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DAIRY FARM MANAGEMENT

BUSINESS SUMMARY NEW YORK STATE 2009



*You can't manage what you can't measure.
But if you measure it, you can improve it!*

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**Dairy Farm Management
Business Summary, New York State, 2009**

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ABSTRACT

Business and financial records for 2009 from 204 New York dairy farm businesses are summarized and analyzed. This analysis uses cash accounting with accrual adjustments to measure farm profitability, financial performance, and costs of producing milk. Traditional methods of analyzing dairy farm businesses are combined with evaluation techniques that show the relationship between good management performance and financial success.

The farms in the project averaged 469 cows per farm and 24,208 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 \$-126,820 per farm. The rate of return to all capital invested in the farm business including appreciation averaged -3.5 percent.

Differences in profitability between farms continue to widen. Average net farm income excluding appreciation of the top 10 percent of farms was \$189,108, while the lowest 10 percent was \$-861,956. Rates of return on equity with appreciation ranged from positive 4 percent to negative 46 percent for the highest decile and the lowest decile of farms, respectively.

Large freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow. However, in 2009, they averaged the lowest returns to labor, management and capital. Farms milking three times a day (3X) were larger, produced more milk per cow but had lower net farm incomes in 2009 than herds milking two times per day (2X). Operating costs per hundredweight of milk were \$0.08 per hundredweight lower for 3X than 2X milking herds, while output per cow was 5,222 pounds higher.

Farms adopting intensive grazing generally produced less milk per cow than non-grazing farms but averaged higher labor and management incomes per operator. One should not conclude that adoption of these technologies alone were responsible for differences in performance.

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INTRODUCTION¹

Dairy farm business summary (DFBS) projects are an integral part of Cornell Cooperative Extension's agricultural educational program in New York State. The Charles H. Dyson School of Applied Economics and Management of the College of Agriculture and Life Sciences at Cornell University, and County and Regional Extension staff, cooperate in sponsoring DFBS projects. In 2009, 320 dairy farms participated, including dairy owners, renters, full-time, part-time, and out-of-state farms. Business records submitted by dairy farmers from 46 New York 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. In addition, assistance is provided by individual consultants Bruce Dehm and Charles Radick; Cathy Wickswat from Cargill Animal Nutrition; and by consultants from Farm Credit of Western New York and First Pioneer Farm Credit. Each cooperator receives a detailed summary and analysis of his or her business. All educators are using a computer in their offices or on the farm to process and return the individual farm business reports for immediate use. The program used to generate the farm business reports can be found at the website <http://dfbs.cornell.edu>. 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, solve business and financial management problems and plan the future of their business. For more information, please visit <http://dfbs.aem.cornell.edu>

Individual farm records from the three regions and 46 counties of the State (Figure 1, page 2) have been combined and the total data set analyzed to determine the effects of different levels of price, technology, and management on dairy farm incomes. 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.

Trend Analysis

Farms in New York have changed dramatically over the past 50 years. Farms are larger, more efficient with greater rates of production and generally more profitable. Changes have also occurred in recent years especially in regard to costs and milk price (see pages 3-7).

Farms Included

Data from 204 specialized dairy farms are included in the main body of this report starting on page 8. 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). All New York participants (280) represent more than five percent of the milk cow operations in New York (see Appendix Table A3). The 204 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, part-time dairy operators, and organic farms are not included in the main body of this report. Data on 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. Five measures of farm profitability; net farm income, labor and management income, return on equity, return on 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, as well as budgeting data and debt repayment analysis are 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 66 through 70. Specific studies of the performance of dairy farms using rotational grazing and three times (3X) a day milking are presented on pages 71 and 78.

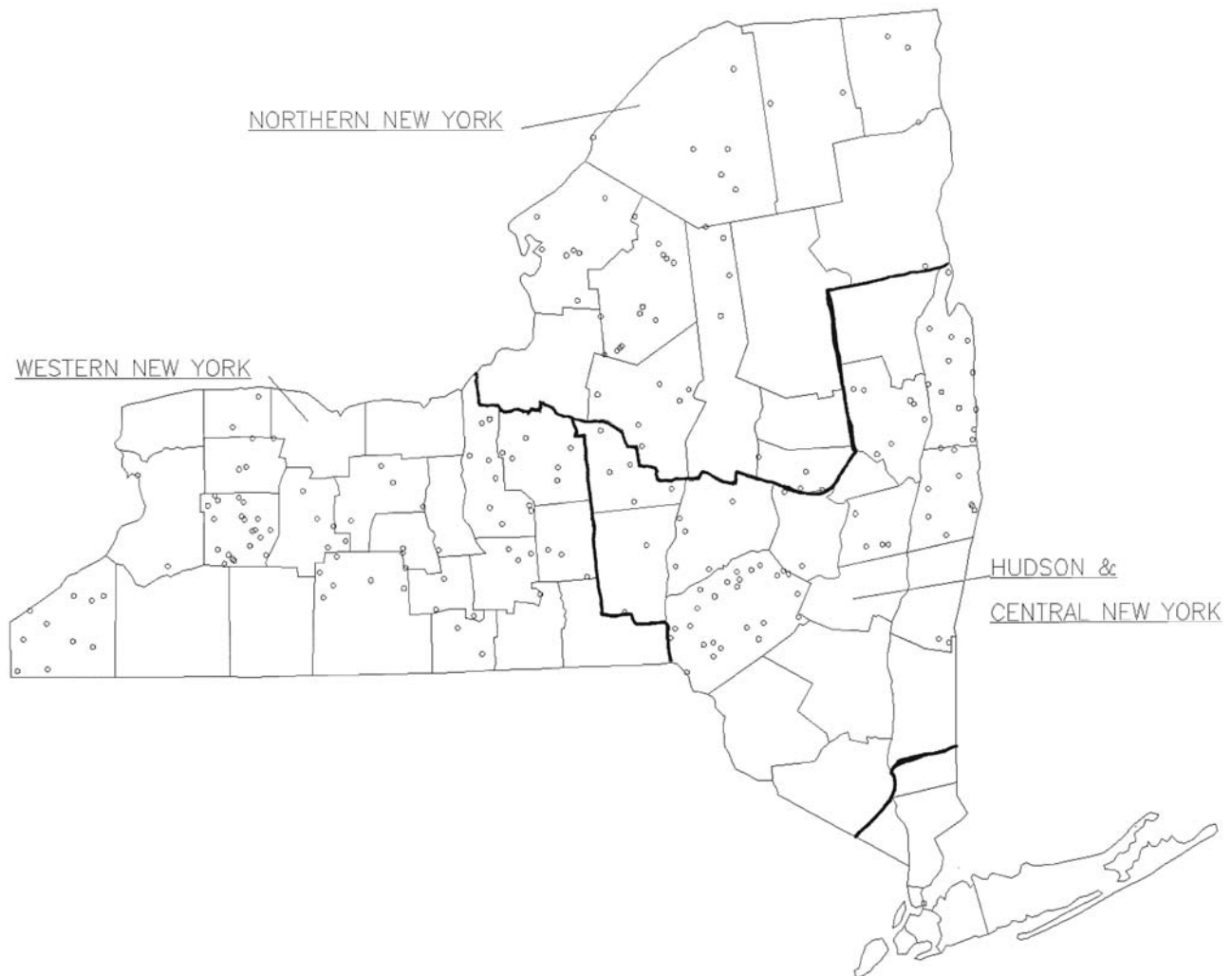
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¹This report was written by Wayne A. Knoblauch, Professor, and Linda D. Putnam, Extension Support Specialist, in the Dyson School of Applied Economics and Management at Cornell University; and Jason Karszes, Senior Extension Associate, Pro-Dairy, Department of Animal Science at Cornell University.

Figure 1.

**LOCATION OF THE 204 NEW YORK DAIRY FARMS
IN THE 2009 DAIRY FARM BUSINESS SUMMARY**



2009 Regional Summary Publications

<u>Region</u>	<u>Publications</u>	<u>Author(s)</u>
Western New York	E.B. 2010-05	Wayne A. Knoblauch, Linda D. Putnam, Jason Karszes, John Hanchar, James Grace, Virginia Carlberg, Joan Petzen, Debra Welch, Molly Ames, Richard Overton, and Kim Skellie.
Northern New York	E.B. 2010-06	Wayne A. Knoblauch, Linda D. Putnam, Jason Karszes, Peggy Murray, Frans Vokey, Jessica Prosper, Anita Deming, David Balbian, Sandy Buxton, Jim Manning, Bonnie Collins, and Richard Overton.
Hudson and Central New York	E.B. 2010-07	Wayne A. Knoblauch, George J. Conneman, Linda D. Putnam, Jason Karszes, Sandy Buxton, Mariane Kiraly, Kirk Shoen, Steve Hadcock, Larry Hulle, Richard Smith, Kim Skellie, and Richard Overton.

FIFTY YEARS OF NEW YORK STATE DAIRY FARM BUSINESS DATA

New York dairy farming has changed dramatically over the past 50 years (Table 1, page 4). Dairy cows per farm on cooperating farms increased 13 fold between 1959 and 2009 with more than a doubling in herd size over the last 10 years. The DFBS sample is not representative of all farms in New York State. Milk output per cow increased 159 percent with the largest increase occurring between 1989 and 1999. Labor efficiency, measured by pounds of milk sold per worker, is up 536 percent on DFBS farms, and the operating cost of producing milk increased more than 720 percent with the largest jump occurring between 1969 and 1979.

There is a large increase in farm capital invested per farm, up 8,519 percent since 1959. Net farm income per farm decreased 252 percent (adjusted for 2009 dollars). Labor and management income per operator is down 405 percent from 50 years ago (adjusted for 2009 dollars). This is a reflection of the increased variability over the last 10 years. Some factors could not be calculated with 1959 and 1969 data because liabilities, interest paid, and appreciation were not available in those years. Farm net worth excluding deferred taxes has increased 910 percent over the last 30 years and rate of return on equity capital decreased 172 percent since 1979.

FOUR YEARS OF VARIABILITY

Recognition and evaluation of the progress that has occurred on farms can best be achieved by studying the same farms over a period of time. Table 2, page 5, presents average data from 138 farms that were DFBS cooperators each year since 2006. Chart 1 shows the price received for milk in comparison to the operating cost of producing a hundredweight of milk for these farms. The higher milk price and higher costs in 2007 still provided dairy farmers with the highest operating margin per hundredweight of \$6.69.

Average net farm income without appreciation in 2009 was 351 percent below the 2006 average, and 141 percent below the 2008 average. Net worth increased 2 percent in 2006, increased 22 percent in 2007, increased 5 percent in 2008, and decreased 8 percent in 2009.

The last four years have been a period requiring skillful decision making and improved management skills on the part of New York dairy farm operators. Risk management skills, including output price management, are becoming more important to farm business success.

Chart 1.

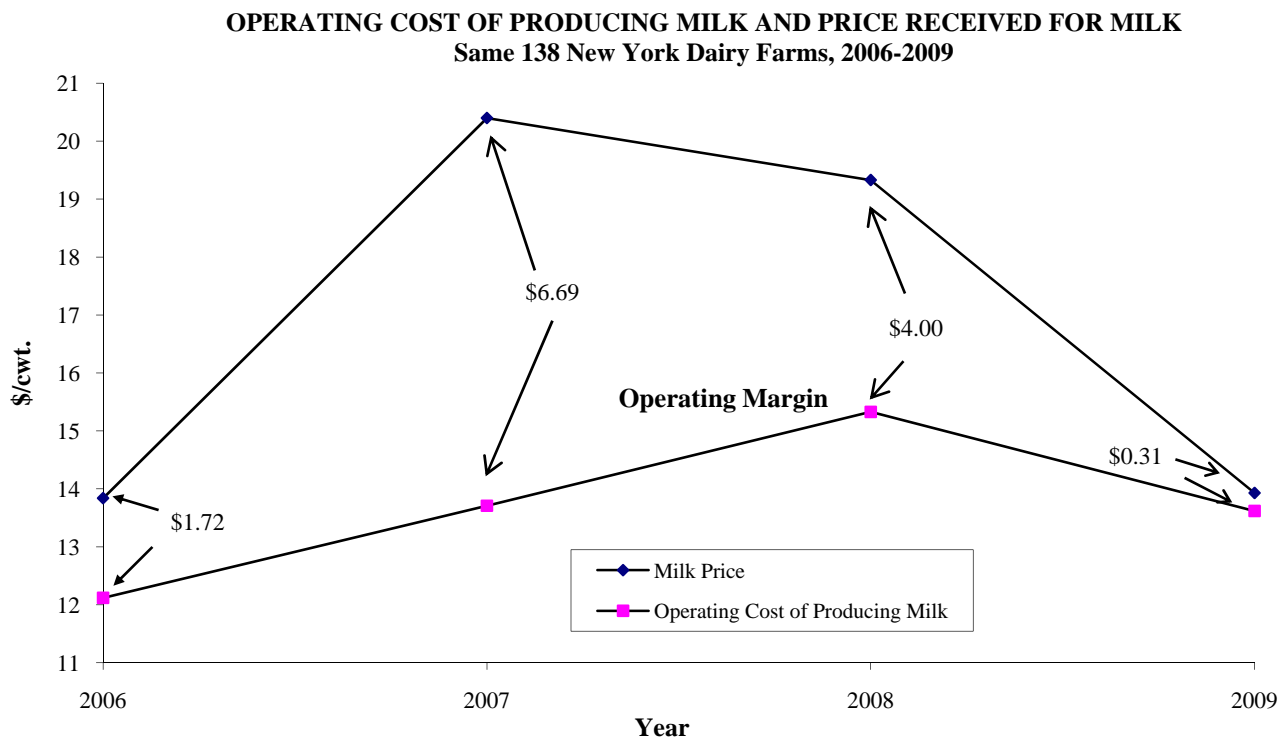


Table 1.

