,962 | 23,228 | 3.3 | 18 | 47 | 882,331 |
| 6.10 | 238 | 5,288,803 | 22,273 | 3.1 | 18 | 42 | 846,958 |
| 5.83 | 228 | 4,804,482 | 21,486 | 2.9 | 17 | 41 | 812,892 |
| | | | | | | | |
| 5.57 | 214 | 4,348,085 | 20,629 | 2.6 | 16 | 38 | 784,754 |
| 4.96 | 198 | 3,939,776 | 19,499 | 2.4 | 15 | 36 | 750,910 |
| 4.61 | 185 | 3,565,149 | 18,557 | 2.2 | 14 | 34 | 701,611 |
| 4.29 | 173 | 3,283,627 | 17,405 | 1.8 | 11 | 31 | 660,157 |
| 3.96 | 156 | 2,811,352 | 15,725 | 1.2 | 9 | 28 | 583,431 |
| | | | | | | | |
| Cost Control | | | | | | | |
| Grain Bought Per Cow | % Grain is of Milk Receipts | Machinery Costs Per Cow | Labor & Machinery Costs Per Cow | Feed & Crop Expenses Per Cow | Feed & Crop Expenses Per Cwt. Milk | | |
| \$448 | 14% | \$349 | \$803 | \$700 | \$3.36 | | |
| 637 | 21 | 417 | 896 | 819 | 4.11 | | |
| 680 | 22 | 455 | 968 | 864 | 4.33 | | |
| 723 | 23 | 501 | 1,054 | 936 | 4.46 | | |
| 749 | 25 | 537 | 1,141 | 962 | 4.59 | | |
| | | | | | | | |
| 782 | 26 | 564 | 1,214 | 987 | 4.89 | | |
| 819 | 27 | 591 | 1,305 | 1,015 | 4.97 | | |
| 870 | 28 | 622 | 1,380 | 1,059 | 5.15 | | |
| 909 | 30 | 703 | 1,478 | 1,151 | 5.64 | | |
| 1,038 | 36 | 812 | 1,617 | 1,296 | 6.40 | | |
| | | | | | | | |
| Value and Cost of Production | | | Profitability | | | | |
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Apprec. | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. | |
| | | | Total | Per Cow | | | |
| \$4,048 | \$9.11 | \$12.57 | \$307,993 | \$1,287 | \$155,954 | \$302,351 | |
| 3,626 | 9.86 | 13.22 | 217,554 | 861 | 110,405 | 188,506 | |
| 3,430 | 10.34 | 13.79 | 163,915 | 757 | 68,703 | 146,148 | |
| 3,298 | 10.51 | 14.20 | 136,148 | 690 | 56,765 | 125,984 | |
| 3,204 | 10.89 | 14.76 | 128,773 | 589 | 45,661 | 99,684 | |
| | | | | | | | |
| 3,078 | 11.73 | 15.08 | 107,451 | 484 | 34,085 | 73,593 | |
| 2,918 | 12.16 | 15.39 | 86,609 | 410 | 22,418 | 58,794 | |
| 2,776 | 12.72 | 16.08 | 64,416 | 321 | 11,250 | 40,024 | |
| 2,593 | 13.22 | 16.68 | 30,768 | 158 | -3,441 | 11,494 | |
| 2,329 | 14.40 | 17.78 | -26,452 | -123 | -47,671 | -67,566 | |

Table 59.

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
69 Freestall Barn Dairy Farms with 300 or More Cows, New York, 1999

| Size of Business | | | Rates of Production | | | Labor Efficiency | |
|------------------------------|-----------------------------------|--------------------------------------|---------------------------------------|------------------------------------|--|-------------------------------------|-----------------------------------|
| Worker Equiv- Alent | No. of Cows | Pounds Milk Sold | Pounds Milk Sold Per Cow | Tons Hay Crop DM/Acre | Tons Corn Silage Per Acre | Cows Per Worker | Pounds Milk Sold Per Worker |
| 30.13 | 1,492 | 35,463,663 | 25,925 | 6.1 | 24 | 59 | 1,398,957 |
| 19.38 | 916 | 21,330,989 | 24,421 | 5.0 | 21 | 53 | 1,234,591 |
| 15.37 | 677 | 15,899,554 | 23,720 | 4.4 | 20 | 49 | 1,126,537 |
| 14.46 | 589 | 13,831,992 | 23,381 | 4.0 | 19 | 47 | 1,064,267 |
| 12.13 | 530 | 11,689,937 | 22,842 | 3.8 | 19 | 46 | 1,009,216 |
| 10.93 | 445 | 9,793,417 | 22,157 | 3.6 | 17 | 45 | 966,074 |
| 9.84 | 406 | 9,089,815 | 21,648 | 3.4 | 16 | 43 | 929,661 |
| 8.92 | 389 | 8,628,060 | 21,040 | 2.9 | 15 | 40 | 872,738 |
| 8.13 | 367 | 7,712,372 | 20,420 | 2.1 | 14 | 38 | 802,159 |
| 6.61 | 322 | 5,989,077 | 17,594 | 1.4 | 11 | 33 | 669,307 |
| Cost Control | | | | | | | |
| Grain Bought Per Cow | % Grain is of Milk Receipts | Machinery Costs Per Cow | Labor & Machinery Costs Per Cow | Feed & Crop Expenses Per Cow | Feed & Crop Expenses Per Cwt. Milk | | |
| \$617 | 32% | \$246 | \$731 | \$841 | \$3.97 | | |
| 691 | 28 | 368 | 899 | 922 | 4.35 | | |
| 756 | 27 | 409 | 1,022 | 978 | 4.44 | | |
| 809 | 27 | 442 | 1,088 | 1,014 | 4.59 | | |
| 839 | 26 | 471 | 1,130 | 1,055 | 4.70 | | |
| 871 | 25 | 494 | 1,164 | 1,101 | 4.82 | | |
| 901 | 24 | 515 | 1,191 | 1,134 | 5.00 | | |
| 928 | 23 | 548 | 1,231 | 1,161 | 5.13 | | |
| 973 | 22 | 605 | 1,312 | 1,214 | 5.38 | | |
| 1,042 | 20 | 725 | 1,441 | 1,312 | 6.05 | | |
| Value and Cost of Production | | | Profitability | | | | |
| Milk Receipts Per Cow | Oper. Cost Milk Per Cwt. | Total Cost Production Per Cwt. | Net Farm Income Without Apprec. | | Labor & Mgmt. Inc. Per Oper. | Change in Net Worth w/Apprec. | |
| | | | Total | Per Cow | | | |
| \$3,948 | \$9.10 | \$11.71 | \$1,117,509 | \$1,035 | \$737,887 | \$797,943 | |
| 3,654 | 10.15 | 12.53 | 679,305 | 841 | 331,566 | 520,123 | |
| 3,550 | 10.70 | 12.97 | 426,163 | 752 | 209,766 | 338,284 | |
| 3,455 | 11.13 | 13.54 | 305,873 | 638 | 140,966 | 242,994 | |
| 3,369 | 11.51 | 14.02 | 258,146 | 534 | 98,432 | 182,176 | |
| 3,265 | 11.81 | 14.33 | 225,101 | 437 | 73,125 | 149,863 | |
| 3,197 | 12.11 | 14.70 | 182,181 | 369 | 57,971 | 100,949 | |
| 3,107 | 12.37 | 14.99 | 143,273 | 312 | 39,379 | 65,273 | |
| 2,988 | 12.85 | 15.22 | 101,868 | 250 | 21,884 | 15,739 | |
| 2,681 | 13.34 | 16.13 | 44,602 | 103 | -20,310 | -89,510 | |

Table 60.

COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 71 New York Dairy Farms, 1990 - 1999

| Selected Factors | 1990 | 1991 | 1992 | 1993 |
|--|-----------|-----------|-----------|-----------|
| Milk receipts per cwt. milk | \$14.87 | \$12.93 | \$13.53 | \$13.20 |
| <u>Size of Business</u> | | | | |
| Average number of cows | 139 | 148 | 168 | 183 |
| Average number of heifers | 120 | 127 | 129 | 140 |
| Milk sold, cwt. | 25,551 | 27,592 | 32,405 | 35,607 |
| Worker equivalent | 4.02 | 4.25 | 4.55 | 4.74 |
| Total tillable acres | 404 | 418 | 434 | 450 |
| <u>Rates of Production</u> | | | | |
| Milk sold per cow, lbs. | 18,410 | 18,700 | 19,344 | 19,426 |
| Hay DM per acre, tons | 2.8 | 2.3 | 2.7 | 2.7 |
| Corn silage per acre, tons | 13 | 13 | 13 | 15 |
| <u>Labor Efficiency</u> | | | | |
| Cows per worker | 35 | 35 | 37 | 39 |
| Milk sold per worker, lbs. | 636,168 | 649,574 | 712,907 | 751,203 |
| <u>Cost Control</u> | | | | |
| Grain & concn. purchased as % of milk sales | 28% | 29% | 28% | 28% |
| Dairy feed & crop expense per cwt. milk | \$5.25 | \$4.73 | \$4.80 | \$4.68 |
| Operating cost of producing cwt. milk | \$10.95 | \$9.94 | \$10.06 | \$9.84 |
| Total cost of producing cwt. milk | \$16.51 | \$15.18 | \$15.14 | \$14.73 |
| Hired labor cost per cwt. | \$1.49 | \$1.37 | \$1.38 | \$1.47 |
| Interest paid per cwt. | \$0.94 | \$0.97 | \$0.82 | \$0.78 |
| Labor & machinery costs per cow | \$1,071 | \$1,029 | \$1,053 | \$1,065 |
| Replacement livestock expense | \$3,213 | \$2,979 | \$4,501 | \$5,801 |
| Expansion livestock expense | \$8,125 | \$15,765 | \$19,591 | \$13,567 |
| <u>Capital Efficiency</u> | | | | |
| Farm capital per cow | \$7,270 | \$7,394 | \$7,484 | \$7,500 |
| Machinery & equipment per cow | \$1,437 | \$1,472 | \$1,468 | \$1,478 |
| Real estate per cow | \$3,307 | \$3,442 | \$3,559 | \$3,539 |
| Livestock investment per cow | \$1,518 | \$1,526 | \$1,519 | \$1,537 |
| Asset turnover ratio | 0.48 | 0.43 | 0.45 | 0.44 |
| <u>Profitability</u> | | | | |
| Net farm income without appreciation | \$66,802 | \$38,204 | \$70,431 | \$67,218 |
| Net farm income with appreciation | \$81,907 | \$58,764 | \$91,584 | \$86,210 |
| Labor & management income per operator/manager | \$22,650 | \$-457 | \$26,982 | \$19,654 |
| Rate return on: | | | | |
| Equity capital with appreciation | 3.6% | 0.2% | 3.1% | 2.5% |
| All capital with appreciation | 5.1% | 2.9% | 4.2% | 3.8% |
| All capital without appreciation | 3.7% | 0.8% | 2.3% | 2.2% |
| <u>Financial Summary, End Year</u> | | | | |
| Farm net worth | \$621,880 | \$632,215 | \$722,813 | \$743,866 |
| Change in net worth with appreciation | \$32,231 | \$7,461 | \$50,707 | \$33,816 |
| Debt to asset ratio | 0.31 | 0.33 | 0.30 | 0.32 |
| Farm debt per cow | \$2,240 | \$2,295 | \$2,167 | \$2,192 |