COMPARISON OF FARM BUSINESS SUMMARY DATA
New York Dairy Farms, 1959 - 2009

Selected Factors	1959	1969	1979	1989	1999	2009
Number of farms	542	511	610	409	314	204
<u>Size of Business</u>						
Average number of cows	35	60	75	104	224	469
Average number of heifers	22	40	53	83	164	391
Milk sold, cwt.	3,274	7,617	10,698	17,975	47,932	113,555
Worker equivalent	1.80	2.10	2.70	3.30	5.71	10.74 ⁴
Total tillable acres	104 ²	159 ²	301	316	516	965
<u>Rates of Production</u>						
Milk sold per cow, lbs.	9,360	12,700	14,300	17,259	21,439	24,208
Hay DM per acre, tons	2.0	2.8	2.7	2.7	2.9	3.4
Corn silage per acre, tons	11	16	14	13	16	19
<u>Labor Efficiency</u>						
Cows per worker	19	29	28	32	39	44 ⁴
Milk sold per worker, lbs.	181,900	362,700	400,700	544,598	839,432	1,057,063 ⁴
<u>Cost Control</u>						
Grain & conc. as % of milk sales	26%	24%	27%	27%	25%	38%
Dairy feed & crop expense/cwt.	\$1.73	\$1.68	\$3.27	\$4.92	\$4.75	\$6.41
Operating cost of prod. cwt. milk	\$1.67	\$2.08	\$7.79	\$10.46	\$11.22	\$13.71
Total cost of producing cwt. milk	\$3.71	\$4.55	\$12.78	\$14.74	\$14.31	\$17.05
Milk receipts per cwt. milk	\$4.73	\$5.80	\$11.90	\$14.53	\$14.91	\$13.88
<u>Capital Efficiency</u>						
Total farm capital	\$49,297	\$121,220	\$382,500	\$666,328	\$1,426,432	\$4,249,140
Farm capital per cow	\$1,408	\$2,020	\$5,100	\$6,407	\$6,368	\$9,060
Machinery & equipment per cow	\$295	\$450	\$910	\$1,154	\$1,163	\$1,553
Real estate per cow	\$652	\$950	\$2,440	\$2,977	\$2,562	\$3,713
Livestock investment per cow	\$362	\$482	\$1,417	\$1,364	\$1,508	\$2,256
Asset turnover ratio	0.46	0.50	0.43	0.48	0.59	0.44
<u>Profitability</u>						
Net farm income without apprec. ⁵	NA ³	NA ³	\$81,178	\$85,765	\$157,651	\$-126,820
Net farm income with apprec. ⁵	\$73,796	\$131,063	\$154,047	\$129,382	\$195,016	\$-112,313
Labor & management income per operator/manager ⁵	\$48,288	\$67,731	\$22,490	\$31,147	\$55,395	\$-147,313
Rate of return on:						
Equity capital with appreciation	11.6%	13.2%	10.4%	9.8%	12.0%	-7.5%
All capital with appreciation	NA	NA	9.2%	9.4%	9.7%	-3.5%
All capital without appreciation	NA	NA	3.2%	5.6%	7.7%	-3.9%
<u>Financial Summary, End Year</u>						
Farm net worth	NA	NA	\$261,398	\$468,848	\$865,626	\$2,639,640
Change in net worth with apprec.	NA	NA	\$43,900	\$45,260	\$81,992	\$-224,008
Debt to asset ratio	NA	NA	0.37	0.32	0.42	0.38
Farm debt per cow	NA	NA	\$1,930	\$2,048	\$2,702	\$3,361

²Acres of cropland harvested.

³NA = not available.

⁴Based on hours actually worked by owner/operator instead of standard 12 months per full-time owner/operator.

⁵Profitability measures adjusted for inflation using Consumer Price Index – 2009 dollars.

Table 2.

COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 138 New York Dairy Farms, 2006 - 2009

Selected Factors	2006	2007	2008	2009
Milk receipts per cwt. milk	\$13.84	\$20.40	\$19.33	\$13.93
<u>Size of Business</u>				
Average number of cows	444	457	471	492
Average number of heifers	356	366	390	416
Milk sold, cwt.	104,557	107,789	114,293	119,790
Worker equivalent ⁶	10.17	10.45	10.86	11.26
Total tillable acres	861	896	954	991
<u>Rates of Production</u>				
Milk sold per cow, lbs.	23,541	23,607	24,270	24,326
Hay DM per acre, tons	3.3	3.1	3.7	3.4
Corn silage per acre, tons	19	19	20	19
<u>Labor Efficiency</u>				
Cows per worker ⁶	44	44	43	44
Milk sold per worker, lbs. ⁶	1,028,175	1,031,142	1,052,019	1,064,094
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	29%	24%	30%	38%
Dairy feed & crop expense per cwt. milk	\$5.02	\$6.10	\$7.32	\$6.47
Operating cost of producing cwt. milk	\$12.12	\$13.71	\$15.33	\$13.62
Total cost of producing cwt. milk	\$15.19	\$16.96	\$18.78	\$16.93
Hired labor cost per cwt.	\$2.66	\$2.76	\$2.87	\$2.75
Interest paid per cwt.	\$0.73	\$0.74	\$0.54	\$0.52
Labor & machinery costs per cow	\$1,364	\$1,474	\$1,630	\$1,458
<u>Capital Efficiency, Average for Year</u>				
Farm capital per cow	\$7,634	\$8,232	\$8,987	\$8,972
Machinery & equipment per cow	\$1,298	\$1,387	\$1,556	\$1,609
Real estate per cow	\$2,970	\$3,159	\$3,392	\$3,518
Livestock investment per cow	\$2,121	\$2,242	\$2,340	\$2,252
Asset turnover ratio	0.54	0.71	0.61	0.45
<u>Profitability</u>				
Net farm income without appreciation	\$47,936	\$578,390	\$295,597	\$-120,261
Net farm income with appreciation	\$160,468	\$759,626	\$367,340	\$-103,902
Labor & management income per operator/manager	\$-37,997	\$262,380	\$83,390	\$-146,634
Rate return on:				
Equity capital with appreciation	3.7%	27.1%	9.6%	-7.1%
All capital with appreciation	4.6%	20.1%	8.0%	-3.1%
All capital without appreciation	1.3%	15.3%	6.3%	-3.5%
<u>Financial Summary, End Year</u>				
Farm net worth	\$2,166,757	\$2,805,306	\$2,955,893	\$2,725,284
Change in net worth with appreciation	\$36,976	\$620,780	\$141,031	\$-229,745
Debt to asset ratio	0.38	0.31	0.33	0.39
Farm debt per cow	\$2,882	\$2,717	\$2,997	\$3,371

⁶Based on hours actually worked by owner/operator instead of standard 12 months per full-time owner/operator.

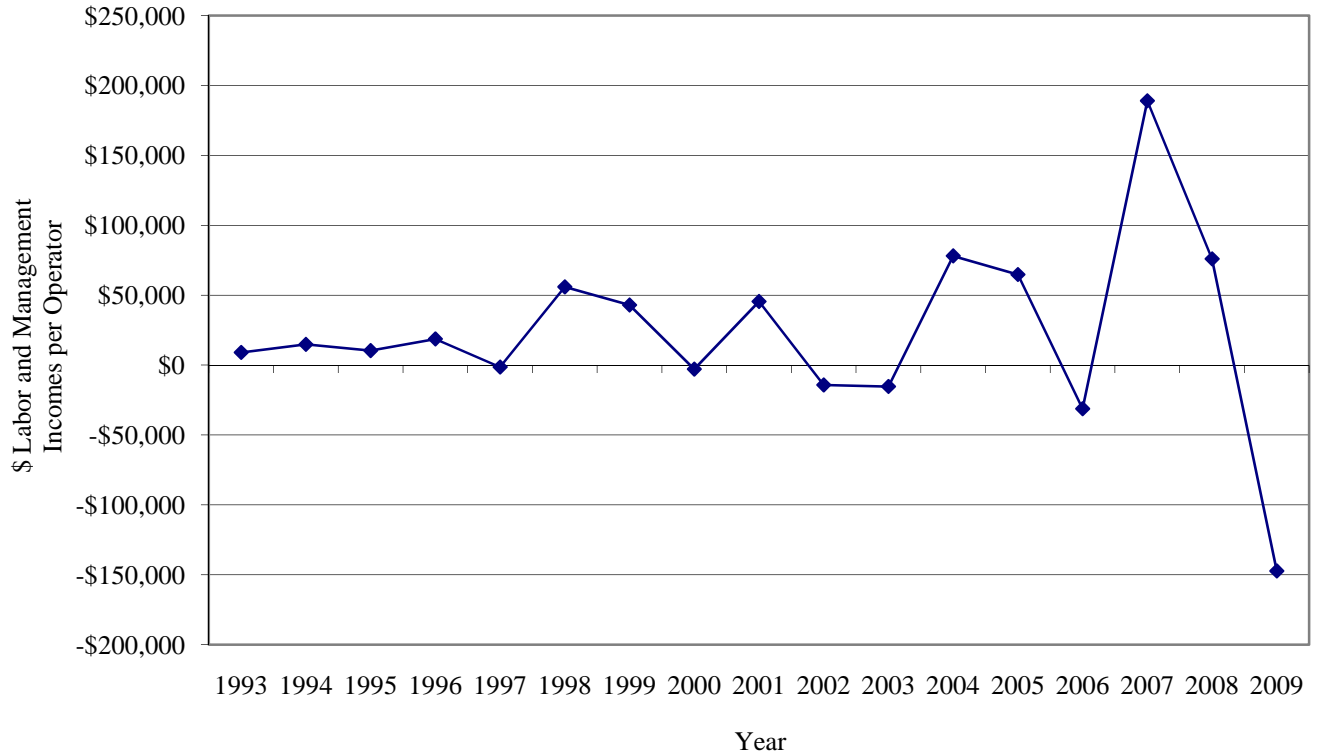
ADJUSTING PROFIT, PRICE AND COSTS FOR INFLATION

Labor and management incomes per operator in 2009 were extremely low, when measured in nominal (actual) value (Chart 2). Over the period 1993 to 2009, labor and management incomes per operator did not exceed \$50,000 except for \$55,000 in 1998, over \$78,000 in 2004, nearly \$65,000 in 2005, \$189,019 in 2007, and \$75,945 in 2008. The reader is reminded that the average herd size of DFBS participating farms steadily increased from 130 cows to 469 cows over this period.

Chart 2.

LABOR AND MANAGEMENT INCOMES PER OPERATOR

Dairy Farm Business Summary Farms, 1993-2009

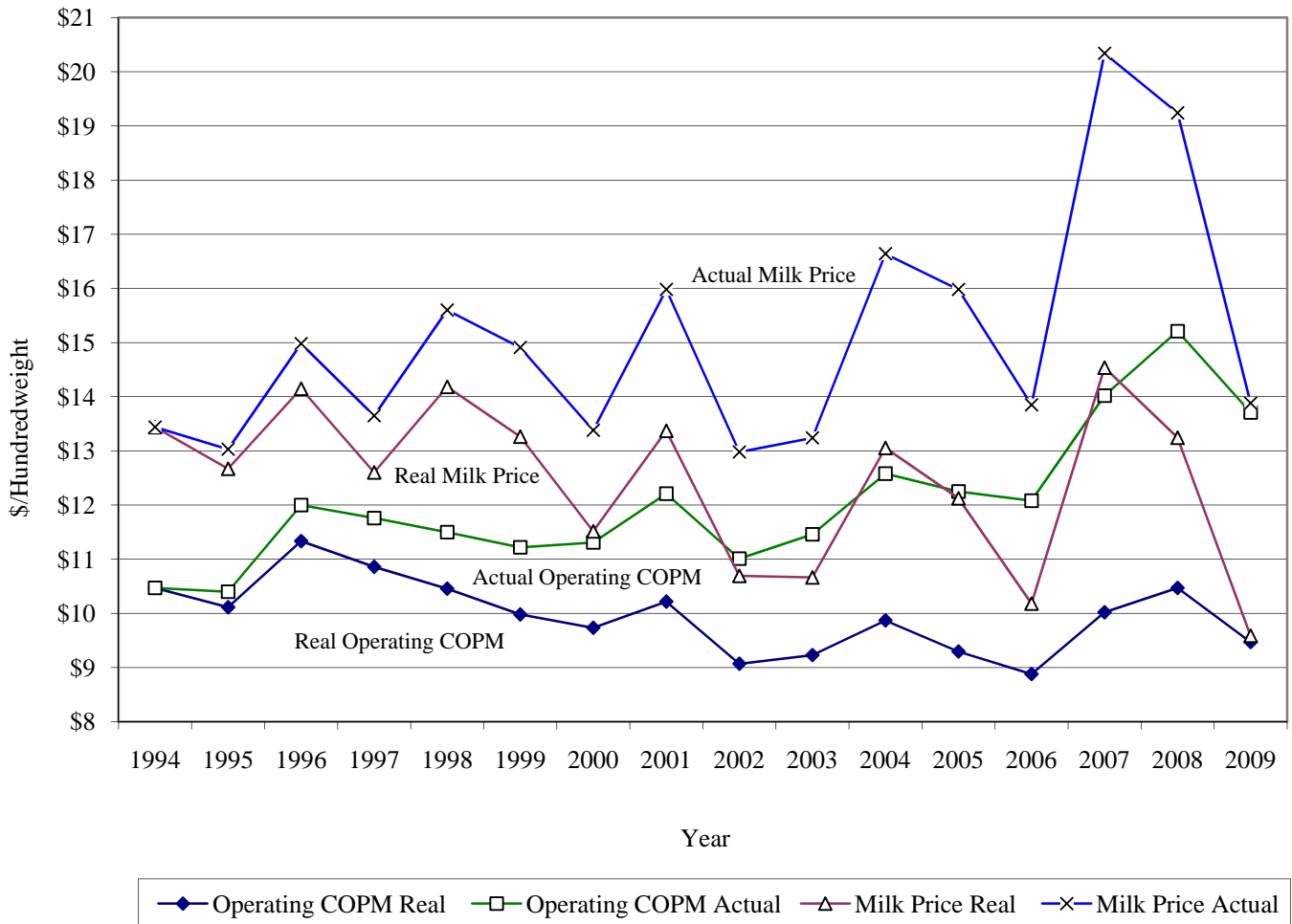


Milk prices in 2009 averaged \$13.88 per hundredweight in actual dollars (Chart 3). However, the 2009 milk price, adjusted for inflation, in 1994 dollars, would have been only \$9.59 per hundredweight.

Operating cost of producing milk (actual) was similar in 1994 and 1995 (Chart 3). Feed costs were higher in 1996 and so were operating costs of producing milk. Operating costs were on a downward trend from 1996 through 2000. Operating costs then increased in 2001, fell in 2002, and increased in 2003 and 2004, but remained higher than the early 1990's. Operating costs decreased slightly in 2005 and 2006 but increased nearly \$2 per hundredweight in 2007 and another \$1.19 in 2008 followed by a \$1.50 decrease in 2009. Real costs of producing milk per hundredweight have been on a downward trend over this 15-year period except for increases in 1996, 2001, 2004, 2007 and 2008.

Chart 3.

OPERATING COST OF PRODUCING MILK AND MILK PRICE⁷
Dairy Farm Business Summary Farms, 1994-2009



⁷ Actual operating cost of producing milk as well as milk price are adjusted for inflation, to obtain real values, using the Consumer Price Index-1994 dollars.

Accounting Procedures

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

The accrual accounting adjustments 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 is included in the return to farm capital, but excluded from the return to labor and management.

Income Statement - Expenses

The accrual income statement 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 and roughage are not included in cash and accrual feed expenses.
3. Machinery costs represent all the operating costs of using machinery on the farm. Ownership costs are excluded here but are included in the analysis of machinery costs presented on page 22.
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 farm land and buildings.
7. Other includes insurance, the farm share of utilities, interest paid on all farm indebtedness and miscellaneous costs.
8. Expansion livestock is purchased dairy cattle and other livestock that cause an increase in herd size from the beginning to the end of the year. It 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 purposes.

Cash and accrual farm expenses are summarized below. Total operating accrual expenses for the 204 Farms averaged \$4,945 per day and 92 percent of total farm accrual expenses. 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.

Table 4.

CASH AND ACCRUAL FARM EXPENSES
204 New York Dairy Farms, 2009

Expense Item	Cash Paid	-	Change in Inventory or Prepaid Expense	+	Change in Accounts Payable	=	Accrual Expenses	Per- cent
<u>Hired Labor</u>	\$305,385		\$-948 <<		\$-252		\$306,082	17
<u>Feed</u>								
Dairy grain & concentrate	518,786		-50,134		19,493		588,413	33
Dairy roughage	29,893		-225		62		30,181	2
Nondairy livestock	99		0		5		104	<1
Professional nutritional services	303		0 <<		2		306	<1
<u>Machinery</u>								
Machinery hire, rent & lease	38,106		-8 <<		701		38,815	2
Machinery repairs & farm vehicle expense	81,342		184		1,493		82,651	5
Fuel, oil & grease	62,868		-822		1,067		64,757	4
<u>Livestock</u>								
Replacement livestock	6,876		-16 <<		-3		6,888	<1
Breeding	22,410		-976		90		23,476	1
Veterinary & medicine	69,096		-941		1,214		71,250	4
Milk marketing	99,369		0 <<		352		99,720	6
Bedding	36,710		-780		295		37,785	2
Milking Supplies	41,925		-802		687		43,414	2
Cattle lease & rent	1,257		0 <<		-11		1,246	<1
Custom boarding	40,056		63 <<		643		40,636	2
bST expense	25,764		-50 <<		242		26,056	1
Livestock professional fees	4,809		-402 <<		95		5,306	<1
Other livestock expense	8,885		-45		128		9,058	1
<u>Crops</u>								
Fertilizer & lime	40,023		-3,264		2,879		46,166	3
Seeds & plants	29,030		-9,872		697		39,599	2
Spray & other crop expense	19,870		-938		168		20,976	1
Crop professional fees	2,403		-149 <<		166		2,718	<1
<u>Real Estate</u>								
Land, building & fence repair	24,446		-631		655		25,732	1
Taxes	23,977		-494 <<		88		24,558	1
Rent & lease	27,189		-119 <<		122		27,429	2
<u>Other</u>								
Insurance	18,801		-672 <<		125		19,598	1
Utilities	42,874		-70 <<		141		43,085	2
Interest paid	57,924		0 <<		-372		57,552	3
Other professional fees	10,291		-354 <<		147		10,792	1
Miscellaneous	10,223		-120		552		10,895	1
Total Operating	\$1,700,989		\$-72,583		31,671		\$1,805,243	100
Expansion livestock	\$14,262		-9 <<		-53		\$14,219	
Extraordinary expense	\$797		0		74		\$870	
Machinery depreciation							\$86,896	
Building depreciation							\$58,758	
TOTAL ACCRUAL EXPENSES							\$1,965,987	

Change in inventory represents feeds and supplies purchased this year but not used (positive change), and similar items purchased in a prior year and used this year (negative change). For example, used dairy grain and concentrate inventory from a prior year was \$50,134.

Prepaid expenses (noted by « in Table 4) are advance payments made for services and noninventory items to be used in future years. For example, advance payments for rent decreased an average of \$119 per farm in 2009, and that decrease is added to cash rent to determine the correct 2009 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 \$-72,583 and total change in accounts payable equals \$31,671.

Income Statement - Receipts

Cash and accrual farm receipts are presented in the following table. Total cash receipts averaged \$1,807,858 per farm. Total accrual receipts averaged \$1,839,167 per farm. Accrual receipts were greater than cash receipts due to dairy herd growth. Cow numbers increased an average of 23 head per farm. Homegrown feed inventory per cow decreased \$48 from beginning to end of year.

Table 5.

CASH AND ACCRUAL FARM RECEIPTS 204 New York Dairy Farms, 2009

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts	Percent
Milk sales	\$1,593,700				\$-17,456		\$1,576,244	86
Dairy cattle	76,546		\$45,361		-123		121,785	7
Dairy calves	9,485		6,981		-13		16,453	<1
Other livestock	2,960		661		-65		3,557	<1
Crops	20,837		-5,089		16		15,764	<1
Government receipts	67,272		-218		-9		67,046	4
Custom machine work	5,778				1,036		6,814	<1
Gas tax refund	309				0		309	<1
Other	30,971				225		31,196	2
- Nonfarm noncash capital transfer ⁹			(-) 0				(-) 0	
Total	\$1,807,858		\$47,697		\$-16,387		\$1,839,167	100

⁸Change in advanced government receipts.

⁹Gifts 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 2008 to 2009. 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 2009 marketings and the previous January's check, and other delayed payments.

Nonfarm noncash capital transfers 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 \$14,507 per farm in 2009. On the average, farm real estate appreciated \$64,207 or 4 percent of beginning fair market value. Machinery appreciated 2.2 percent while dairy cattle prices appreciated -6.2 percent in 2009.

Average data from 20 farms with the highest rates of return to all capital (without appreciation) are compared with the 204 farm average in Table 8 and in many of the following tables. Net farm income without appreciation averaged \$165,173 per farm on the top 10 percent farms, 230 percent greater than the 204-farm average.

Table 6.

NET FARM INCOME 204 New York Dairy Farms, 2009

Item	Average 204 Farms		Average Top 10% Farms ¹⁰	
	Per Farm	Per Cow	Per Farm	Per Cow
Total accrual receipts	\$1,839,167		\$2,552,288	
+ Appreciation: Livestock	-66,330		-89,053	
Machinery	16,251		14,494	
Real Estate	64,207		72,309	
Other Stock & Certificates	<u>379</u>		<u>6,901</u>	
= Total including appreciation	\$1,853,673		\$ 2,556,939	
- Total accrual expenses	<u>1,965,987</u>		<u>2,387,116</u>	
= Net Farm Income (with appreciation)	\$-112,313	\$-239	\$169,823	\$273
Net Farm Income (without appreciation)	\$-126,820	\$-270	\$165,173	\$265

¹⁰Average of 20 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 five 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
204 New York Dairy Farms, 2009**

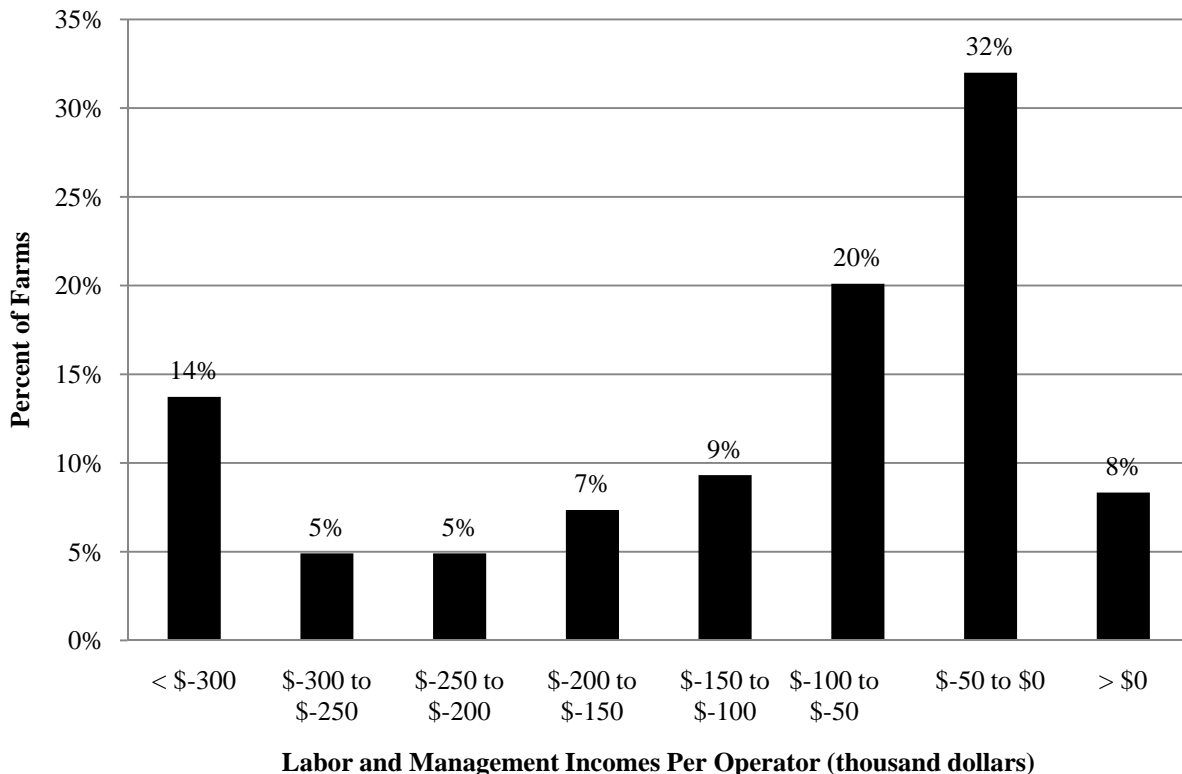
Item	Average 204 Farms	Average Top 10% Farms ¹¹
Net farm income without appreciation	\$ -126,820	\$165,173
- Family labor unpaid @ \$2,500 per month	5,168	2,500
- Real interest @ 5% on \$2,751,644 equity capital for average & \$3,591,870 for the top 10% farms	<u>137,596</u>	<u>179,594</u>
= Labor & Management Income (1.83 operators)	\$-269,583	(1.83 operators) \$-16,921
Labor & Management Income per Operator	\$-147,313	\$-9,246

¹¹Average of 20 farms with highest rates of return to all capital (without appreciation).

Labor and management income per operator averaged \$-147,313 on these 204 dairy farms in 2009. The range in labor and management income per operator was from less than \$-2,695,600 to more than \$250,590. Returns to labor and management were less than \$-200,000 on 24 percent of the farms. Labor and management incomes per operator were between \$-200,000 and \$-50,000 on 36 percent of the farms while 40 percent showed labor and management incomes of \$-50,000 or more per operator.

Chart 4.