Table 60. (continued)

COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 71 New York Dairy Farms, 1990 - 1999

| 1994 | 1995 | 1996 | 1997 | 1998 | 1999 |
|-----------|-----------|-----------|-----------|-------------|-------------|
| \$13.50 | \$13.06 | \$14.96 | \$13.70 | \$15.70 | \$15.07 |
| 198 | 215 | 229 | 240 | 252 | 262 |
| 154 | 167 | 176 | 189 | 202 | 209 |
| 41,179 | 45,127 | 48,774 | 52,329 | 54,649 | 58,918 |
| 5.09 | 5.52 | 5.71 | 5.93 | 6.19 | 6.51 |
| 471 | 498 | 527 | 547 | 565 | 596 |
| 20,812 | 20,985 | 21,264 | 21,805 | 22,046 | 22,470 |
| 3.0 | 2.6 | 2.7 | 2.4 | 2.9 | 2.7 |
| 16 | 14 | 14 | 14 | 16 | 14 |
| 39 | 39 | 40 | 40 | 41 | 40 |
| 809,018 | 817,518 | 854,186 | 882,445 | 882,859 | 905,038 |
| 27% | 27% | 29% | 31% | 24% | 24% |
| \$4.51 | \$4.37 | \$5.27 | \$5.29 | \$4.97 | \$4.60 |
| \$9.89 | \$10.20 | \$11.13 | \$11.32 | \$10.74 | \$10.36 |
| \$14.68 | \$14.74 | \$15.80 | \$15.83 | \$15.31 | \$15.10 |
| \$1.42 | \$1.42 | \$1.47 | \$1.46 | \$1.48 | \$1.53 |
| \$0.74 | \$0.82 | \$0.80 | \$0.83 | \$0.79 | \$0.68 |
| \$1,090 | \$1,069 | \$1,127 | \$1,109 | \$1,145 | \$1,247 |
| \$7,063 | \$3,972 | \$4,967 | \$5,762 | \$10,287 | \$9,569 |
| \$13,053 | \$11,342 | \$9,128 | \$10,683 | \$10,734 | \$13,953 |
| \$7,448 | \$7,310 | \$7,282 | \$7,372 | \$7,355 | \$7,516 |
| \$1,470 | \$1,445 | \$1,440 | \$1,468 | \$1,480 | \$1,546 |
| \$3,461 | \$3,397 | \$3,366 | \$3,405 | \$3,343 | \$3,286 |
| \$1,563 | \$1,530 | \$1,508 | \$1,510 | \$1,510 | \$1,560 |
| 0.46 | 0.43 | 0.49 | 0.43 | 0.53 | 0.51 |
| \$87,750 | \$79,332 | \$111,602 | \$59,035 | \$176,768 | \$172,154 |
| \$106,802 | \$91,236 | \$125,830 | \$65,931 | \$204,958 | \$200,446 |
| \$31,199 | \$23,562 | \$47,125 | \$2,255 | \$73,866 | \$75,832 |
| 3.9% | 0.2% | 5.0% | -2.3% | 11.8% | 9.0% |
| 4.5% | 2.7% | 5.6% | 1.2% | 9.6% | 7.8% |
| 3.2% | 2.2% | 4.4% | 0.9% | 7.8% | 6.2% |
| \$794,049 | \$832,489 | \$911,420 | \$902,044 | \$1,034,265 | \$1,139,916 |
| \$52,937 | \$41,192 | \$72,321 | \$-9,094 | \$129,918 | \$107,836 |
| 0.31 | 0.32 | 0.30 | 0.33 | 0.30 | 0.28 |
| \$2,165 | \$2,141 | \$2,102 | \$2,212 | \$2,039 | \$2,017 |

Table 61.

| bST NON-USERS VS. USERS Same 96 Farms, 1995 - 1999 | | | | | | | | | | |
|---|---------------------------------------|-----------|-----------|-----------|-----------|-----------------------------------|-------------|-------------|-------------|-------------|
| Selected Factors | 53 Farms Not Using bST in 1995 - 1999 | | | | | 43 Farms Using bST in 1995 - 1999 | | | | |
| | 1995 | 1996 | 1997 | 1998 | 1999 | 1995 | 1996 | 1997 | 1998 | 1999 |
| Size of Business | | | | | | | | | | |
| Average number of cows | 83 | 86 | 86 | 88 | 89 | 377 | 415 | 445 | 469 | 495 |
| Average number of heifers | 66 | 68 | 70 | 68 | 71 | 281 | 305 | 339 | 378 | 383 |
| Milk sold, cwt. | 14,366 | 14,692 | 15,145 | 15,515 | 15,963 | 83,385 | 92,054 | 101,784 | 106,300 | 115,185 |
| Worker equivalent | 2.91 | 2.74 | 2.82 | 2.80 | 2.80 | 8.82 | 9.46 | 10.22 | 10.81 | 11.33 |
| Total tillable acres | 268 | 273 | 281 | 278 | 281 | 783 | 850 | 888 | 917 | 988 |
| Rates of Production | | | | | | | | | | |
| Milk sold per cow, lbs. | 17,210 | 17,166 | 17,522 | 17,574 | 18,024 | 22,126 | 22,189 | 22,860 | 22,675 | 23,291 |
| Hay DM per acre, tons | 2.1 | 2.3 | 2.1 | 2.3 | 2.3 | 3.5 | 3.2 | 3.0 | 3.7 | 3.1 |
| Corn silage per acre, tons | 12 | 12 | 11 | 11 | 13 | 16 | 16 | 16 | 19 | 16 |
| Labor Efficiency | | | | | | | | | | |
| Cows per worker | 29 | 31 | 30 | 31 | 32 | 43 | 44 | 44 | 43 | 44 |
| Milk sold per worker, lbs. | 493,677 | 536,204 | 537,057 | 554,107 | 570,107 | 945,408 | 973,087 | 995,930 | 983,349 | 1,016,637 |
| Cost Control | | | | | | | | | | |
| Grain & conc. purchased as percent of milk sales | 28% | 31% | 32% | 26% | 25% | 26% | 29% | 32% | 25% | 24% |
| Dairy feed and crop expense per cwt. milk | \$4.50 | \$5.60 | \$5.34 | \$5.11 | \$4.81 | \$4.20 | \$5.24 | \$5.33 | \$4.91 | \$4.68 |
| Labor and mach. costs per cow | \$1,091 | \$1,099 | \$1,107 | \$1,171 | \$1,308 | \$1,007 | \$1,093 | \$1,070 | \$1,128 | \$1,215 |
| Operating cost of producing milk per cwt. | \$10.39 | \$11.19 | \$11.10 | \$11.07 | \$10.21 | \$10.24 | \$11.83 | \$11.68 | \$11.39 | \$11.38 |
| Capital Efficiency (avg. for year) | | | | | | | | | | |
| Farm capital per cow | \$7,293 | \$7,205 | \$7,318 | \$7,446 | \$7,950 | \$6,301 | \$6,291 | \$6,411 | \$6,569 | \$6,762 |
| Machinery and equip. per cow | \$1,557 | \$1,532 | \$1,570 | \$1,603 | \$1,811 | \$1,103 | \$1,135 | \$1,192 | \$1,214 | \$1,261 |
| Asset turnover ratio | 0.38 | 0.44 | 0.40 | 0.46 | 0.44 | 0.57 | 0.64 | 0.58 | 0.65 | 0.63 |
| Profitability | | | | | | | | | | |
| Net farm income w/o apprec. | \$19,890 | \$35,169 | \$18,525 | \$43,157 | \$49,446 | \$139,608 | \$184,922 | \$102,463 | \$296,078 | \$285,606 |
| Net farm income with apprec. | \$27,482 | \$42,077 | \$23,380 | \$56,335 | \$64,283 | \$166,882 | \$202,806 | \$118,563 | \$347,181 | \$348,503 |
| Labor & management income per op/mgr. | \$-7,456 | \$5,453 | \$-8,077 | \$12,602 | \$13,963 | \$52,625 | \$82,916 | \$14,340 | \$131,415 | \$131,739 |
| Rate return on equity capital with appreciation | -6.5% | -0.1% | -3.1% | 3.9% | 5.4% | 6.2% | 9.0% | 1.2% | 18.9% | 13.8% |
| Rate return on all capital with appreciation | -0.7% | 2.7% | -0.2% | 5.2% | 5.8% | 6.8% | 8.0% | 4.2% | 12.7% | 10.4% |
| Financial Summary (end of year) | | | | | | | | | | |
| Farm net worth | \$422,206 | \$441,494 | \$445,783 | \$474,804 | \$514,987 | \$1,300,647 | \$1,420,514 | \$1,411,842 | \$1,661,482 | \$1,865,405 |
| Debt to asset ratio | 0.26 | 0.25 | 0.25 | 0.24 | 0.22 | 0.39 | 0.40 | 0.43 | 0.40 | 0.39 |
| Farm debt per cow | \$1,863 | \$1,770 | \$1,811 | \$1,758 | \$1,742 | \$2,241 | \$2,326 | \$2,569 | \$2,452 | \$2,435 |

Table 62.