**DISTRIBUTION OF LABOR AND MANAGEMENT INCOMES PER OPERATOR
204 New York Dairy Farms, 2009**



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 year's 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
204 New York Dairy Farms, 2009**

Item	Average 204 Farms	Average Top 10% Farms ¹²
Net farm income with appreciation	\$-112,313	\$169,823
- Family labor unpaid at \$2,500 per month	5,168	2,500
- Value of operators' labor & management	<u>89,950</u>	<u>89,606</u>
= Return to equity capital with appreciation	\$-207,431	\$77,717
+ Interest paid	<u>57,552</u>	<u>75,216</u>
= Return to all capital with appreciation	\$-149,879	\$152,932
Return to equity capital without appreciation	\$-221,938	\$73,066
Return to all capital without appreciation	\$-164,386	\$148,282
Rate of return on average equity capital:		
with appreciation	-7.5%	2.2%
without appreciation	-8.1%	2.0%
Rate of return on all capital:		
with appreciation	-3.5%	2.9%
without appreciation	-3.9%	2.8%
Net farm income from operations ratio	-0.07	0.06

¹²Average of 20 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
204 New York Dairy Farms, 2009**

Item	Quartile by Return to All Capital With Appreciation			
	Lowest 25%	3rd 25%	2nd 25%	Top 25%
Return to all capital with appreciation	\$-554,534	\$-121,310	\$-47,398	\$123,726
Rate of return on all capital with appreciation	-8.0%	-7.6%	-6.0%	1.5%
Total returns to all labor & management	\$-56,567	\$27,549	\$-15,524	\$211,208
Worker equivalent	19.39	8.08	3.87	11.62
Return per worker equivalent	\$-2,917	\$3,410	\$-4,011	\$18,172
Returns/hour (2,760 hours/worker/year)	\$-1.06	\$1.24	\$-1.45	\$6.58

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.

2009 FARM BUSINESS AND NONFARM BALANCE SHEET
204 New York Dairy Farms, 2009

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$23,558	\$42,976	Accounts payable	\$58,586	\$90,278
Accounts receivable	154,592	138,204	Operating debt	107,429	114,250
Prepaid expenses	7,091	3,914	Short term	3,950	7,887
Feed & supplies	<u>483,209</u>	<u>408,706</u>	Advanced gov't. receipt	42	260
Total Current	\$668,450	\$593,800	Current portion:		
			Intermediate	104,007	115,524
			Long term	<u>33,939</u>	<u>36,547</u>
			Total Current	\$307,954	\$364,746
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy Cows:			Structured debt		
owned	\$663,757	\$659,069	1-10 years	\$539,925	\$666,914
leased	1,855	2,258	Financial lease		
Heifers	393,038	383,867	(cattle & machinery)	5,495	5,479
Bulls & other livestock	7,871	8,404	Farm Credit stock	<u>1,257</u>	<u>1,113</u>
Mach. & equip. owned	722,439	727,222	Total Intermediate	\$546,677	\$673,506
Mach. & equip. leased	3,641	3,221			
Farm Credit stock	1,257	1,113	<u>Long Term</u>		
Other stock & certificates	<u>83,513</u>	<u>91,825</u>	Structured debt		
Total Intermediate	\$1,877,371	\$1,876,979	≥ 10 years	\$528,488	\$573,218
<u>Long Term</u>			Financial lease		
Land & buildings:			(structures)	<u>431</u>	<u>1,522</u>
owned	\$1,700,945	\$1,780,332	Total Long Term	\$528,919	\$574,740
leased	<u>431</u>	<u>1,522</u>			
Total Long Term	\$1,701,376	\$1,781,854	Total Farm Liabilities	\$1,383,550	\$1,612,992
Total Farm Assets	\$4,247,197	\$4,252,632	FARM NET WORTH	\$2,863,647	\$2,639,640
Nonfarm Assets ¹³	Jan.1	Dec. 31	Nonfarm Liabilities ¹³ & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	\$ 12,193	\$ 12,788	Nonfarm Liabilities	\$5,881	\$5,762
Cash value life insurance	36,215	38,934	NONFARM NET WORTH	\$187,697	\$201,212
Nonfarm real estate	72,150	74,762	FARM & NONFARM ¹⁴	Jan. 1	Dec. 31
Auto (personal share)	7,312	7,045	Total Assets	\$4,440,774	\$4,459,606
Stocks & bonds	42,898	49,270	Total Liabilities	<u>1,389,421</u>	<u>1,618,754</u>
Household furnishings	7,545	7,591	TOTAL FARM & NON-		
All other	<u>15,264</u>	<u>16,584</u>	FARM NET WORTH	\$3,051,353	\$2,840,852
Total Nonfarm	\$193,577	\$206,974			

¹³Average of 66 farms completing the nonfarm balance sheet.

¹⁴Sum of average farm values for 204 farms and nonfarm values for 66 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 making 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. The leverage ratio is the dollars of debt per dollar of equity, computed by dividing total farm liabilities by farm net worth. Debt levels per unit of productive capacity include some old standards that are still useful if used with measures of cash flow and repayment ability.

Table 11.

FARM BALANCE SHEET ANALYSIS
204 New York Dairy Farms, 2009

Item	Average 204 Farms	Average Top 10% Farms ¹⁵		
<u>Farm Financial Ratios:</u>				
Percent equity	62%	66%		
Debt/asset ratio: total	0.38	0.34		
long term	0.32	0.26		
intermediate & current	0.42	0.39		
Leverage Ratio:	0.61	0.51		
Current Ratio:	1.63	1.53		
Working Capital: \$229,053 Dollars as % of Total Expenses:	12%	\$251,308 11%		
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt	6%	4%		
Long term liabilities as % of total debt	36%	32%		
Current & intermediate liabilities as % of total debt	64%	68%		
Cost of term debt (weighted average)	4.4%	4.4%		
<u>Farm Debt Levels:</u>				
	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>	<u>Per Cow</u>	<u>Per Tillable Acre Owned</u>
Total farm debt	\$3,361	\$3,335	\$2,841	\$2,993
Long term debt	1,198	1,188	920	969
Intermediate & long term	2,601	2,581	2,107	2,220
Intermediate & current debt	2,163	2,147	1,921	2,024

¹⁵Average of 20 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
204 New York Dairy Farms, 2009

Item	Real Estate	Machinery & Equipment	Livestock
Value beginning of year	\$1,700,945	\$722,439	\$1,064,666
Purchases	\$120,265 ¹⁶	\$80,002	
+ nonfarm noncash transfer ¹⁷	2,171	640	
- Lost capital	40,349		
- Net sales	8,149	5,214	
- Depreciation	<u>58,758</u>	<u>86,896</u>	
= Net Investment	15,180	-11,468	53,003
+ Appreciation	<u>64,207</u>	<u>16,251</u>	<u>-66,330</u>
Value end of year	\$1,780,332	\$727,222	\$1,051,339

¹⁶\$31,795 land and \$88,470 buildings and/or depreciable improvements.

¹⁷Gifts 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 were caused by (1) earnings from the business, and nonfarm income, (in excess of withdrawals) being retained in the business (retained earnings), (2) outside capital invested in the business or farm capital 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)
204 New York Dairy Farms, 2009**

Item	Average 204 Farms	Average Top 10% Farms ¹⁹
Beginning of year farm net worth	\$2,863,648	\$3,596,226
Net farm income without appreciation	\$-126,820	\$165,173
+ Nonfarm cash income	7,714	1,612
- Personal withdrawals & family expenditures and income taxes, excluding nonfarm borrowings	<u>103,075</u>	<u>119,891</u>
RETAINED EARNINGS	+ \$-222,180	+ \$46,894
Nonfarm noncash transfers to farm	\$2,811	\$0
+ Cash used in business from nonfarm capital	20,821	408
- Note or mortgage from farm real estate sold (nonfarm)	<u>924</u>	<u>0</u>
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$22,708	+ \$408
Appreciation	\$14,507	\$4,651
- Lost capital	<u>40,349</u>	<u>64,550</u>
CHANGE IN VALUATION EQUITY	+ \$-25,843	+ \$-59,899
IMBALANCE/ERROR	<u>- \$-1,307</u>	<u>- \$-3,885</u>
End of year farm net worth ¹⁸	\$2,639,640	\$3,587,514
<u>Change in Net Worth</u>		
Without appreciation	\$-238,515	\$-13,363
With appreciation	\$-224,008	\$ -8,712

¹⁸May not add due to rounding.

¹⁹Average of 20 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. It is also a means useful in determining accuracy and completeness of the data. Understanding last year's cash flow is the first step in 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 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 flows.

Table 14.

**ANNUAL CASH FLOW STATEMENT
204 New York Dairy Farms, 2009**

Item	Average 204 Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$1,807,858	
- Cash farm expenses	1,700,989	
- Extraordinary expense	<u>797</u>	
= Net cash farm income		\$106,072
Personal withdrawals & family expenses including nonfarm debt payments	\$103,693	
- Nonfarm income	<u>7,714</u>	
- Net cash withdrawals from the farm		<u>\$ 95,978</u>
= Net Provided by Operating Activities		\$10,093
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$5,214	
+ real estate	7,225	
+ other stock & certificates	<u>1,468</u>	
= Total asset sales		\$13,908
Capital purchases: expansion livestock	\$ 14,262	
+ machinery	80,002	
+ real estate	120,265	
+ other stock & certificates	<u>9,402</u>	
- Total invested in farm assets		<u>\$223,931</u>
+ Net Provided by Investment Activities		\$-210,024
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$329,252	
+ Money borrowed (short term)	8,719	
+ Increase in operating debt	6,821	
+ Cash from nonfarm capital used in business	20,821	
+ Money borrowed - nonfarm	<u>618</u>	
= Cash inflow from financing		\$366,231
Principal payments (intermediate & long term)	\$143,414	
+ Principal payments (short term)	4,782	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$148,195</u>
= Net Provided by Financing Activities		\$218,035
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$23,558
- Ending farm cash, checking & savings		<u>\$42,976</u>
= Net Provided from Reserves		\$-19,418
<u>Imbalance (error)</u>		\$-1,313

Table 15.

ANNUAL CASH FLOW DATA
204 New York Dairy Farms, 2009

Item	Average 204 Farms			Average Top 10% Farms ²¹		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Average number of cows and cwt. milk		469	113,555		623	152,587
<u>Accrual Operating Receipts</u>						
Milk	\$1,576,244	\$3,360	\$13.88	\$2,145,164	\$3,442	\$14.06
Dairy cattle	121,785	260	1.07	174,734	280	1.15
Dairy calves	16,453	35	0.14	37,073	59	0.24
Other livestock	3,557	8	0.03	11,115	18	0.07
Crops	15,764	34	0.14	40,963	66	0.27
Miscellaneous receipts	<u>105,365</u>	<u>225</u>	<u>0.93</u>	<u>143,239</u>	<u>230</u>	<u>0.94</u>
Total	\$1,839,167	\$3,921	\$16.20	\$2,552,288	\$4,096	\$16.73
<u>Accrual Operating Expenses</u>						
Hired labor	\$ 306,082	\$ 653	\$ 2.70	\$ 399,846	\$ 642	\$ 2.62
Dairy grain & concentrate	588,413	1,254	5.18	731,240	1,173	4.79
Dairy roughage	30,181	64	0.27	63,315	102	0.41
Nondairy feed	104	0	0.00	324	1	0.00
Professional nutritional services	306	1	0.00	163	0	0.00
Machinery hire, rent & lease	38,815	83	0.34	39,832	64	0.26
Machinery repairs & vehicle expense	82,651	176	0.73	96,974	156	0.64
Fuel, oil & grease	64,757	138	0.57	67,127	108	0.44
Replacement livestock	6,888	15	0.06	21,312	34	0.14
Breeding	23,476	50	0.21	27,710	44	0.18
Veterinary & medicine	71,250	152	0.63	80,253	129	0.53
Milk marketing	99,720	213	0.88	131,603	211	0.86
Bedding	37,785	81	0.33	30,777	49	0.20
Milking supplies	43,414	93	0.38	52,489	84	0.34
Cattle lease	1,246	3	0.01	4,605	7	0.03
Custom boarding	40,636	87	0.36	52,596	84	0.34
bST expense	26,056	56	0.23	32,473	52	0.21
Livestock professional fees	5,306	11	0.05	3,236	5	0.02
Other livestock expense	9,058	19	0.08	10,305	17	0.07
Fertilizer & lime	46,166	98	0.41	44,887	72	0.29
Seeds & plants	39,599	84	0.35	43,155	69	0.28
Spray/other crop expense	20,976	45	0.18	27,242	44	0.18
Crop professional fees	2,718	6	0.02	1,976	3	0.01
Land, building & fence repair	25,732	55	0.23	29,581	47	0.19
Taxes	24,558	52	0.22	28,194	45	0.18
Real estate rent & lease	27,429	58	0.24	29,730	48	0.19
Insurance	19,598	42	0.17	18,601	30	0.12
Utilities	43,085	92	0.38	50,841	82	0.33
Miscellaneous	<u>21,687</u>	<u>46</u>	<u>0.20</u>	<u>23,612</u>	<u>38</u>	<u>0.15</u>
Total Less Interest Paid	\$1,747,691	\$3,726	\$15.39	\$2,143,995	\$3,441	\$14.05
<u>Net Accrual Operating Income</u>						
(without interest paid)	\$ 91,476	\$ 195	\$ 0.81	\$ 408,293	\$ 655	\$ 2.68
- Change in livestock & crop inventory	47,697	102	0.42	134,437	216	0.88
- Change in accounts receivable	-16,387	-35	-0.14	-29,787	-48	-0.20
- Change in feed & supply inventory	-72,583	-155	-0.64	-64,747	-104	-0.42
+ Change in accounts payable ²⁰	<u>32,043</u>	<u>68</u>	<u>0.28</u>	<u>51,781</u>	<u>83</u>	<u>0.34</u>
NET CASH FLOW	\$ 164,792	\$ 351	\$ 1.45	\$ 420,171	\$ 674	\$ 2.75
- Net personal withdrawals & family exp.	<u>94,120</u>	<u>201</u>	<u>0.83</u>	<u>118,253</u>	<u>190</u>	<u>0.77</u>
Available for Farm Debt Payments & Invest.	\$ 70,673	\$ 151	\$ 0.62	\$ 301,917	\$ 485	\$ 1.98
- Farm debt payments	<u>241,298</u>	<u>514</u>	<u>2.12</u>	<u>329,636</u>	<u>529</u>	<u>2.16</u>
Cash available for Farm Investments	-\$170,625	-\$364	-\$1.50	-\$27,718	-\$44	-\$0.18

²⁰Exclude change in interest account payable.²¹Average of 20 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 then to 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 2008 and 2009.

Table 16.

FARM DEBT PAYMENTS PLANNED 177 New York Dairy Farms, 2009

Debt Payments	177 Dairy Farms			20 Top 10% Farms		
	2009 Payments		Planned	2009 Payments		Planned
	Planned	Made	2010	Planned	Made	2010
Long term	\$ 65,754	\$ 63,348	\$ 65,991	\$ 61,426	\$ 70,040	\$ 62,972
Intermediate term	147,218	144,661	152,718	198,289	175,802	182,408
Short term	2,985	5,191	4,455	500	500	550
Operating (net reduction)	3,522	35,782	14,507	0	81,820	25,001
Accts. payable (net reduction)	<u>565</u>	<u>4,150</u>	<u>5,025</u>	<u>0</u>	<u>1,473</u>	<u>5,000</u>
Total	\$220,044	\$253,132	\$242,696	\$260,216	\$329,636	\$275,931
Per cow	\$442	\$508		\$418	\$529	
Per cwt. 2009 milk	\$1.81	\$2.09		\$1.71	\$2.16	
Percent of 2009 milk receipts	13%	15%		12%	15%	

The cash flow coverage ratio and debt coverage ratio measure the ability of the farm business to meet its planned debt payments from normal operation of the business. Debt coverage ratio indicates the income generated to make payments while cash flow coverage ratio shows the cash available to make payments.

Table 17.

COVERAGE RATIOS 177 New York Dairy Farms, 2009

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$1,923,414	Net farm income (without apprec.)	\$-127,121
- Cash farm expenses	1,806,811	+ Depreciation	155,535
+ Interest paid (cash)	60,553	+ Interest paid (accrual)	60,097
- Net personal withdrawals from farm ²²	<u>101,797</u>	- Net personal withdrawals from farm ²²	<u>101,797</u>
(A) = Amount Available for Debt Service	\$75,359	(A') = Repayment Capacity	\$ -13,286
(B) = Debt Payments Planned for 2009 (as of December 31, 2008)	\$220,044	(B) = Debt Payments Planned for 2009 (as of December 31, 2008)	\$ 220,044
(A/B)= Cash Flow Coverage Ratio for 2009	0.34	(A'/B)= Debt Coverage Ratio for 2009	-0.06

20 Top 10% Dairy Farms, 2009			
(A) = Amount Available for Debt Service	\$301,917	(A') = Repayment Capacity	\$277,613
(B) = Debt Payments Planned for 2009	260,216	(B) = Debt Payments Planned for 2009	260,216
(A/B)= Cash Flow Coverage Ratio for 2009	1.16	(A'/B)= Debt Coverage Ratio for 2009	1.07

²²Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If excluded, the coverage ratios will represent repayment ability of the farm only.

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, 29.9 percent of the farms had a cash flow coverage ratio less than 1.0.

Table 18.

DEBT TO ASSET RATIO VS. CASH FLOW COVERAGE 204 New York Dairy Farms, 2009

Debt/Asset Ratio	Cash Flow Coverage Ratio (Farm & Nonfarm)			
	<.5	.5 to .99	1 to 1.49	>=1.5
	percent of farms			
<40%	22.1	7.8	8.3	14.7
40 to 60%	25.5	5.4	2.0	2.0
60% & over	9.3	2.9	0.0	0.0

Cropping Program Analysis

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

Table 19.

LAND RESOURCES AND CROP PRODUCTION 204 New York Dairy Farms, 2009

Item	Average 204 Farms			Average Top 10% Farms ²³		
	Owned	Rented	Total	Owned	Rented	Total
<u>Land</u>						
Tillable	484	481	965	609	480	1,089
Nontillable pasture	40	8	48	18	9	27
Other nontillable	141	5	146	119	0	119
Total	665	494	1,159	746	489	1,235
<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	196	483	3.4 tn DM	19	529	3.3 tn DM
Corn silage	179	397	18.7 tn	18	457	18.7 tn
			6.4 tn DM			6.5 tn DM
Other forage	20	69	1.9 tn DM	0	0	0.0 tn DM
Total forage	196	852	4.6 tn DM	19	964	4.7 tn DM
Corn grain	84	232	136 bu	9	198	144 bu
Oats	18	49	65 bu	0	0	0.0 bu
Wheat	13	82	64 bu	2	55	65 bu
Other crops	52	84		5	101	
Tillable pasture	30	89		0	0	
Idle	37	50		5	39	

²³Average of 20 farms with highest rates of return to all capital (without appreciation).

Crop acres and yields are the average for the farms reporting each crop. All but eight of the 204 farms produced hay or hay crop silage in 2009. Eighty-eight percent produced corn silage, 41 percent grew and harvested corn grain, and nine percent grew oats for grain. Although 30 farms used tillable pasture in 2009, only 26 of the 204 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 effectively the land resource is being used and how well total forage requirements are being met. These measures are the averages of farms that grow forages.

Table 20.

CROP MANAGEMENT FACTORS 204 New York Dairy Farms, 2009

Item	Average 204 Farms	Average Top 10% Farms ²⁴
Total tillable acres per cow	2.09	1.88
Total forage acres per cow	1.78	1.60
Harvested forage dry matter, tons per cow	8.20	7.54

²⁴Average of 20 farms with highest rates of return to all capital (without appreciation).

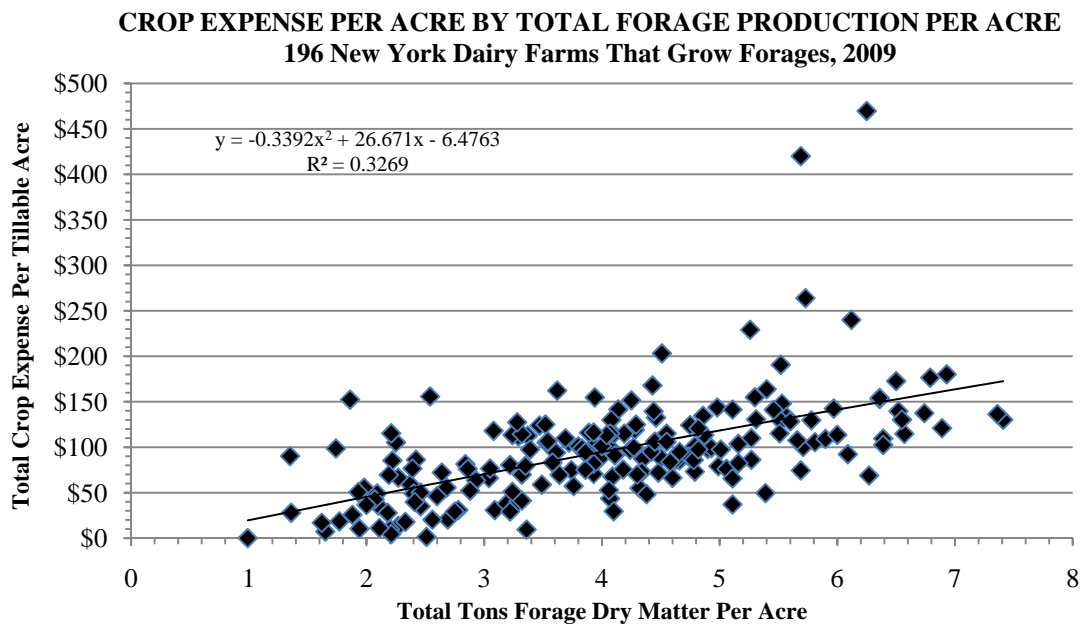
Crop input costs per tillable acre are reported in the table below. The chart below shows the relationship between total forage dry matter per acre and total crop input costs.

Table 21.

CROP RELATED ACCRUAL EXPENSES
New York Dairy Farms, 2009

Item	Average 196 Farms		Average Top 10% Farms ²⁶	
	Total Per Tillable Acre		Total Per Tillable Acre	
Number of farm reporting	196		19	
Average number of acres	1,001		1,134	
Fertilizer and lime expense	\$41.58		\$46.85	
Seeds & plants	32.49		37.16	
Spray and other crop expense	20.01		20.64	
Total	\$94.08		\$104.65	

²⁵Average of farms with highest rates of return to all capital (without appreciation).

Chart 5.

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
196 New York Dairy Farms That Grow Forages, 2009

Machinery Expense Item	Average 196 Farms		Average Top 10% Farms ²⁶	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$ 66,770	\$66.68	\$ 68,260	\$60.17
Machinery repairs & vehicle expense	85,017	84.90	97,093	85.59
Machine hire, rent & lease	39,993	39.94	39,062	34.44
Interest (5%)	37,482	37.43	44,912	39.59
Depreciation	89,208	89.08	89,334	78.75
Total	\$318,470	\$318.03	\$338,661	\$298.54

²⁶Average of 19 farms that grow forages with highest rates of return to all capital (without appreciation).

The charts below show the relationship between the stocking rate (forage and grazing acres per cow) and labor and management income per operator per cow and real estate investment per cow. Stocking rate is total tillable acres plus nontillable pasture acres less corn grain acres, all divided by the average number of cows.

Chart 6.

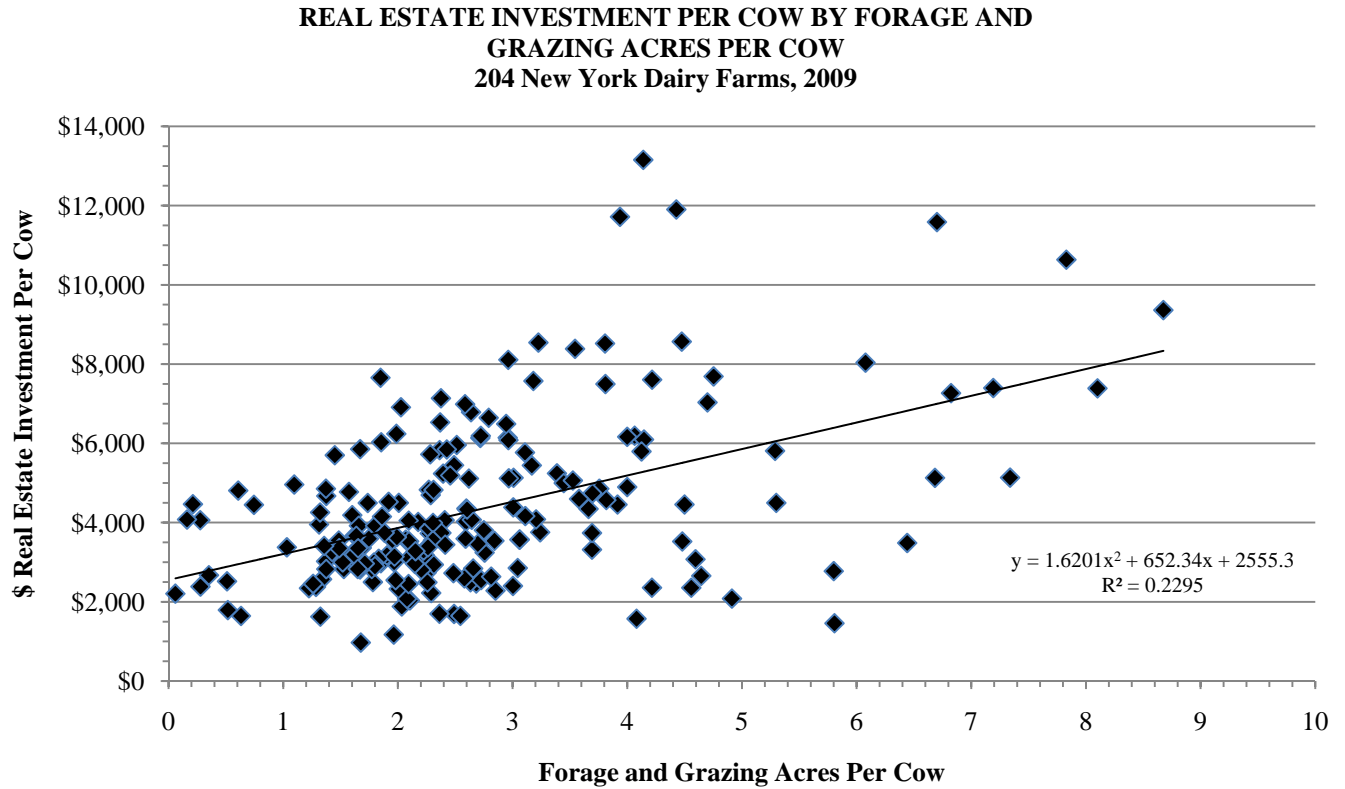
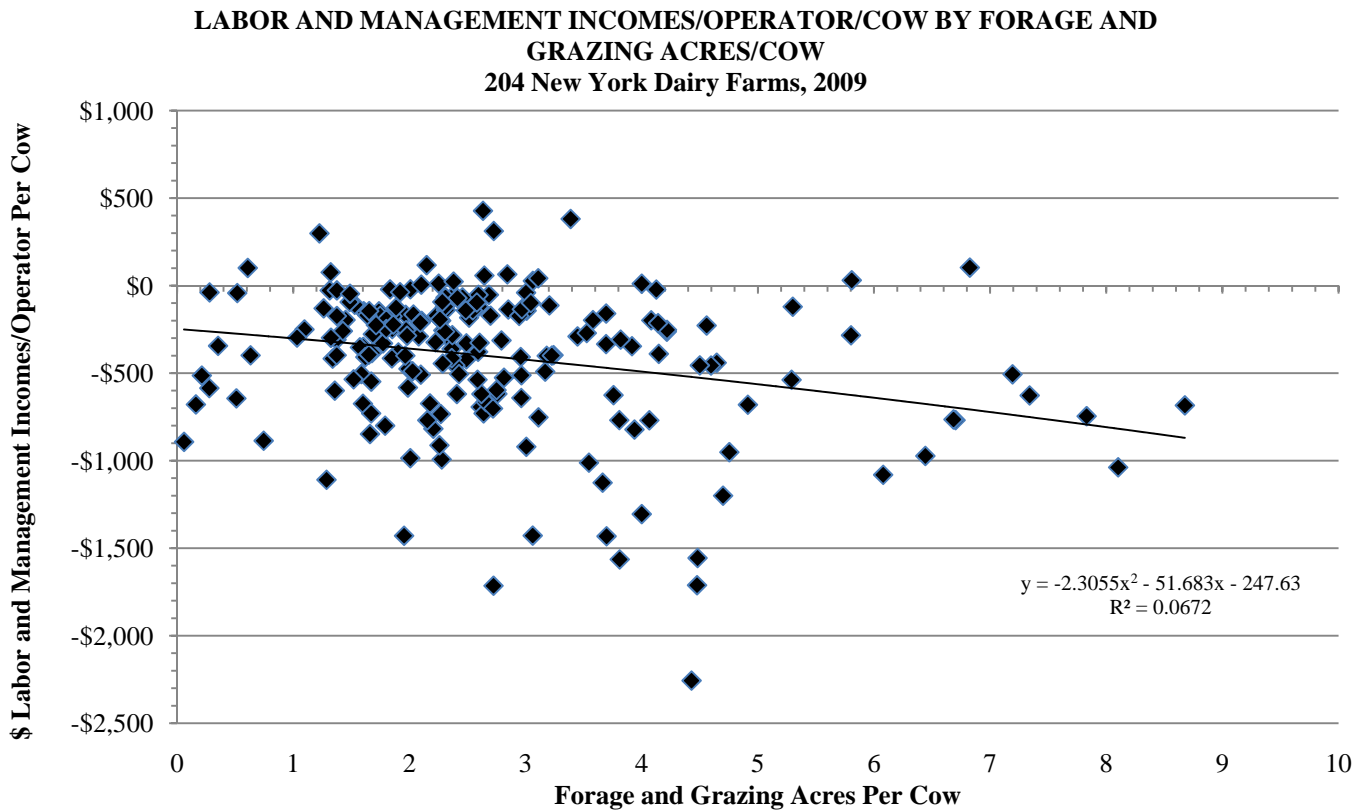