**FARM RECEIPTS AND EXPENSES PER COW AND PER
HUNDREDWEIGHT FOR TWO LEVELS OF MILK PRODUCTION
314 New York Dairy Farms, 1999**

| Item | 314 Dairy Farms | | 164 Dairy Farms Milk/Cow <20,000# | | 150 Dairy Farms Milk/Cow ≥20,000# | |
|--|-----------------|-------------|--------------------------------------|-------------|--------------------------------------|-------------|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| <u>ACCRUAL RECEIPTS</u> | | | | | | |
| Milk sales | \$3,190 | \$14.91 | \$2,598 | \$14.97 | \$3,417 | \$14.89 |
| Dairy cattle | 196 | 0.92 | 186 | 1.07 | 201 | 0.87 |
| Dairy calves | 26 | 0.12 | 21 | 0.12 | 28 | 0.12 |
| Other livestock | 9 | 0.04 | 8 | 0.05 | 10 | 0.04 |
| Crops | 74 | 0.35 | 63 | 0.36 | 79 | 0.34 |
| Government receipts | 84 | 0.39 | 102 | 0.59 | 78 | 0.34 |
| All other | <u>50</u> | <u>0.23</u> | <u>51</u> | <u>0.29</u> | <u>50</u> | <u>0.22</u> |
| TOTAL ACCRUAL RECEIPTS | \$3,630 | \$16.96 | \$3,029 | \$17.45 | \$3,862 | \$16.83 |
| <u>ACCRUAL EXPENSES</u> | | | | | | |
| Labor: Hired | \$457 | \$2.14 | \$258 | \$1.49 | \$531 | \$2.31 |
| Feed: Dairy grain & concentrate | 800 | 3.74 | 687 | 3.96 | 844 | 3.68 |
| Dairy roughage | 48 | 0.22 | 37 | 0.21 | 52 | 0.23 |
| Nondairy | 0 | 0.00 | 0 | 0.00 | 0 | 0.00 |
| Machinery: Machine hire, rent & lease | 85 | 0.40 | 65 | 0.37 | 92 | 0.40 |
| Machinery repairs & vehicle expense | 166 | 0.78 | 167 | 0.96 | 166 | 0.72 |
| Fuel, oil & grease | 52 | 0.24 | 57 | 0.33 | 51 | 0.22 |
| Livestock: Replacement livestock | 52 | 0.24 | 55 | 0.32 | 51 | 0.22 |
| Breeding | 36 | 0.17 | 30 | 0.17 | 38 | 0.17 |
| Vet & medicine | 101 | 0.47 | 69 | 0.40 | 113 | 0.49 |
| Milk marketing | 105 | 0.49 | 107 | 0.61 | 105 | 0.46 |
| Bedding | 41 | 0.19 | 22 | 0.13 | 48 | 0.21 |
| Milking supplies | 72 | 0.34 | 72 | 0.42 | 72 | 0.31 |
| Cattle lease & rent | 11 | 0.05 | 2 | 0.01 | 15 | 0.06 |
| Custom boarding | 32 | 0.15 | 10 | 0.06 | 40 | 0.17 |
| bST expense | 52 | 0.24 | 18 | 0.11 | 64 | 0.28 |
| Other livestock expense | 34 | 0.16 | 40 | 0.23 | 31 | 0.14 |
| Crops: Fertilizer & lime | 74 | 0.35 | 78 | 0.45 | 73 | 0.32 |
| Seeds & plants | 44 | 0.20 | 42 | 0.24 | 44 | 0.19 |
| Spray & other crop expense | 51 | 0.24 | 42 | 0.24 | 55 | 0.24 |
| Real Estate: Land, building & fence repair | 58 | 0.27 | 51 | 0.29 | 61 | 0.57 |
| Taxes | 44 | 0.21 | 60 | 0.34 | 38 | 0.17 |
| Rent & lease | 57 | 0.27 | 52 | 0.30 | 59 | 0.26 |
| Other: Insurance | 34 | 0.16 | 44 | 0.25 | 31 | 0.13 |
| Utilities (farm share) | 66 | 0.31 | 72 | 0.42 | 64 | 0.28 |
| Interest paid | 178 | 0.83 | 194 | 0.29 | 172 | 0.75 |
| Miscellaneous | <u>37</u> | <u>0.17</u> | <u>29</u> | <u>0.17</u> | <u>40</u> | <u>0.17</u> |
| TOTAL OPERATING EXPENSES | \$2,786 | \$13.02 | \$2,359 | \$13.59 | \$2,952 | \$12.86 |
| Expansion livestock | 55 | 0.25 | 65 | 0.37 | 51 | 0.22 |
| Machinery depreciation | 141 | 0.66 | 141 | 0.81 | 142 | 0.62 |
| Building depreciation | <u>102</u> | <u>0.48</u> | <u>82</u> | <u>0.47</u> | <u>110</u> | <u>0.48</u> |
| TOTAL ACCRUAL EXPENSES | \$3,084 | \$14.41 | \$2,647 | \$15.24 | \$3,255 | \$14.18 |

Table 63.

**FARM RECEIPTS AND EXPENSES PER COW AND PER
HUNDREDWEIGHT FOR THREE HERD SIZE CATEGORIES
314 New York Dairy Farms, 1999**

| Item | 99 Dairy Farms with <80 Cows | | 98 Dairy Farms with 80-180 Cows | | 117 Dairy Farms with ≥ 180 Cows | |
|--|---------------------------------|-------------|------------------------------------|-------------|------------------------------------|-------------|
| | Per Cow | Per Cwt. | Per Cow | Per Cwt. | Per Cow | Per Cwt. |
| <u>ACCRUAL RECEIPTS</u> | | | | | | |
| Milk sales | \$2,627 | \$14.17 | \$2,856 | \$14.87 | \$3,332 | \$14.93 |
| Dairy cattle | 162 | 0.91 | 156 | 0.81 | 209 | 0.94 |
| Dairy calves | 27 | 0.15 | 26 | 0.13 | 26 | 0.12 |
| Other livestock | 4 | 0.02 | 4 | 0.02 | 11 | 0.05 |
| Crops | 22 | 0.12 | 38 | 0.20 | 88 | 0.40 |
| Government receipts | 114 | 0.64 | 117 | 0.61 | 74 | 0.33 |
| All other | <u>73</u> | <u>0.41</u> | <u>47</u> | <u>0.24</u> | <u>49</u> | <u>0.22</u> |
| TOTAL ACCRUAL RECEIPTS | \$3,028 | \$16.96 | \$3,243 | \$16.88 | \$3,789 | \$16.98 |
| <u>ACCRUAL EXPENSES</u> | | | | | | |
| Labor: Hired | \$162 | \$0.91 | \$266 | \$1.38 | \$531 | \$2.38 |
| Feed: Dairy grain & concentrate | 612 | 3.43 | 711 | 3.70 | 841 | 3.77 |
| Dairy roughage | 57 | 0.32 | 48 | 0.25 | 47 | 0.21 |
| Nondairy | 0 | 0.00 | 2 | 0.01 | 0 | 0.00 |
| Machinery: Machine hire, rent & lease | 52 | 0.29 | 73 | 0.38 | 91 | 0.41 |
| Mach. repairs & vehicle expense | 180 | 1.01 | 188 | 0.98 | 160 | 0.72 |
| Fuel, oil & grease | 61 | 0.34 | 59 | 0.31 | 50 | 0.22 |
| Livestock: Replacement livestock | 44 | 0.25 | 48 | 0.25 | 53 | 0.24 |
| Breeding | 39 | 0.22 | 36 | 0.19 | 36 | 0.16 |
| Vet & medicine | 59 | 0.33 | 78 | 0.40 | 111 | 0.50 |
| Milk marketing | 127 | 0.71 | 116 | 0.60 | 101 | 0.45 |
| Bedding | 15 | 0.08 | 21 | 0.11 | 48 | 0.22 |
| Milking supplies | 77 | 0.43 | 76 | 0.40 | 71 | 0.32 |
| Cattle lease & rent | 0 | 0.00 | 0 | 0.00 | 15 | 0.07 |
| Custom boarding | 11 | 0.06 | 18 | 0.09 | 37 | 0.17 |
| bST expense | 15 | 0.09 | 28 | 0.14 | 61 | 0.28 |
| Other livestock expense | 53 | 0.30 | 49 | 0.25 | 28 | 0.13 |
| Crops: Fertilizer & lime | 75 | 0.42 | 81 | 0.42 | 73 | 0.33 |
| Seeds & plants | 39 | 0.22 | 47 | 0.25 | 43 | 0.19 |
| Spray & other crop expense | 34 | 0.19 | 51 | 0.27 | 53 | 0.24 |
| Real Estate: Land, building & fence repair | 64 | 0.36 | 56 | 0.29 | 58 | 0.26 |
| Taxes | 86 | 0.48 | 59 | 0.31 | 36 | 0.16 |
| Rent & lease | 34 | 0.19 | 55 | 0.29 | 60 | 0.27 |
| Other: Insurance | 52 | 0.29 | 44 | 0.23 | 30 | 0.14 |
| Utilities (farm share) | 92 | 0.52 | 80 | 0.42 | 60 | 0.27 |
| Interest paid | 145 | 0.81 | 162 | 0.84 | 185 | 0.83 |
| Miscellaneous | <u>35</u> | <u>0.20</u> | <u>36</u> | <u>0.19</u> | <u>37</u> | <u>0.17</u> |
| TOTAL OPERATING EXPENSES | \$2,224 | \$12.46 | \$2,488 | \$12.95 | \$2,919 | \$13.08 |
| Expansion livestock | 2 | 0.01 | 36 | 0.19 | 65 | 0.29 |
| Machinery depreciation | 188 | 1.06 | 149 | 0.77 | 135 | 0.60 |
| Building depreciation | <u>69</u> | <u>0.39</u> | <u>87</u> | <u>0.45</u> | <u>109</u> | <u>0.49</u> |
| TOTAL ACCRUAL EXPENSES | \$2,483 | \$13.92 | \$2,760 | \$14.36 | \$3,228 | \$14.46 |

Table 64

INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS
New York State Dairy Farms, 1999