Chart 7.



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 change in inventory is included as an accrual farm receipt when calculating profitability.

Table 23.

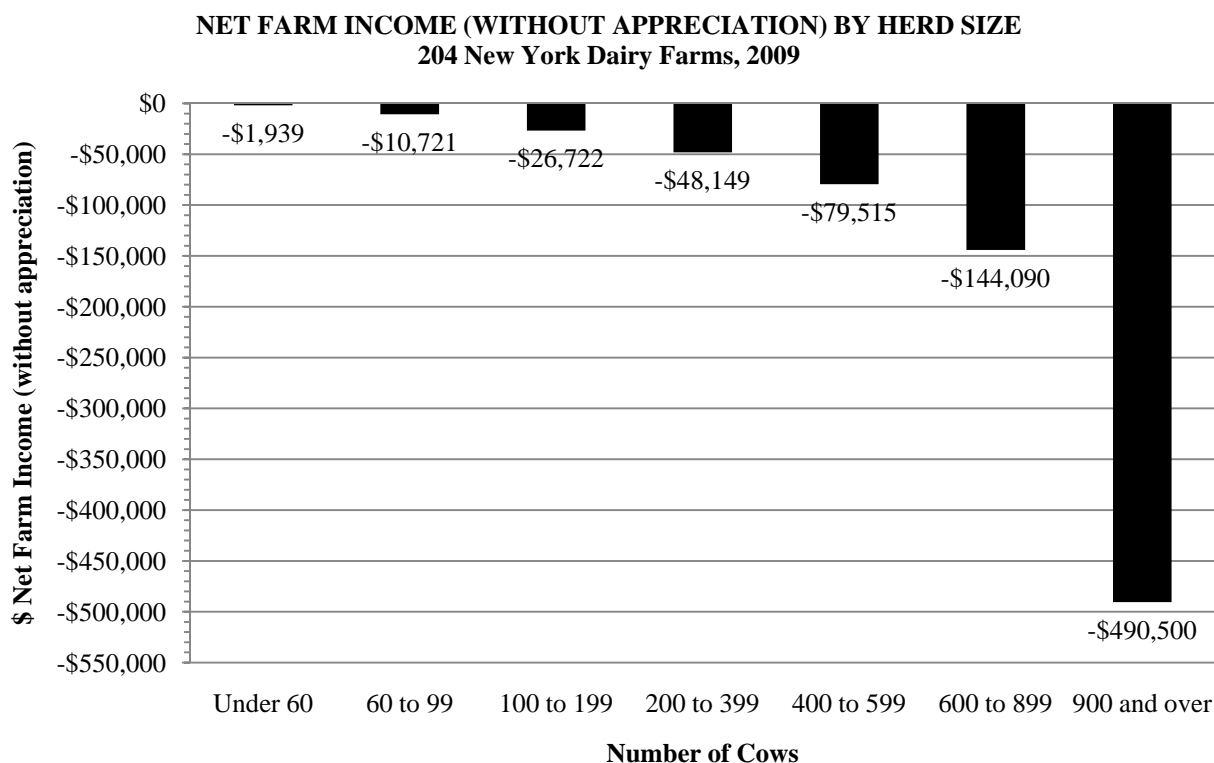
DAIRY HERD INVENTORY 204 New York Dairy Farms, 2009

Item	Dairy Cows		Heifers					
	No.	Value	Bred		Open		Calves	
	No.	Value	No.	Value	No.	Value	No.	Value
Beg. year (owned)	454	\$663,757	143	\$208,835	141	\$129,141	100	\$55,062
+ Change w/o apprec.		32,129		10,826		2,407		6,981
+ Appreciation		<u>-36,817</u>		<u>-13,124</u>		<u>-9,855</u>		<u>-6,405</u>
End year (owned)	477	\$659,069	151	\$206,537	144	\$121,692	113	\$55,637
End including leased	480							
Average number	469		391	(all age groups)				
<u>Average Top 10% Farms:²⁷</u>								
Beg. year (owned)	588	\$825,465	158	\$225,271	173	\$160,455	134	\$76,119
+ Change w/o apprec.		65,170		22,766		-8,247		21,611
+ Appreciation		<u>-56,968</u>		<u>-14,512</u>		<u>-7,488</u>		<u>-10,105</u>
End year (owned)	635	\$833,667	173	\$233,526	165	\$144,719	164	\$87,625
End including leased	642							
Average number	623		486	(all age groups)				

²⁷Average of 20 farms with highest rates of return to all capital (without appreciation).

Historically, there has been a strong relationship between farm size and net farm income on well-managed dairy farms. However, in 2009, there was a consistent decrease in net farm incomes as herd size increased (Chart 8). For more information on herd size comparisons, see pages 48-57.

Chart 8.



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. Milk components per cow in the table below are an average of 131 farms that provided the data.

Table 24.

**MILK PRODUCTION
204 New York Dairy Farms, 2009**

Item	Average 204 Farms	Average Top 10% Farms ²⁸
Total milk sold, pounds	11,355,494	15,258,735
Milk sold per cow, pounds	24,208	24,486
Butterfat per cow, pounds	896	900
Protein per cow, pounds	754	749
Total butterfat and protein per cow, pounds	1,650	1,649
Other solids per cow, pounds	1,423	1,407
Total components per cow, pounds	3,073	3,056

²⁸Average of 20 farms with highest rates of return to all capital (without appreciation).

Farms with higher rates of production tend to have higher net farm income. This is due to more cows per farm, not necessarily higher net farm income per cow. In 2009, farms with higher milk production per cow and more cows did not have higher labor and management incomes per operator.

Table 25.

**MILK SOLD PER COW AND FARM INCOME MEASURES
204 New York Dairy Farms, 2009**

Pounds of Milk Sold Per Cow	Number of Farms	Average Number of Cows	Net Farm Income without Appreciation	Net Farm Income Per Cow	Labor & Management Income/Operator
Under 16,000	21	133	\$-21,497	\$-162	\$-48,539
16,000 to 17,999	21	137	-23,046	-168	-40,765
18,000 to 19,999	18	167	-43,090	-258	-70,266
20,000 to 21,999	35	306	-97,122	-317	-122,591
22,000 to 23,999	36	466	-136,824	-294	-154,125
24,000 to 25,999	39	728	-202,789	-278	-173,999
26,000 & over	34	915	-233,134	-255	-260,203

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 9 and 10 on page 26. Each spot on each scatter diagram represents one of the 204 Farms.

Historically, net farm income per cow has increased as pounds of milk sold per cow increased. This relationship was not true in 2009 (see Table 27 and Charts 9 and 10). As pounds of milk sold per cow increased, total net farm income decreased as did net farm income per cow, with some fluctuation.

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. With a low R^2 , other factors, not measured, are important in explaining the relationship. The very low R^2 value for Charts 11 and 12 indicate that there are little statistical relationship in the 2009 data.

Chart 9.