| Item | All Intensive Grazing Farms | Non-Grazing Farms* | Profitable Grazing Farms** | Profitable Non- Grazing Farms*** |
|--|--------------------------------|-----------------------|-------------------------------|-------------------------------------|
| Number of farms | 65 | 133 | 13 | 25 |
| <u>Business Size & Production</u> | | | | |
| Number of cows | 79 | 82 | 53 | 58 |
| Number of heifers | 60 | 61 | 38 | 42 |
| Milk sold, lbs. | 1,447,650 | 1,538,191 | 983,756 | 1,104,741 |
| Milk sold/cow, lbs. | 18,346 | 18,740 | 18,454 | 19,140 |
| Milk plant test, % butterfat | 3.68% | 3.70% | 3.63% | 3.69% |
| Tillable acres, total | 227 | 254 | 154 | 189 |
| Hay crop, tons DM/acre | 2.1 | 2.2 | 1.6 | 2.2 |
| Corn silage, tons/acre | 14.0 | 13.6 | 14.6 | 13.1 |
| Forage DM/cow, tons | 5.8 | 7.6 | 4.9 | 7.0 |
| <u>Labor & Capital Efficiency</u> | | | | |
| Worker equivalent | 2.63 | 2.82 | 2.01 | 2.12 |
| Milk sold/worker, lbs. | 550,437 | 545,458 | 489,431 | 521,104 |
| Cows/worker | 30 | 29 | 26 | 27 |
| Farm capital/worker | \$187,311 | \$213,761 | \$154,963 | \$195,179 |
| Farm capital/cow | \$6,236 | \$7,351 | \$5,877 | \$7,134 |
| Farm capital/cwt. milk | \$34 | \$39 | \$32 | \$37 |
| <u>Milk Production Costs & Returns</u> | | | | |
| Selected costs/cwt.: | | | | |
| Hired labor | \$1.28 | \$1.08 | \$0.71 | \$0.62 |
| Grain & concentrate | 3.38 | 3.67 | 3.20 | 3.46 |
| Purchased roughage | 0.27 | 0.42 | 0.47 | 0.58 |
| Replacements purchased | 0.25 | 0.28 | 0.15 | 0.29 |
| Vet & medicine | 0.37 | 0.39 | 0.26 | 0.37 |
| Milk marketing | 0.60 | 0.64 | 0.75 | 0.60 |
| Other dairy expenses | 0.91 | 0.94 | 0.66 | 0.90 |
| Operating cost/cwt. | 10.53 | 10.73 | 8.76 | 9.35 |
| Total labor cost/cwt. | 3.90 | 3.73 | 4.29 | 3.88 |
| Operator resources/cwt. | 3.53 | 3.42 | 3.97 | 3.96 |
| Total cost/cwt. | 15.87 | 15.81 | 14.37 | 14.72 |
| Average farm price/cwt. | 14.85 | 14.74 | 14.95 | 14.67 |
| Return over total costs/cwt. | -1.02 | -1.07 | \$0.58 | -0.05 |
| <u>Related Cost Factors</u> | | | | |
| Hired labor/cow | \$235 | \$202 | \$131 | \$118 |
| Total labor/cow | 715 | 700 | 797 | 739 |
| Purchased dairy feed/cow | 670 | 766 | 682 | 768 |
| Purchased grain & concentrate as % of milk receipts | 23% | 25% | 21% | 24% |
| Vet & medicine/cow | \$68 | \$74 | \$47 | \$71 |
| Machinery costs/cow | \$545 | \$531 | \$477 | \$491 |
| Feed & crop exp./cwt. | \$4.39 | \$4.96 | \$4.16 | \$4.70 |
| <u>Profitability Analysis</u> | | | | |
| Net farm income (without appreciation) | \$42,858 | \$43,135 | \$48,940 | \$47,786 |
| Net farm income per cow (w/o apprec.) | \$543 | \$526 | \$923 | \$824 |
| Labor & management income/operator | \$13,203 | \$10,297 | \$26,586 | \$21,039 |
| Labor & mgmt. income/operator/cow | \$167 | \$126 | \$502 | \$363 |
| Rates of return on: | | | | |
| Equity capital with appreciation | 3.7% | 3.7% | 12.3% | 7.1% |
| All capital with appreciation | 4.4% | 4.7% | 10.9% | 6.9% |

*Farms with similar herd size, as the 65 rotational grazing farms.

**Farms with labor and mgmt. income per operator per cow greater than \$193, had been grazing at least two years, and forage from pasture at least 40%.

***Farms with similar herd size as the 13 profitable grazing farms and labor and management income per operator per cow greater than \$193.

Table 65.

COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
314 New York Dairy Farms, 1999

| Item | West. & Cent. Plateau Region | West. & Cent. Plain Region | Northern New York | Central Valleys | No. Hudson & Southeastern NY |
|--------------------------------------|------------------------------------|----------------------------------|----------------------|--------------------|------------------------------------|
| Number of farms | 63 | 95 | 33 | 37 | 86 |
| <u>ACCRUAL EXPENSES</u> | | | | | |
| Hired labor | \$57,843 | \$215,846 | \$74,046 | \$28,022 | \$52,366 |
| Feed | 123,496 | 356,812 | 167,120 | 70,167 | 114,528 |
| Machinery | 44,784 | 117,259 | 57,161 | 31,391 | 49,928 |
| Livestock | 63,685 | 233,584 | 87,689 | 48,206 | 78,702 |
| Crops | 24,810 | 66,630 | 33,555 | 16,000 | 26,509 |
| Real estate | 28,053 | 60,126 | 28,666 | 22,056 | 22,908 |
| Other | 48,524 | 129,597 | 64,525 | 31,285 | 40,767 |
| Total Operating Expenses | \$391,193 | \$1,179,854 | \$512,761 | \$247,130 | \$385,710 |
| Expansion livestock | 5,769 | 27,121 | 16,910 | 319 | 3,962 |
| Machinery depreciation | 27,847 | 51,767 | 36,136 | 17,663 | 16,272 |
| Building depreciation | 19,078 | 43,417 | 23,297 | 7,998 | 9,340 |
| Total Accrual Expenses | \$443,887 | \$1,302,159 | \$589,104 | \$273,110 | \$415,284 |
| <u>ACCRUAL RECEIPTS</u> | | | | | |
| Milk sales | \$457,482 | \$1,327,116 | \$637,366 | \$295,303 | \$436,111 |
| Livestock | 33,640 | 97,983 | 49,874 | 21,241 | 28,120 |
| Crops | 3,726 | 36,837 | 15,367 | 5,446 | 9,183 |
| All other | 20,521 | 52,467 | 20,811 | 15,096 | 22,201 |
| Total Accrual Receipts | \$515,369 | \$1,514,403 | \$723,419 | \$337,086 | \$495,615 |
| <u>PROFITABILITY ANALYSIS</u> | | | | | |
| Net farm income (w/o appreciation) | \$71,482 | \$212,244 | \$134,315 | \$63,976 | \$80,331 |
| Net farm income (w/ appreciation) | \$94,951 | \$266,395 | \$164,263 | \$78,432 | \$91,366 |
| Labor & management income | \$34,075 | \$143,517 | \$94,260 | \$34,929 | \$41,554 |
| Number of operators | 1.50 | 1.78 | 1.54 | 1.78 | 1.65 |
| Labor & mgmt. income/operator | \$22,717 | \$80,628 | \$61,208 | \$19,623 | \$25,184 |
| <u>BUSINESS FACTORS</u> | | | | | |
| Worker equivalent | 4.36 | 9.03 | 5.03 | 3.32 | 4.31 |
| Number of cows | 154 | 401 | 202 | 103 | 139 |
| Number of heifers | 115 | 289 | 153 | 80 | 103 |
| Acres of hay crops* | 213 | 310 | 281 | 189 | 218 |
| Acres of corn silage* | 137 | 319 | 191 | 81 | 119 |
| Total tillable acres | 414 | 771 | 525 | 328 | 388 |
| Pounds of milk sold | 3,125,992 | 8,939,425 | 4,325,709 | 1,967,070 | 2,829,523 |
| Pounds of milk sold/cow | 20,317 | 22,298 | 21,459 | 19,028 | 20,370 |
| Tons hay crop dry matter/acre | 2.2 | 3.7 | 2.8 | 2.4 | 2.4 |
| Tons corn silage/acre | 13.8 | 17.7 | 16.2 | 14.7 | 14.9 |
| Cows/worker | 35 | 44 | 40 | 31 | 32 |
| Pounds of milk sold/worker | 716,971 | 989,970 | 859,982 | 592,491 | 656,502 |
| % grain & conc. of milk receipts | 26% | 25% | 25% | 23% | 25% |
| Feed & crop expense/cwt. milk | \$4.74 | \$4.73 | \$4.64 | \$4.38 | \$4.98 |
| Fertilizer & lime/crop acre | \$24.38 | \$36.86 | \$27.12 | \$19.69 | \$34.99 |
| Machinery cost/tillable acre | \$199 | \$246 | \$202 | \$171 | \$194 |

*Average of all farms in the region, not only those producing the crop.

Figure 2.

**Percent Change in Milk Production, Five Regions in New York,
1989-1999**

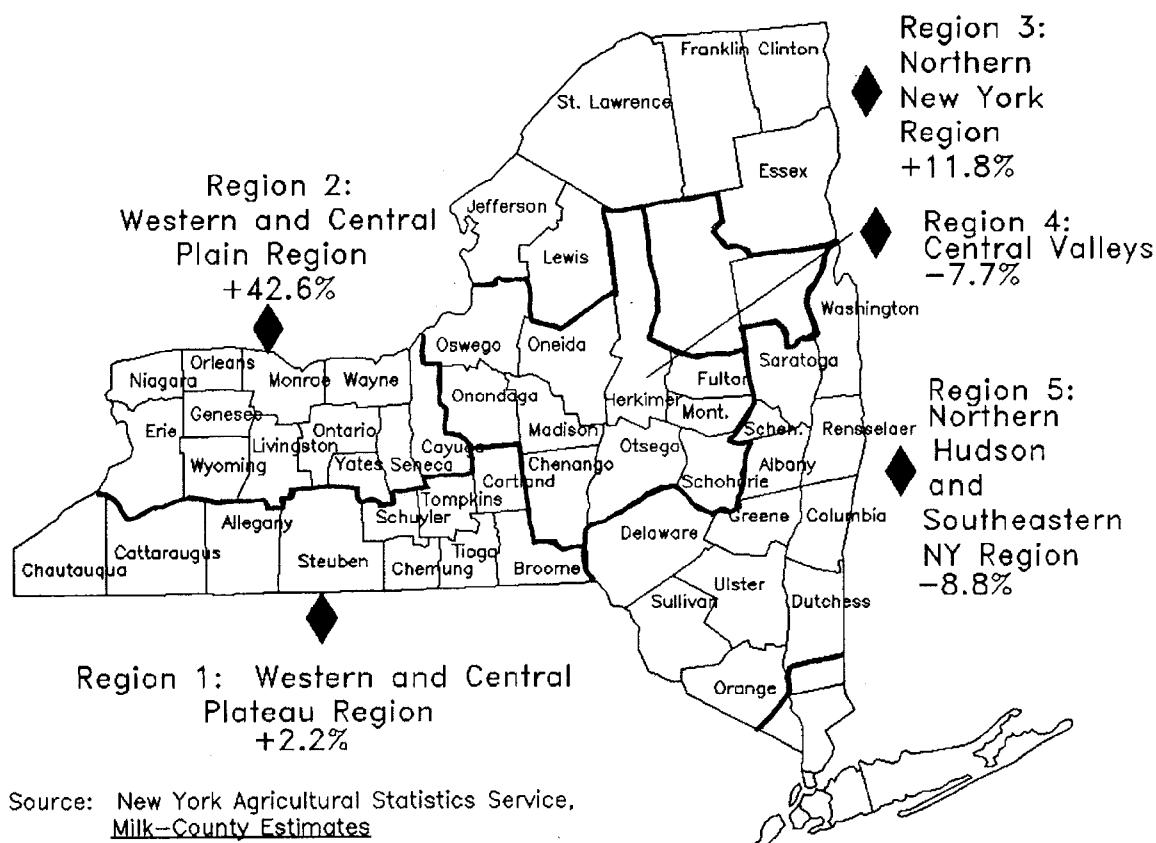


Table 66.