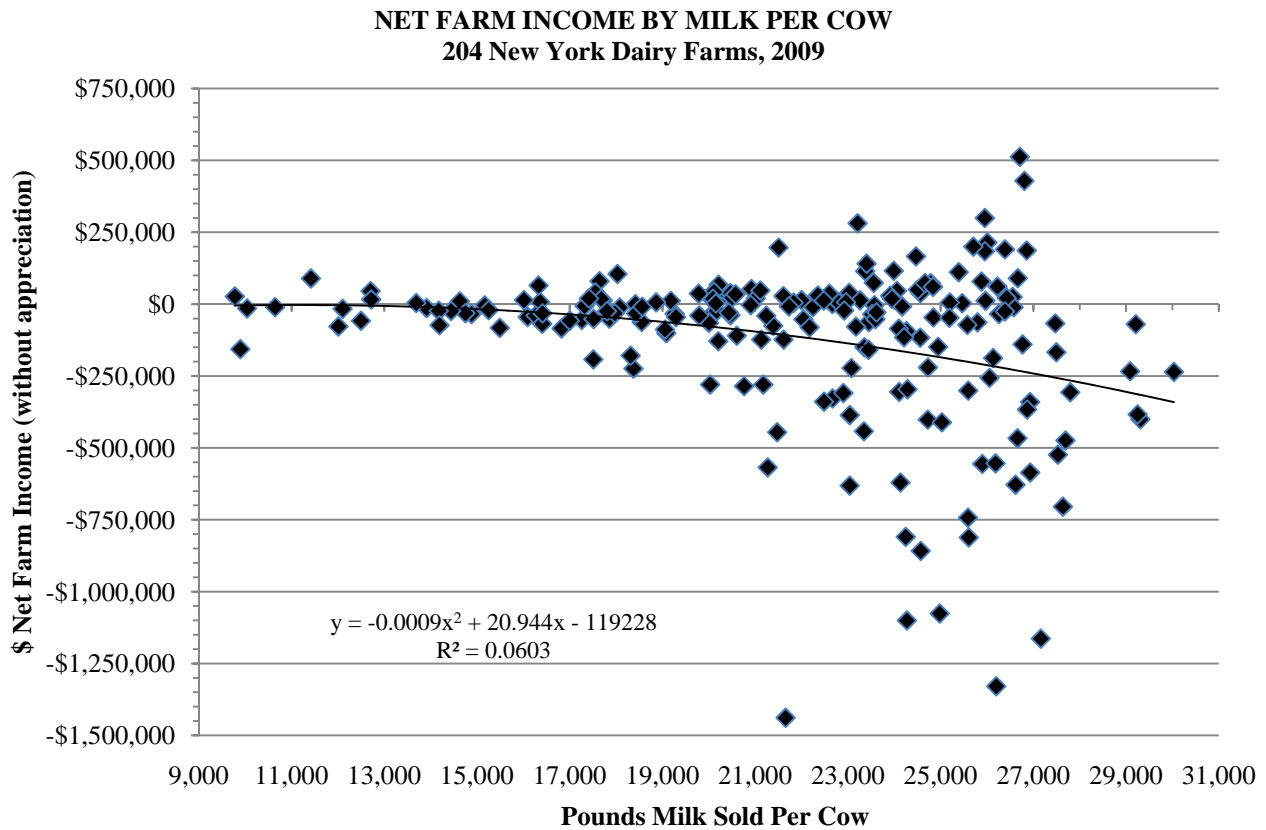
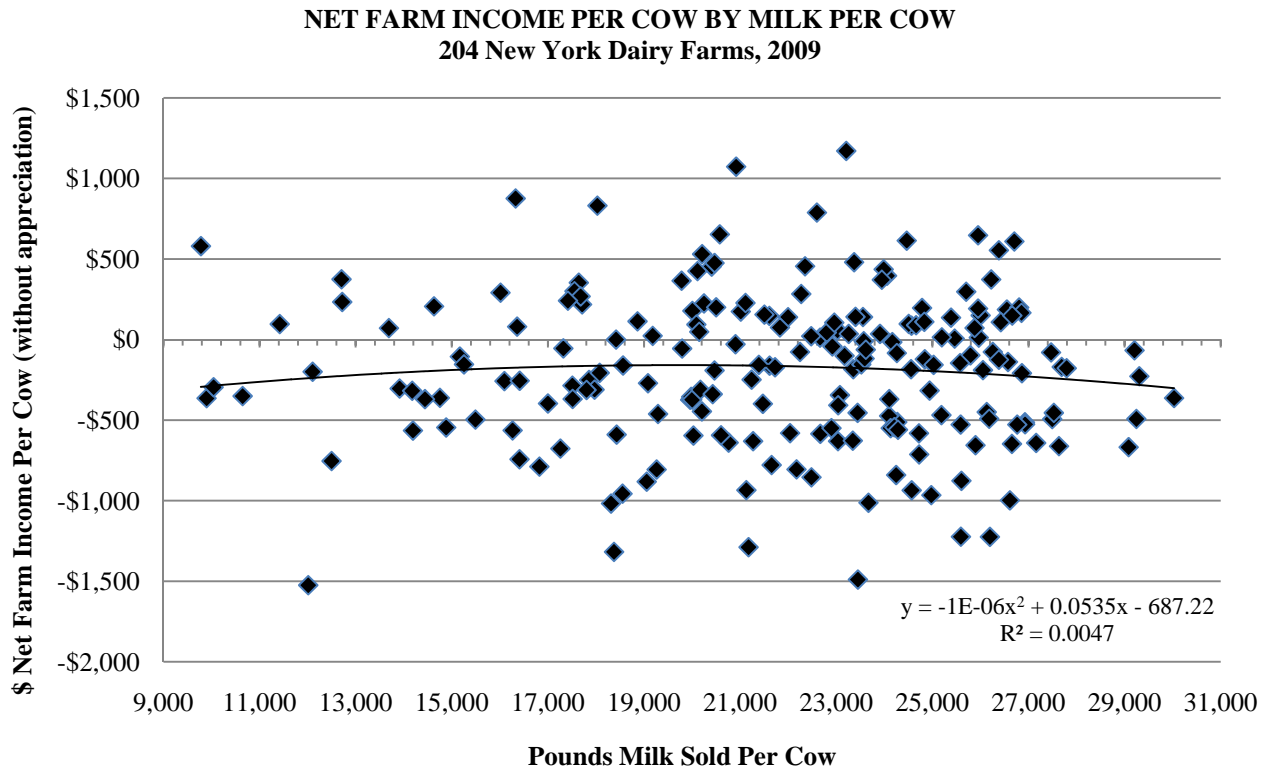


Chart 10.



Charts 11 and 12 show relationships between cull rates and milk production and net farm income per cow. For the 2009 year, supplementary information concerning dairy replacements was collected from 32 participating farms. The culling chart (Table 26) reports the decile range of reported factors for the different information that was collected. The average culling rate was 34 percent, sell rate was 27 percent, and death rate was 7 percent. The average number of cows sold for beef equaled 126, five cows were sold for dairy, and 31 cows died. Please refer to the glossary for definitions of the different terms and how the measures were calculated.

Chart 11.

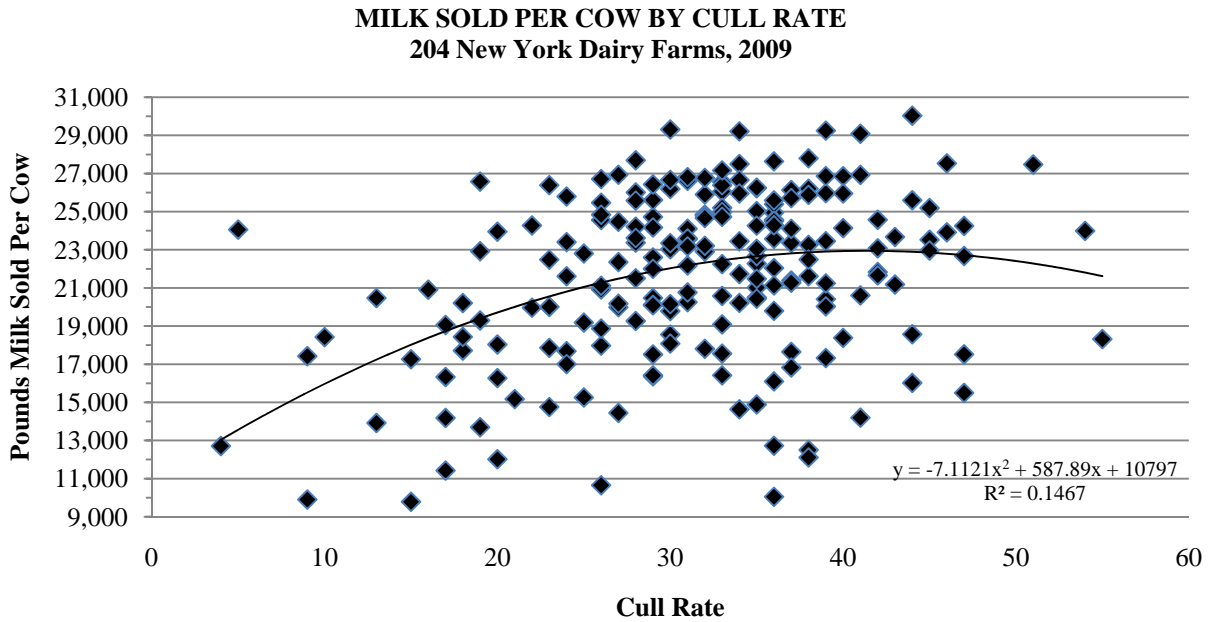


Chart 12.

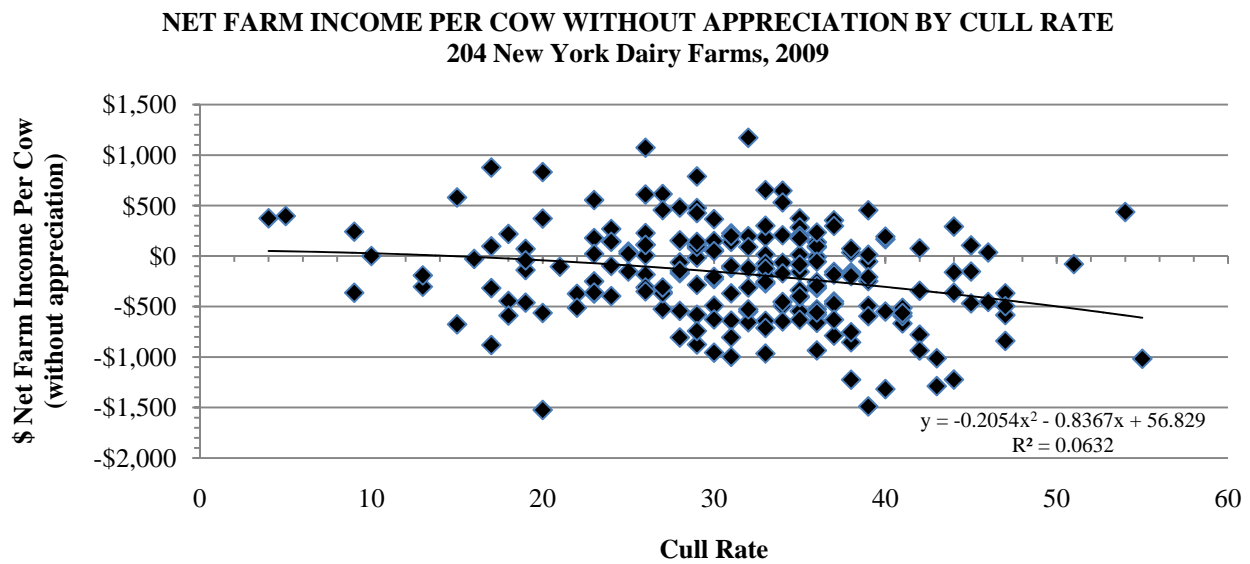


Table 26.

CULLING RATE AND DAIRY REPLACEMENT INFORMATION
New York Dairy Farms, 2009

Decile	Sell Rate	Death Rate	Cull Rate	Value of Cows Sold	Value of Animals Purchased	Percent of Replacements Purchased	Percent of Heifers Custom Raised
	-----204 Farms ²⁹ -----				\$/head (37 Farms)	----- 32 Farms ²⁹ -----	
1	11%	1%	15%	\$251	\$ 941	0%	0%
2	18	2	23	369	1,212	0	0
3	21	3	27	438	1,363	0	0
4	23	4	29	476	1,503	0	0
5	25	5	31	521	1,614	0	0
6	27	6	34	551	1,777	0	0
7	29	8	35	589	1,873	0.33	0
8	31	8	37	650	2,089	1.43	11
9	33	10	40	845	2,898	5.90	33
10	39	14	46	1,570	8,748	25.48	76

²⁹204 DFBS farms provided culling information. Thirty-two farms provided supplemental information on heifer acquisitions.

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. This assumes that costs equal revenues for nonmilk 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 costs of producing milk.

Table 27.

**COST OF PRODUCING MILK, WHOLE FARM METHOD
204 New York Dairy Farms, 2009**

Item	Average 204 Farms	Average Top 10% Farms ³⁰
Total Accrual Operating Expenses	\$1,805,243	\$2,219,211
Expansion Livestock, Accrual	+ 14,219	+ 11,771
1. Total Accrual Operating Expenses, Including Expansion Livestock	\$1,819,462	\$2,230,982
Total Accrual Receipts	\$1,839,167	\$2,552,288
Milk Sales, Accrual	<u>-1,576,244</u>	<u>- 2,145,164</u>
2. Total Accrual Nonmilk Receipts	<u>- \$262,923</u>	<u>-\$ 407,124</u>
3. Operating Cost of Producing Milk	\$1,556,539	\$1,823,857
Machinery Depreciation	+ 86,896	+ 88,990
Building Depreciation	+ 58,758	+ 66,488
Extraordinary Expense	<u>+ 870</u>	<u>+ 656</u>
4. Purchased Inputs Cost of Producing Milk	\$1,703,063	\$1,979,991
Family Labor Unpaid (\$2,500/month)	+ 5,168	+ 2,500
Real Interest on Equity Capital	+ 137,596	+ 179,594
Value of Operator's Labor & Management	<u>+ 89,950</u>	<u>+ 89,606</u>
5. Total Costs of Producing Milk	\$1,935,777	\$2,251,691
6. Costs Per Cwt.:		
Cwt. Milk Sold	113,555	152,587
Operating Cost Per Cwt.	\$13.71	\$11.95
Purchased Inputs Cost Per Cwt.	\$15.00	\$12.98
Total Cost Per Cwt.	\$17.05	\$14.76

³⁰Average of 20 farms with highest rates of return to all capital (without appreciation).

Costs of producing milk per hundredweight are presented for eight expenditure categories in Table 28. The whole farm method assumption that accrual nonmilk receipts represent nonmilk operating costs is used in computing net costs. A \$5,089 average decrease in crop inventories per farm, (\$0.04 per hundredweight of milk), is included in crop sales on the 204 farms. The top 10 percent farms had a \$26,416 average increase in crop inventories per farm (\$0.17 per hundredweight of milk).

Table 28.

**ITEMIZED COSTS OF PRODUCING MILK PER HUNDREDWEIGHT
BASED ON WHOLE FARM DATA
204 New York Dairy Farms, 2009**

Item	Average 204 Farms	Average Top 10% Farms ³²
Dairy grain and concentrate	\$5.18	\$4.79
Dairy roughage	0.27	0.41
Nondairy feed	0.00	0.00
Professional nutritional services	<u>0.00</u>	<u>0.00</u>
Total feed expense	\$5.45	\$5.20
Crop expense	0.96	0.76
- Crop sales and government receipts ³¹	<u>0.73</u>	<u>0.83</u>
Net Feed and Crop Expense	\$5.68	\$5.13
Hired labor	2.70	2.62
Operator's and family labor	<u>0.84</u>	<u>0.60</u>
Total Labor Expense	\$3.54	\$3.22
Machine repairs, fuel and hire	1.64	1.34
Machinery depreciation	0.77	0.58
- Gas tax refunds and custom work	<u>0.06</u>	<u>0.02</u>
Net Machinery Expense	\$2.35	\$1.90
Replacement and expansion cattle purchases	0.19	0.22
- Sales and inventory growth	<u>1.25</u>	<u>1.46</u>
Net Cattle Purchases	\$-1.06	\$-1.24
Milk marketing costs	0.88	0.86
All other livestock expense excluding purchases	<u>2.28</u>	<u>1.92</u>
Net Livestock Expense	\$3.16	\$2.78
Real estate repairs, rent and taxes	0.69	0.56
Building depreciation	<u>0.52</u>	<u>0.44</u>
Total Real Estate Expense	\$1.21	\$1.00
Interest paid	0.51	0.49
Interest on equity	<u>1.21</u>	<u>1.18</u>
Total Interest Expense	\$1.72	\$1.67
Other operating and miscellaneous expenses	0.74	0.61
- Miscellaneous income	<u>0.27</u>	<u>0.35</u>
Net Miscellaneous Expenses	<u>\$ 0.47</u>	<u>\$0.26</u>
Total Cost of Producing Milk	\$17.05	\$14.76
Purchased Inputs Cost	\$15.00	\$12.98
Total Operating Cost	\$13.71	\$11.95

³¹Non-crop related government payments may bias the results.