**MILK PRODUCTION & AVERAGE COST OF PRODUCING MILK
Five Regions of New York, 1999**

| Item | Region* | | | | |
|--|-----------------------------|---------|---------|---------|---------|
| | 1 | 2 | 3 | 4 | 5 |
| <u>Milk Production**</u> | (million pounds) | | | | |
| 1989 | 2,080.9 | 2,433.0 | 2,117.8 | 2,839.7 | 1,587.1 |
| 1999 | 2,127.6 | 3,468.6 | 2,368.7 | 2,619.8 | 1,447.4 |
| Percent change | +2.2% | +42.6% | +11.8% | -7.7% | -8.8% |
| <u>Cost of Producing Milk***</u> | (\$ per hundredweight milk) | | | | |
| Operating cost | \$10.85 | \$11.41 | \$10.26 | \$10.46 | \$11.67 |
| Total cost | 14.91 | 13.91 | 13.59 | 15.31 | 15.36 |
| Average price received | 14.63 | 14.85 | 14.73 | 15.01 | 15.41 |
| Return per cwt. to operator labor, management & capital | \$2.12 | \$2.32 | \$2.94 | \$3.00 | \$2.64 |

*See Figure 2 for region descriptions.

**Source: New York Agricultural Statistics Service, Milk-County Estimates.

***From Dairy Farm Business Summary data.

Table 67.

SELECTED BUSINESS FACTORS BY MILKING FREQUENCY
New York State Dairy Farms, 1998 & 1999

| Item | 2x/Day Milking | | 3x/Day Milking | |
|--|----------------|-----------|----------------|------------|
| | 1998 | 1999 | 1998 | 1999 |
| Number of farms | 220 | 219 | 72 | 74 |
| <u>Business Size & Production</u> | | | | |
| Number of cows | 120 | 124 | 472 | 477 |
| Number of heifers | 88 | 92 | 348 | 360 |
| Milk sold, lbs. | 2,203,206 | 2,361,328 | 10,761,712 | 11,085,512 |
| Milk sold/cow, lbs. | 18,422 | 19,086 | 22,812 | 23,245 |
| Milk plant test, % butterfat | 3.71% | 3.70% | 3.56% | 3.63% |
| Tillable acres, total | 344 | 353 | 943 | 960 |
| Hay crop, tons DM/acre | 2.6 | 2.5 | 3.7 | 3.3 |
| Corn silage, tons/acre | 16.0 | 14.9 | 19.7 | 17.0 |
| Forage DM/cow, tons | 8.2 | 7.8 | 8.5 | 7.9 |
| <u>Labor & Capital Efficiency</u> | | | | |
| Worker equivalent | 3.45 | 3.63 | 10.83 | 10.97 |
| Milk sold/worker, lbs. | 638,610 | 650,504 | 993,695 | 1,010,530 |
| Cows/worker | 35 | 34 | 44 | 43 |
| Farm capital/worker | \$230,942 | \$229,245 | \$255,161 | \$273,185 |
| Farm capital/cow | \$6,640 | \$6,711 | \$5,855 | \$6,283 |
| Farm capital/cwt. milk | \$36.16 | \$35.24 | \$25.68 | \$27.03 |
| <u>Milk Production Costs & Returns</u> | | | | |
| Selected costs/cwt.: | | | | |
| Hired labor | \$1.55 | \$1.60 | \$2.35 | \$2.45 |
| Grain & concentrate | \$3.88 | \$3.68 | \$4.04 | \$3.76 |
| Purchased roughage | \$0.20 | \$0.21 | \$0.19 | \$0.22 |
| Replacements purchased | \$0.25 | \$0.25 | \$0.24 | \$0.23 |
| Vet & medicine | \$0.41 | \$0.42 | \$0.47 | \$0.50 |
| Milk marketing | \$0.63 | \$0.59 | \$0.46 | \$0.43 |
| Other dairy expenses | \$1.14 | \$1.01 | \$1.32 | \$1.20 |
| Operating costs/cwt. | \$11.27 | \$11.19 | \$11.58 | \$11.22 |
| Total labor costs/cwt. | \$3.16 | \$3.40 | \$2.74 | \$2.88 |
| Operator resources/cwt. | \$2.77 | \$2.75 | \$1.28 | \$1.37 |
| Total costs/cwt. | \$15.47 | \$15.36 | \$13.93 | \$13.75 |
| Average farm price/cwt. | \$15.77 | \$14.98 | \$15.49 | \$14.85 |
| Return over total costs/cwt. | \$0.30 | -\$0.38 | \$1.56 | \$1.10 |
| <u>Related Cost Factors</u> | | | | |
| Hired labor/cow | \$284 | \$305 | \$536 | \$568 |
| Total labor/cow | \$581 | \$647 | \$624 | \$670 |
| Purchased dairy feed/cow | \$749 | \$740 | \$964 | \$926 |
| Purchased grain & concentrate as % of milk receipts | 25% | 25% | 26% | 25% |
| Vet & medicine/cow | \$76 | 80 | \$108 | \$116 |
| Machinery costs/cow | \$483 | 519 | \$454 | \$497 |
| <u>Profitability Analysis</u> | | | | |
| Net farm income (without appreciation) | \$73,038 | \$61,985 | \$309,697 | \$276,491 |
| Labor & management income/operator | \$27,607 | \$18,434 | \$119,021 | \$94,911 |
| Rates of return on: | | | | |
| Equity capital with appreciation | 9.2% | 6.5% | 20.3% | 16.5% |
| All capital with appreciation | 8.4% | 6.5% | 14.1% | 11.8% |

Table 68.

FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
42 New York Dairy-Renter Farms,* 1999

| <u>ACCRUAL EXPENSES</u> | | <u>ACCRUAL RECEIPTS</u> | |
|--|-----------|--|-----------|
| Labor: Hired | \$40,821 | Milk sales | \$398,233 |
| Feed: Dairy grain & concentrate | 103,271 | Dairy cattle | 32,250 |
| Dairy roughage | 19,508 | Dairy calves | 3,841 |
| Nondairy | 43 | Other livestock | 185 |
| Machinery: Mach. hire, rent & lease | 10,868 | Crops | -2,641 |
| Mach. repairs & farm vehicle expense | 17,159 | Government receipts | 7,465 |
| Fuel, oil, grease | 5,668 | Custom machine work | 2,639 |
| Livestock: Replacement livestock | 13,695 | Gas tax refund | 331 |
| Breeding | 4,975 | Other | 4,334 |
| Veterinary & medicine | 10,713 | TOTAL ACCRUAL RECEIPTS | \$446,638 |
| Milk marketing | 15,229 | | |
| Bedding | 4,787 | <u>PROFITABILITY ANALYSIS</u> | |
| Milking supplies | 9,892 | Net farm income (without appreciation) | \$70,473 |
| Cattle lease & rent | 591 | Net farm income (with appreciation) | \$82,326 |
| Custom boarding | 4,210 | Labor & management income/farm | \$51,902 |
| bST expense | 5,392 | Number of operators | 1.51 |
| Other livestock expense | 5,508 | Labor & management income/operator | \$34,372 |
| Crops: Fertilizer & lime | 7,423 | Rate of return on equity | |
| Seeds & plants | 3,718 | capital including appreciation | 15.6% |
| Spray & other crop expense | 3,734 | | |
| Real estate: Land, building & fence repair | 6,805 | <u>BUSINESS FACTORS</u> | |
| Taxes | 2,025 | Number of cows | 137 |
| Rent & lease | 21,005 | Number of heifers | 82 |
| Other: | | Worker equivalent | 3.44 |
| Insurance | 4,559 | Total tillable acres | 241 |
| Utilities (farm share) | 10,361 | Milk sold per cow, lbs. | 19,450 |
| Interest paid | 13,981 | Hay DM per acre, tons | 2.2 |
| Miscellaneous | 4,704 | Corn silage per acre, tons | 14.3 |
| TOTAL OPERATING EXPENSES | \$350,647 | Milk sold per worker, lbs. | 776,350 |
| | | Grain/conc. as % milk sales | 26% |
| Expansion livestock | \$9,933 | Feed & crop expense/cwt. milk | \$5.15 |
| Machinery depreciation | 12,704 | Labor & machinery costs/cow | \$965 |
| Building depreciation | 2,881 | Average price/cwt. milk | \$14.91 |
| TOTAL ACCRUAL EXPENSES | \$376,165 | | |

| <u>ASSETS</u> | <u>Jan. 1</u> | <u>Dec. 31</u> | <u>LIABILITIES</u> | <u>Jan. 1</u> | <u>Dec. 31</u> |
|-------------------------------|---------------|----------------|----------------------------|---------------|----------------|
| Farm cash, checking & savings | \$12,809 | \$13,488 | Accounts payable | \$13,685 | \$13,848 |
| Accounts receivable | 33,582 | 27,109 | Operating debt | 13,297 | 23,871 |
| Prepaid expenses | 114 | 424 | Short-term | 1,476 | 301 |
| Feed & supplies | 62,116 | 67,493 | Advanced gov't receipts | 0 | 0 |
| Dairy cows** | 132,458 | 150,624 | Current Portion: | | |
| Heifers | 45,398 | 53,887 | Intermediate | 28,095 | 27,064 |
| Bulls & other livestock | 502 | 446 | Long Term | 1,778 | 2,430 |
| Machinery & equipment** | 114,052 | 137,296 | Intermediate*** | 123,481 | 134,112 |
| Farm Credit stock | 3,147 | 3,477 | Long term** | 51,688 | 51,611 |
| Other stock & certificates | 10,566 | 13,197 | Total Farm Liabilities | \$233,500 | \$253,237 |
| Land & buildings** | 55,512 | 61,444 | Nonfarm Liabilities**** | 2,827 | 2,720 |
| Total Farm Assets | \$470,256 | \$528,905 | Farm & Nonfarm Liabilities | \$236,327 | \$255,957 |
| Nonfarm Assets**** | 57,093 | 92,669 | Farm Net Worth | \$236,756 | \$275,668 |
| Farm & Nonfarm Assets | \$527,349 | \$621,574 | Farm & Nonfarm Net Worth | \$291,022 | 365,617 |

*A renter owns no farm real estate or tillable land at the end of year.

**Includes discounted lease payments.

***Includes Farm Credit stock and discounted lease payments for cattle and machinery.

****Average of 18 farms reporting.

Table 69.

FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
Average of 31 Top Ten Percent Farms by Rate of Return on All Capital
(without appreciation), 1999

| <u>ACCRUAL EXPENSES</u> | | | <u>ACCRUAL RECEIPTS</u> | | |
|--|--|-------------|--|--|-------------|
| Labor: Hired | | \$331,511 | Milk sales | | \$2,097,843 |
| Feed: Dairy grain & concentrate | | 526,518 | Dairy cattle | | 147,253 |
| Dairy roughage | | 40,376 | Dairy calves | | 16,370 |
| Nondairy | | 0 | Other livestock | | 12,441 |
| Machinery: Mach. hire, rent & lease | | 52,120 | Crops | | 66,500 |
| Mach. repairs & farm vehicle expense | | 82,636 | Government receipts | | 27,446 |
| Fuel, oil, grease | | 25,484 | Custom machine work | | 1,016 |
| Livestock: Replacement livestock | | 16,963 | Gas tax refund | | 170 |
| Breeding | | 22,679 | Other | | 14,144 |
| Vet & medicine | | 67,966 | TOTAL ACCRUAL RECEIPTS | | \$2,383,184 |
| Milk marketing | | 55,331 | | | |
| Bedding | | 32,994 | <u>PROFITABILITY ANALYSIS</u> | | |
| Milking supplies | | 38,353 | Net farm income (without appreciation) | | \$478,018 |
| Cattle lease & rent | | 13,462 | Net farm income (with appreciation) | | 529,087 |
| Custom boarding | | 32,411 | Labor & management income/operator | | 232,520 |
| bST expense | | 37,221 | Rate of return on equity | | |
| Other livestock expense | | 12,385 | capital without appreciation | | 24.4% |
| Crops: Fertilizer & lime | | 40,221 | Rate of return on all | | |
| Seeds & plants | | 20,313 | capital without appreciation | | 15.8% |
| Spray & other crop expense | | 22,497 | | | |
| Real estate: Land, building & fence repair | | 29,561 | <u>BUSINESS FACTORS</u> | | |
| Taxes | | 18,368 | Number of cows | | 598 |
| Rent & lease | | 36,296 | Number of heifers | | 432 |
| Other: | | | Worker equivalent | | 12.33 |
| Insurance | | 13,384 | Total tillable acres | | 1,064 |
| Utilities (farm share) | | 33,096 | Milk sold per cow, lbs. | | 23,463 |
| Interest paid | | 98,405 | Hay DM per acre, tons | | 3.7 |
| Miscellaneous | | 20,998 | Corn silage per acre, tons | | 17.6 |
| TOTAL OPERATING EXPENSES | | \$1,721,548 | Milk sold per worker, lbs. | | 1,137,683 |
| | | | Grain/conc. as % milk sales | | 25% |
| Expansion livestock | | \$46,804 | Feed & crop exp./cwt. milk | | \$4.63 |
| Machinery depreciation | | 76,971 | Labor & mach. costs/cow | | \$1,069 |
| Building depreciation | | 59,843 | Average price/cwt. milk | | \$14.96 |
| TOTAL ACCRUAL EXPENSES | | \$1,905,166 | | | |

| <u>ASSETS</u> | <u>Jan. 1</u> | <u>Dec. 31</u> | <u>LIABILITIES</u> | <u>Jan. 1</u> | <u>Dec. 31</u> |
|-------------------------------|---------------|----------------|----------------------------|---------------|----------------|
| Farm cash, checking & savings | \$ -7,010 | \$30,739 | Accounts payable | \$37,760 | \$28,490 |
| Accounts receivable | 136,844 | 111,625 | Operating debt | 124,831 | 191,830 |
| Prepaid expenses | 2,505 | 7,487 | Short-term | 5,303 | 3,395 |
| Feed & supplies | 369,177 | 530,486 | Advanced gov't receipts | 277 | 277 |
| Dairy cows* | 572,141 | 622,172 | Current Portion: | | |
| Heifers | 244,508 | 275,194 | Intermediate | 89,818 | 113,296 |
| Bulls & other livestock | 5,970 | 7,195 | Long Term | 32,568 | 70,924 |
| Machinery & equipment* | 531,008 | 595,651 | Intermediate** | 575,821 | 636,219 |
| Farm Credit stock | 11,456 | 13,665 | Long-term* | 603,297 | 576,078 |
| Other stock & certificates | 54,807 | 61,450 | Total Farm Liabilities | \$1,469,675 | \$1,620,509 |
| Land & buildings* | 1,052,104 | 1,219,603 | Nonfarm Liabilities*** | 917 | 529 |
| Total Farm Assets | \$2,973,510 | \$3,475,267 | Farm & Nonfarm Liabilities | \$1,470,592 | \$1,621,038 |
| Nonfarm Assets*** | 54,806 | 73,120 | Farm Net Worth | \$1,503,835 | \$1,854,758 |
| Farm & Nonfarm Assets | \$3,028,316 | \$3,548,387 | Farm & Nonfarm Net Worth | \$1,557,724 | \$1,927,349 |

*Includes discounted lease payments.

**Includes Farm Credit Stock and discounted lease payments for cattle and machinery.

***Average of 12 farms reporting.

Table 70.

FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
Average of 314 New York Dairy Farms, 1999

| <u>ACCRUAL EXPENSES</u> | | | <u>ACCRUAL RECEIPTS</u> | | |
|--|---------------|----------------|--|---------------|----------------|
| Labor: Hired | | \$102,335 | Milk sales | | \$174,529 |
| Feed: Dairy grain & concentrate | | 179,144 | Dairy cattle | | 43,956 |
| Dairy roughage | | 10,692 | Dairy calves | | 5,799 |
| Nondairy | | 93 | Other livestock | | 2,084 |
| Machinery: Mach. hire, rent & lease | | 18,968 | Crops | | 16,664 |
| Mach. repairs & farm vehicle expense | | 37,198 | Government receipts | | 18,817 |
| Fuel, oil, grease | | 11,676 | Custom machine work | | 1,465 |
| Livestock: Replacement livestock | | 11,585 | Gas tax refund | | 230 |
| Breeding | | 8,019 | Other | | 9,543 |
| Vet & medicine | | 22,580 | - Non-cash capital transfer | | 18 |
| Milk marketing | | 23,530 | TOTAL ACCRUAL RECEIPTS | | \$813,071 |
| Bedding | | 9,229 | <u>PROFITABILITY ANALYSIS</u> | | |
| Milking supplies | | 16,104 | Net farm income (without appreciation) | | \$122,210 |
| Cattle lease & rent | | 2,529 | Net farm income (with appreciation) | | 151,175 |
| Custom boarding | | 7,175 | Labor & management income/farm | | 75,578 |
| bST expense | | 11,644 | Number of operators | | 1.76 |
| Other livestock expense | | 7,522 | Labor & management income/operator | | \$42,942 |
| Crops: Fertilizer & lime | | 16,599 | Rate of return on equity | | |
| Seeds & plants | | 9,754 | capital including appreciation | | 12.0% |
| Spray & other crop expense | | 11,456 | <u>BUSINESS FACTORS</u> | | |
| Real estate: Land, building & fence repair | | 13,012 | Number of cows | | 224 |
| Taxes | | 9,852 | Number of heifers | | 164 |
| Rent & lease | | 12,841 | Worker equivalent | | 5.71 |
| Other: | | | Total tillable acres | | 516 |
| Insurance | | 7,675 | Milk sold per cow, lbs. | | 21,439 |
| Utilities (farm share) | | 14,798 | Hay DM per acre, tons | | 2.9 |
| Interest paid | | 39,840 | Corn silage per acre, tons | | 16.3 |
| Miscellaneous | | 8,266 | Milk sold per worker, lbs. | | 839,432 |
| TOTAL OPERATING EXPENSES | | \$624,100 | Grain/conc. as % milk sales | | 25% |
| Expansion livestock | | \$12,263 | Feed & crop exp./cwt. milk | | \$4.75 |
| Machinery depreciation | | 31,585 | Labor & mach. costs/cow | | \$1,155 |
| Building depreciation | | 22,913 | Average price/cwt. milk | | \$14.91 |
| TOTAL ACCRUAL EXPENSES | | \$690,861 | | | |
| <u>ASSETS</u> | | | <u>LIABILITIES</u> | | |
| | <u>Jan. 1</u> | <u>Dec. 31</u> | | <u>Jan. 1</u> | <u>Dec. 31</u> |
| Farm cash, checking & savings | \$7,438 | \$11,648 | Accounts payable | \$16,693 | \$16,194 |
| Accounts receivable | 59,483 | 47,988 | Operating debt | 36,124 | 51,223 |
| Prepaid expenses | 1,404 | 2,126 | Short-term | 5,653 | 5,812 |
| Feed & supplies | 137,393 | 170,328 | Advanced gov't rec. | 229 | 60 |
| Dairy cows* | 228,897 | 243,895 | Current Portion: | | |
| Heifers | 98,121 | 108,345 | Intermediate | 38,476 | 45,200 |
| Bulls & other livestock | 1,980 | 2,060 | Long Term | 15,237 | 19,760 |
| Machinery & equipment* | 246,428 | 274,494 | Intermediate*** | 228,699 | 246,165 |
| Farm Credit stock | 5,417 | 5,637 | Long-term** | 238,603 | 239,652 |
| Other stock & certificates | 23,871 | 28,147 | Total Farm Liabilities | \$579,715 | \$624,066 |
| Land & buildings* | 552,917 | 595,024 | Nonfarm Liabilities**** | 5,925 | 5,767 |
| Total Farm Assets | \$1,363,349 | \$1,489,692 | Farm & Nonfarm Liabilities | \$585,640 | \$629,833 |
| Nonfarm Assets*** | 81,791 | 89,546 | Farm Net Worth | \$783,634 | \$865,626 |
| Farm & Nonfarm Assets | \$1,445,140 | \$1,579,238 | Farm & Nonfarm Net Worth | \$859,500 | \$949,405 |

*Includes discounted lease payments.

**Includes Farm Credit stock and discounted lease payments for cattle and machinery.

***Average of 164 farms reporting.

NOTES

APPENDIX

**THE ECONOMIC ENVIRONMENT FACING
NEW YORK DAIRY FARMERS**

The prices dairy farmers pay for a given quantity of goods and services has a major influence on farm production costs. The astute manager will keep close watch on unit costs and utilize the most economical goods and services.

Table A1.**PRICES PAID BY NEW YORK FARMERS FOR SELECTED ITEMS, 1989-1999**

| Year | Mixed Dairy Feed 16% Protein* | Fertilizer, Urea 45-46%N* | Seed Corn, Hybrid** | Diesel Fuel* | Tractor 50-59 PTO** | Wage Rate All Hired Farm Workers*** |
|------|----------------------------------|---------------------------------|---------------------------|-----------------|------------------------|--|
| | (\$/ton) | (\$/ton) | (\$/80,000 kernels) | (\$/gal) | (\$) | (\$/hr) |
| 1989 | 189 | 227 | 71.40 | 0.828 | 17,350 | 5.25 |
| 1990 | 177 | 215 | 69.90 | 1.080 | 17,950 | 5.51 |
| 1991 | 172 | 243 | 70.20 | 0.995 | 18,650 | 6.06 |
| 1992 | 174 | 221 | 71.80 | 0.910 | 18,850 | 6.42 |
| 1993 | 171 | 226 | 72.70 | 0.900 | 19,200 | 6.76 |
| 1994 | 181 | 233 | 73.40 | 0.853 | 19,800 | 6.96 |
| 1995 | 175 | 316 | 77.10 | 0.850 | 20,100 | 6.92 |
| 1996 | 226 | 328 | 77.70 | 1.020 | 20,600 | 7.19 |
| 1997 | 216 | 287 | 83.50 | 0.960 | 21,200 | 7.63 |
| 1998 | 199 | 221 | 86.90 | 0.810 | 21,800 | 7.63 |
| 1999 | 175 | 180 | 88.10 | 0.750 | 21,900 | 8.12 |

SOURCE: NYASS, New York Agricultural Statistics. USDA, ASB, Agricultural Prices. *Northeast region average.

United States average. *New York and New England combined.

Inflation, farm profitability, supply and demand all have a direct impact on the inventory values on New York dairy farms. The table below shows year-end (December) prices paid for dairy cows (replacements), an index of these cow prices, an index of new machinery prices (U.S. average), the average per acre value of farmland and buildings reported in January (February for 1986-89 and April for 1982-85), and an index of the real estate prices.

Table A2.**VALUES OF NEW YORK DAIRY FARM INVENTORY ITEMS, 1983-1999**

| Year | Dairy Cows | | Machinery* | Farm Real Estate | |
|------|------------|----------|------------|------------------|----------|
| | Value/Head | 1977=100 | 1977=100 | Value/Acre | 1977=100 |
| 1983 | 850 | 172 | 173 | 817 | 139 |
| 1984 | 790 | 160 | 181 | 848 | 144 |
| 1985 | 740 | 149 | 181 | 820 | 140 |
| 1986 | 770 | 156 | 178 | 843 | 144 |
| 1987 | 870 | 176 | 180 | 960 | 164 |
| 1988 | 900 | 182 | 189 | 993 | 169 |
| 1989 | 1,020 | 206 | 201 | 1,045 | 178 |
| 1990 | 1,060 | 214 | 209 | 1,014 | 173 |
| 1991 | 1,040 | 210 | 219 | 1,095 | 187 |
| 1992 | 1,090 | 220 | 226 | 1,139 | 194 |
| 1993 | 1,100 | 222 | 235 | 1,237 | 211 |
| 1994 | 1,100 | 222 | 249 | 1,260 | 215 |
| 1995 | 1,010 | 204 | 258 | 1,280 | 218 |
| 1996 | 1,030 | 208 | 268 | 1,260 | 215 |
| 1997 | 980 | 198 | 276 | 1,250 | 213 |
| 1998 | 1,050 | 212 | 286 | 1,280 | 218 |
| 1999 | 1,250 | 253 | 294 | 1,340 | 228 |

SOURCE: NYASS, New York Agricultural Statistics and New York Crop and Livestock Report. USDA, ASB, Agricultural Prices.

*United States average; 1995 - 1999 are estimated due to discontinuation of 1977=100 series.

As the number of milk cow operations decreases, the average number of milk cows per operation increases as shown by Chart A1. There were 5,300 less milk cow operations in 1999 than there were in 1989. The average number of milk cows per operation has increased by 30 cows, or 55 percent over the same period. On January 1, 2000, 31 percent of the total milk cows were in herds with 50-99 head, 57 percent were in herds with over 100 milk cows, and 18 percent were in herds with less than 50 head.

Chart A1.

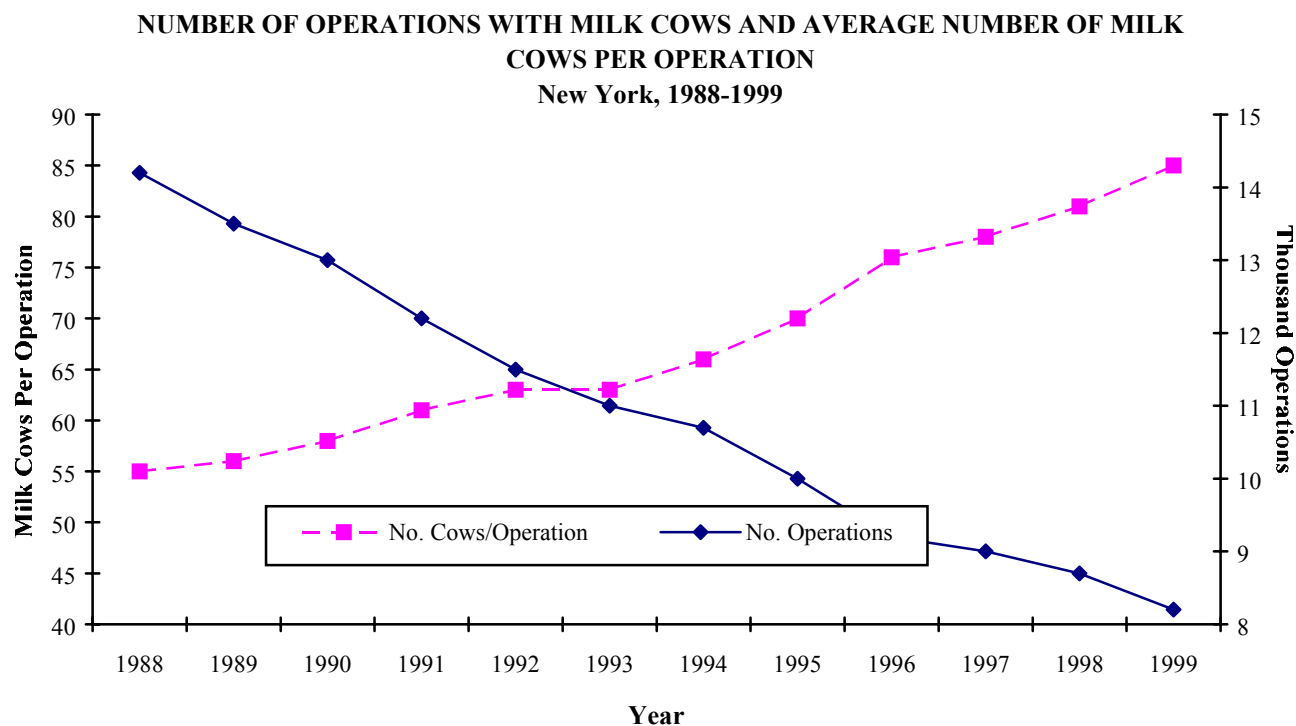


Table A3.

MILK COW OPERATIONS AND MILK COW INVENTORY
by Herd Size, 1988 to 1999

| MILK COW OPERATIONS BY HERD SIZE & TOTAL, 1988-1999 | | | | | | | MILK COWS ON FARMS, JAN. 1 BY HERD SIZE & TOTAL, 1989-2000 | | | | | | |
|--|-------|-------|-------|----------------------|----------|--------|---|------|-------|-------|----------------------|----------|-------|
| (Number of Milk Cows in Herd) | | | | | | | (Number of Milk Cows in Herd) | | | | | | |
| Year | 1-29 | 30-49 | 50-99 | 100-199 ^a | 200 plus | Total | Year | 1-29 | 30-49 | 50-99 | 100-199 ^a | 200 plus | Total |
| (Number of Operations) | | | | | | | (Thousand Head) | | | | | | |
| 1988 | 3,200 | 3,850 | 5,300 | 1,850 | | 14,200 | 1989 | 30 | 144 | 335 | 271 | | 780 |
| 1989 | 2,700 | 3,400 | 5,400 | 2,000 | | 13,500 | 1990 | 29 | 121 | 321 | 289 | | 760 |
| 1990 | 2,650 | 3,150 | 5,300 | 1,900 | | 13,000 | 1991 | 27 | 116 | 319 | 288 | | 750 |
| 1991 | 2,500 | 2,900 | 5,000 | 1,800 | | 12,200 | 1992 | 24 | 111 | 314 | 291 | | 740 |
| 1992 | 2,600 | 2,600 | 4,400 | 1,900 | | 11,500 | 1993 | 22 | 102 | 285 | 190 | 131 | 730 |
| 1993 | 2,400 | 2,500 | 4,200 | 1,500 | 400 | 11,000 | 1994 | 22 | 87 | 297 | 189 | 130 | 725 |
| 1994 | 2,400 | 2,200 | 4,200 | 1,500 | 400 | 10,700 | 1995 | 21 | 92 | 277 | 178 | 142 | 710 |
| 1995 | 2,100 | 2,200 | 4,000 | 1,300 | 400 | 10,000 | 1996 | 19 | 79 | 259 | 189 | 154 | 700 |
| 1996 | 1,800 | 2,000 | 3,700 | 1,300 | 400 | 9,200 | 1997 | 18 | 73 | 245 | 189 | 175 | 700 |
| 1997 | 1,700 | 1,900 | 3,600 | 1,300 | 500 | 9,000 | 1998 | 18 | 73 | 238 | 182 | 189 | 700 |
| 1998 | 1,600 | 1,800 | 3,500 | 1,300 | 500 | 8,700 | 1999 | 14 | 70 | 218 | 189 | 211 | 702 |
| 1999 | 1,400 | 1,600 | 3,200 | 1,400 | 600 | 8,200 | 2000 | 14 | 70 | 217 | 189 | 210 | 700 |

^a100 plus category prior to 1993.

Source: NYASS, New York Agricultural Statistics, 1998-1999

GLOSSARY AND LOCATION OF COMMON TERMS

Accounts Payable: Open accounts or bills owed to feed and supply firms, cattle dealers, veterinarians and other providers of farm services and supplies.

Accounts Receivable: Outstanding receipts from items sold or sales proceeds not yet received such as the payment for December milk sales received in January.

Accrual Accounting: (defined on page 9).

Accrual Expenses: (defined on page 11).

Accrual Receipts: (defined on page 11).

Annual Cash Flow Statement: (defined on page 18).

Appreciation: (defined on page 12).

Asset Turnover Ratio: (defined on page 40).

Available for Debt Service per Cow: Net cash available for debt service after deducting net personal withdrawals for family expenditures, divided by the average number of cows.

Average Top 10% Farms: Average of 30 farms with highest rate of return on all capital (without appreciation).

Balance Sheet: A "snapshot" of the business financial position at a given point in time, usually December 31. The balance sheet equates the value of assets to liabilities plus net worth.

Barn Types: Stanchion: cows are confined in a stall by a stanchion or neck chain. Freestall: cows move at will between open stalls and feeding areas. Combination: both stanchion and freestall barns used.

bST Usage: An estimate of percentage of herd that was injected with bovine somatotropin during the year.

Business Records: Account Book: any organized farm record book or ledger. Agrifax (mail-in): Farm Credit's recordkeeping service. On-Farm Computer: computerized business and financial records entered and kept on the farm. Other: accountant, recordkeeping association or no organized recordkeeping system.

Capital Efficiency: The amount of capital invested per production unit. Relatively high investments per worker with low to moderate investments per cow imply efficient use of capital. (See analysis, page 40).

Capital Investment: Commonly used as substitute term for farm capital or total farm assets.

Cash Flow: The movement of money in and out of the business over a given period of time, e.g. one year. (See Annual Cash Flow Statement, page 18).

Cash Flow Coverage Ratio: (defined on page 20).

Cash From Nonfarm Capital Used in the Business: Transfers of money from nonfarm savings or investments to the to the farm business where it is used to pay operating expenses, make debt payments and/or capital purchases.

Cash Paid: (defined on page 10).

Cash Receipts: (defined on page 11).

Change in Accounts Payable: (defined on page 11).

Change in Accounts Receivable: (defined under Accrual Receipts on page 11).

Change in Advanced Government Receipts: (defined under Accrual Receipts page 11).

Change in Inventory: (defined on page 10).

Corporation: Business is organized under state corporation law. Corporation is owned, operated, and managed by members of one or more farm families and owner/operators are corporate employees. Corporate accounts are modified to exclude operator wages' and other compensation from operating expenses for DFBS use.

Cost of Producing Milk, Whole Farm Method: A procedure used to calculate costs of producing milk on dairy farms without using enterprise cost accounts. All non-milk receipts are assigned a cost equal to their sale value and deducted from total farm expenses to determine the costs of producing milk. (see page 28).

Cost of Term Debt: A weighted average of the cost of borrowed capital to the farm. Calculate by multiplying end of year principal of each loan that is borrowed by the interest rate for each loan at that time. Add up each amount that is calculated for each loan and then divide by total amount of borrowed funds. Do not include accounts payable, operating debt or advanced government receipts. This information is found on pages 8 & 9 of the data entry form.

Culling Rate: Culling rate is calculated by dividing the number of animals that left the herd for culling purposes and that died, by the average number of milking and dry cows for the year

Current (assets and liabilities): Farm inventories and operating capital that usually turnover annually, and the debt associated with their growth and maintenance.

Current Portion: Principal due in the next year for intermediate and long term debt.

Current Ratio: Measures the extent to which current farm assets, if liquidated, would cover current farm liabilities. Calculated as current farm assets at end year divided by current farm liabilities at end year.

Dairy Cash-Crop (farm): Operating and managing this farm is the full-time occupation of one or more people, cropland is owned but crop sales exceed ten percent of accrual milk receipts.

Dairy Farm Renter: (dairy-renter) - Farm business owner/operator owns no tillable land and commonly rents all other farm real estate.

Dairy Grain and Concentrate: All grains, protein supplements, milk substitutes, minerals and vitamins purchased and fed to the dairy herd.

Dairy Records: DHIC: Dairy Herd Improvement Cooperative official milk production records. Owner Sampler: weights and samples are taken by farmer but tested by DHIC. Other: all other methods used to obtain periodic production data on individual cows. None: no milk production records on individual cows.

Dairy Roughage: All hay, silage or other fodder purchased and fed to the dairy herd.

Debt Coverage Ratio: (defined on page 20)

Debt Per Cow: Total end-of-year debt divided by end-of-year number of cows.

Debt to Asset Ratios: (defined on page 16).

Depreciation Expense Ratio: The percentage of total accrual receipts that is charged to depreciation expense (machinery and building).

Dry Matter: The amount or proportion of dry material that remains after all water is removed. Commonly used to measure dry matter percent and tons of dry matter in feed.

Equity Capital: The farm operator/manager's owned capital or farm net worth.

Expansion Livestock: Purchased dairy cattle and other livestock that cause an increase in herd size from the beginning to the end of the year.

Farm Business Chart: (see definition and application on page 42).

Farm Debt Payments as Percent of Milk Sales: Amount of milk income committed to debt repayment, calculated by dividing planned debt payments by total milk receipts. A reliable measure of repayment ability, see pages 20 and 45.

Farm Debt Payments Per Cow: Planned or scheduled debt payments per cow represent the repayment plan scheduled at the beginning of the year divided by the average number of cows for the year. This measure of repayment ability is used in the Financial Analysis Chart on page 45.

Financial Lease: A long-term non-cancelable contract giving the lessee use of an asset in exchange for a series of lease payments. The term of a financial lease usually covers a major portion of the economic life of the asset. The lease is a substitute for purchase. The lessor retains ownership of the asset.

Hay Crop: All hayland, including new seedings, harvested once or more as hay or hay crop silage.

Hay Dry Matter: see Dry Matter.

Heifers: Female dairy replacements of all ages.

Hired Labor (expenses): All wages, nonwage compensation, payroll taxes, benefits, and perquisites paid employees.

Hired Labor Expense as % of Milk Sales: The percentage of the gross milk receipts that is used for labor expense. Divide accrual hired labor expense by accrual milk sales.

Hired Labor Expense per Hired Worker Equivalent: The total cost to the farm per hired worker equivalent. Divide accrual hired labor expense by number of hired plus family paid worker equivalents.

Income Statement: A complete and accurate account of farm business receipts and expenses used to measure profitability over a period of time such as one year or one month.

Intensive Grazing: The dairy herd is on pasture at least three months of the year, changing paddock at least every three days and percent of forage from pasture is at least 30 percent.

Interest Expense Ratio: The percentage of total accrual receipts that is used for interest expense

Intermediate (assets and liabilities): Farm business property and associated debt that is turned over from one to ten years.

Labor and Management Income: (defined on page 13).

Labor and Management Income Per Operator: (defined on page 13).

Labor Efficiency: Production capacity and output per worker. (See analysis on pages 40 and 41).

Labor Force: Operator(s): Person or persons that run the farm and make the management decisions. An operator does not have to be a farm owner. Family Paid: all family members, excluding operators, that are paid for working on the farm. Family Unpaid: all family members, excluding the operators, that are not paid for farm work performed.

Liquidity: Ability of business to generate cash to make debt payments or to convert assets to cash.

Long-Term (assets and liabilities): Farm real estate and associated debt with typical life of ten or more years.

Milk Marketing (expenses): Milk hauling fees and charges, co-op dues, milk advertising and promotion expenses.

Milking Frequency: 2X/day: all cows were milked two times per day for the entire year. 3X/day: all cows were milked three times per day for the entire year. Other: any combination of 2X, 3X, and more frequent milking.

Milking Systems: Bucket and Carry: milk is transferred manually from milking unit to pail to tank. Dumping Station: milk is dumped from milking unit into transfer station and then pumped to tank. Pipeline: milking units are connected directly to milk transfer lines. Herringbone: milking parlor designed to move and milk cows in groups. Other Parlor: parlors in which cows move and are milked individually.

Net Farm Income: (defined on page 12).

Net Farm Income from Operations Ratio: (defined on page 14)

Net Milk Receipts: The mail box price received by farmers before any farmer authorized assignment or deductions.

Net Worth: The value of assets less liabilities equal net worth. It is the equity the owner has in owned assets.

Nondairy Feed: All grain, concentrates, and roughage purchased and fed to nondairy livestock.

Nonfarm Noncash Capital: (defined on page 11).

Nontillable Pasture: Permanent or semi-permanent pasture land that could not be included in a regular cropping sequence or rotation.

Operating Costs of Producing Milk: (defined on page 31).

Operating Expense Ratio: The percentage of total accrual receipts that is used for operating expenses, excluding interest and depreciation.

Opportunity Cost: The cost or charge made for using a resource based on its value in its most likely alternative use. The opportunity cost of a farmer's labor and management is the value he/she would receive if employed in his/her most qualified alternative position.

Other Forage: All forage crops harvested but not included as hay crops or corn silage, e.g. oats, barley, and sudan grass harvested as roughage.

Other Livestock Expenses: All other dairy herd and livestock expenses not included in more specific categories. Other livestock expenses include; bedding, DHIC, milk house and parlor supplies, livestock board, registration fees and transfers.

Part-Time Dairy (farm): Dairy farming is the primary enterprise, cropland is owned but operating and managing this farm is not a full-time occupation for one or more people.

Partnership: Business is owned by two or more individuals who share profits according to their contribution of labor, management, and capital.

Percent Death Rate: The percentage of the average number of milking and dry cows that died during the year.

Percent of Heifer Inventory Custom Inventory: The percent of current heifer inventory owned by the farm that is being custom raised off the farm.

Percent of Replacements Purchased: The percent of replacements that calved in the herd for replacement purposes (not expansion cattle) in 1998 that were different genetic background than your herd and were purchased.

Percent Sell Rate: The percentage of the average number of milking and dry cows that were sold for culling reasons. Animals that were sold as replacement stock to other dairy farms is not included in this number.

Personal Withdrawals and Family Expenditures

Including Nonfarm Debt Payments: All the money removed from the farm business for personal or nonfarm use including family living expenses, health and life insurance, income taxes, nonfarm debt payments, and investments.

Prepaid Expenses: (defined on page 11).

Profitability: The return or net income the owner/manager receives for using one or more of his or her resources in the farm business. True "economic profit" is what remains after deducting all costs including the opportunity costs of the owner/manager's labor, management, and equity capital.

Purchased Inputs Costs of Producing Milk: (defined on page 31).

Repayment Analysis: An evaluation of the business' ability to make planned debt payments.

Replacement Livestock: Dairy cattle and other livestock purchased to replace those that were culled or sold from the herd during the year.

Return on Equity Capital: (defined on page 14).

Return to all Capital: (defined on page 14).

Sole Proprietorship: Business is owned by one individual but there may be more than one operator.

Solvency: The extent or ability of assets to cover or pay liabilities. Debt/asset and leverage ratios are common measures of solvency.

Specialized Dairy Farm: A farm business where dairy farming is the primary enterprise, operating and managing this farm is a full-time occupation for one or more people and cropland is owned.

Statement of Owner Equity (reconciliation): (defined on page 17).

Taxes (expenses): Real estate taxes (school, town, and county). Payroll taxes are included as a hired labor expense. Income and self-employment taxes are a personal expense for all noncorporate taxpayers.

Tillable Acres: All acres that are normally cropped including hayland that is pastured. Acres that are doubled cropped are counted once.

Tillable Pasture: Hay crop acreage currently used for grazing that could be tilled in a regular cropping sequence.

Total Costs of Producing Milk: (defined on page 31).

Value of Calf Sold: The average value received for bull and heifer calves sold as calves during the year.

Value of Cow Sold: The average value received for animals that were sold for culling reasons.

Whole Farm Method: A procedure used to calculate costs of producing milk on dairy farms without using enterprise cost accounts. All non-milk receipts are assigned a cost equal to their sale value and deducted from total farm expenses to determine the costs of producing milk.

Worker Equivalent: The number of full-time workers equivalent to all the full and part-time people working throughout the year. Operator and family labor is included. Worker equivalents are determined by converting all work to full-time months (based on a 230 hours per month) and dividing by 12.

Working Capital: A theoretical measure of the amount of funds available to purchase inputs and inventory items after the sale of current farm assets and payment of all current farm liabilities. Calculated as current farm assets at end year less current farm liabilities at end year.