³²Average of 20 farms with highest rates of return to all capital (without appreciation).

Costs of producing milk per hundredweight are presented in the table below for 177 farms that participated both in 2008 and 2009. Costs of production decreased in nearly all expense categories except net cattle purchases and net miscellaneous expense when 2009 data were compared to 2008.

Table 29.

**ITEMIZED COSTS OF PRODUCING MILK PER HUNDREDWEIGHT
BASED ON WHOLE FARM DATA
Same 177 New York Dairy Farms, 2008 & 2009**

Item	2008	2009	Percent Change
Dairy grain and concentrate	\$5.82	\$5.18	-11.0%
Dairy roughage	0.34	0.27	-20.6%
Nondairy feed	0.00	0.00	
Professional nutritional services	<u>0.01</u>	<u>0.00</u>	
Total feed expense	\$6.17	\$5.45	-11.7%
Crop expense	1.06	0.94	
- Crop sales and government receipts ³³	<u>0.93</u>	<u>0.71</u>	
Net Feed and Crop Expense	\$6.30	\$5.68	-9.8%
Hired labor	2.80	2.70	
Operator's and family labor	<u>0.79</u>	<u>0.81</u>	
Total Labor Expense	\$3.59	\$3.51	-2.2%
Machine repairs, fuel and hire	2.13	1.60	
Machinery depreciation	0.84	0.76	
- Gas tax refunds and custom work	<u>0.04</u>	<u>0.05</u>	
Net Machinery Expense	\$2.93	\$2.31	-21.2%
Replacement and expansion cattle purchases	0.30	0.19	
- Sales and inventory growth	<u>1.44</u>	<u>1.27</u>	
Net Cattle Purchases	-\$1.14	-\$1.08	5.3%
Milk marketing costs	0.85	0.85	
All other livestock expense excluding purchases	<u>2.46</u>	<u>2.29</u>	
Net Livestock Expense	\$3.31	\$3.14	-5.1%
Real estate repairs, rent and taxes	0.80	0.68	
Building depreciation	<u>0.55</u>	<u>0.52</u>	
Total Real Estate Expense	\$1.35	\$1.20	-11.1%
Interest paid	0.53	0.50	
Interest on equity	<u>1.29</u>	<u>1.21</u>	
Total Interest Expense	\$1.82	\$1.71	-6.0%
Other operating and miscellaneous expenses	0.73	0.75	
- Miscellaneous income	<u>0.29</u>	<u>0.27</u>	
Net Miscellaneous Expenses	<u>\$0.44</u>	<u>\$0.48</u>	9.1%
Total Cost of Producing Milk	\$18.65	\$16.94	-9.2%
Purchased Inputs Cost	\$16.58	\$14.92	-10.0%
Total Operating Cost	\$15.19	\$13.63	-10.3%
Average Price Received for Milk	\$19.27	\$13.87	-28.0%

³³Non-crop related government payments may bias the results.

The three measures of the accrual cost of producing milk calculated on a per cow and per hundredweight basis are compared with accrual receipts from milk sales in Table 30.

Table 30.

**COST OF PRODUCING MILK, ACCRUAL RECEIPTS FROM DAIRY, AND PROFITABILITY
204 New York Dairy Farms, 2009**

Item	Average 204 Farms			Average Top 10% Farms ³⁴		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating Cost	\$1,556,539	\$3,318	\$13.71	\$1,823,857	\$2,927	\$11.95
Purchased Inputs Cost	1,703,064	3,631	15.00	1,979,991	3,177	12.98
Total Cost	1,935,777	4,127	17.05	2,251,691	3,613	14.76
<u>Accrual Receipts from Milk</u>						
Net Milk Receipts	\$1,576,244	\$3,360	\$13.88	\$2,145,164	\$3,442	\$14.06
	1,476,524	3,148	13.00	2,013,561	3,231	13.20
<u>Profitability</u>						
Net Farm Income without Appreciation	\$-126,820	\$-270	\$-1.12	\$165,173	\$265	\$1.08
Net Farm Income with Appreciation	\$-112,313	\$-239	\$-0.99	\$169,823	\$273	\$1.11

³⁴Average of 20 farms with highest rates of return to all capital (without appreciation).

The operating cost of producing milk on all 204 dairy farms averaged \$13.71 per hundredweight, leaving \$0.17 to cover depreciation, unpaid labor and operator resources.

The total cost of producing milk on the 204 dairy farms averaged \$17.05 per hundredweight, \$3.17 more than the average price received for milk sold from these farms during 2009. The imputed costs or charge for the operator's labor, management and equity capital averaged \$2.00 per hundredweight in 2009; however, the farm operator received \$-1.17 per hundredweight for these inputs. The 20 most profitable farms held their operating costs to \$11.95 per hundredweight and their total cost of producing milk averaged \$14.76 per hundredweight. This left a profit of \$-0.70 per hundredweight of milk sold.

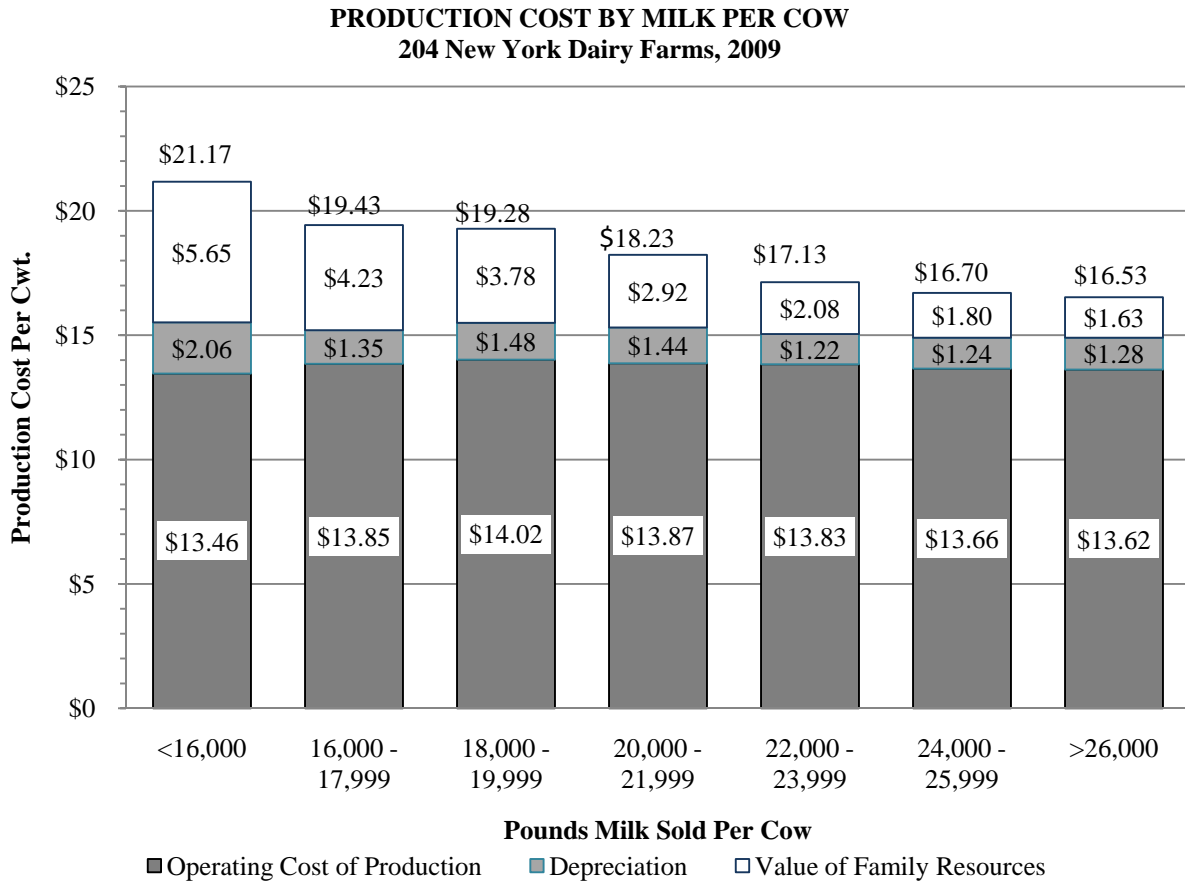
The strong relationship between milk output per cow and the total cost of producing milk is shown in Table 31 and Chart 13 on page 32. Farms selling less than 20,000 pounds of milk per cow had average total costs of production of \$19.96 per hundredweight while those selling 20,000 pounds and over averaged \$17.15 for a difference of \$2.81 per hundredweight.

Table 31.

**FARM COST OF PRODUCING MILK BY MILK SOLD PER COW
204 New York Dairy Farms, 2009**

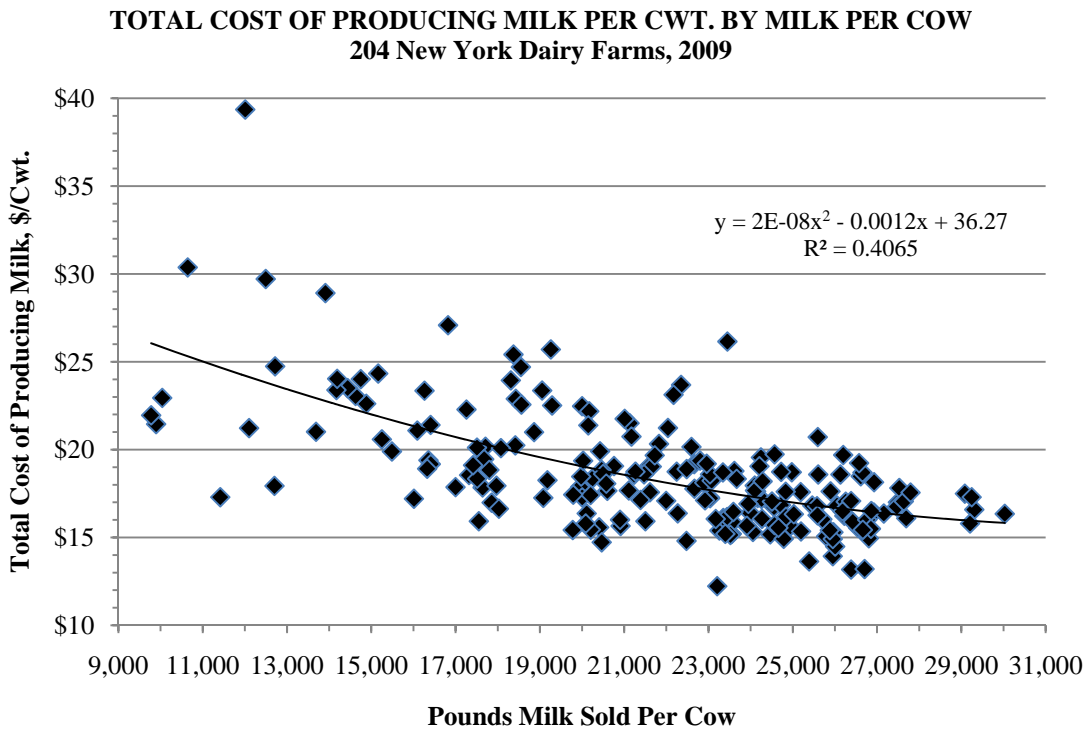
Pounds Milk Sold Per Cow	Costs per Hundredweight					Accrual Receipts From Milk Per Cwt.	Return Per Cwt. To Operator's Labor, Mgmt. & Capital
	Operating Costs		Costs of Producing Milk				
	Hired Labor	Dairy Grain & Concentrate	Total Operating	Purchased Inputs	Total		
Under 16,000	\$1.67	\$5.25	\$13.46	\$15.52	\$21.17	\$14.21	\$-2.20
16,000-17,999	1.96	5.17	13.85	15.20	19.43	14.23	-1.15
18,000-19,999	2.32	5.83	14.02	15.50	19.28	14.15	-1.68
20,000-21,999	2.86	5.06	13.87	15.31	18.23	13.81	-1.57
22,000-23,999	2.54	5.19	13.83	15.05	17.13	13.79	-1.30
24,000-25,999	2.69	5.29	13.66	14.90	16.70	13.79	-1.12
26,000 & over	2.83	5.08	13.62	14.90	16.53	13.97	-0.94

Chart 13.



The relationship between total cost of producing milk and milk sold per cow is diagrammed in Chart 14. It shows that as milk sold per cow increases, on the average, total cost of production generally decreases.

Chart 14.



Data in Table 32 and Chart 15 show that the average total cost of production generally declines as herd size increases. This is attributable to spreading fixed costs over more units of output.

Total operating costs are lowest at the under 60 herd size group and increase as herd size increases. Hiring labor cost generally increases with herd size, while purchased dairy grain and concentrate are not related to herd size.

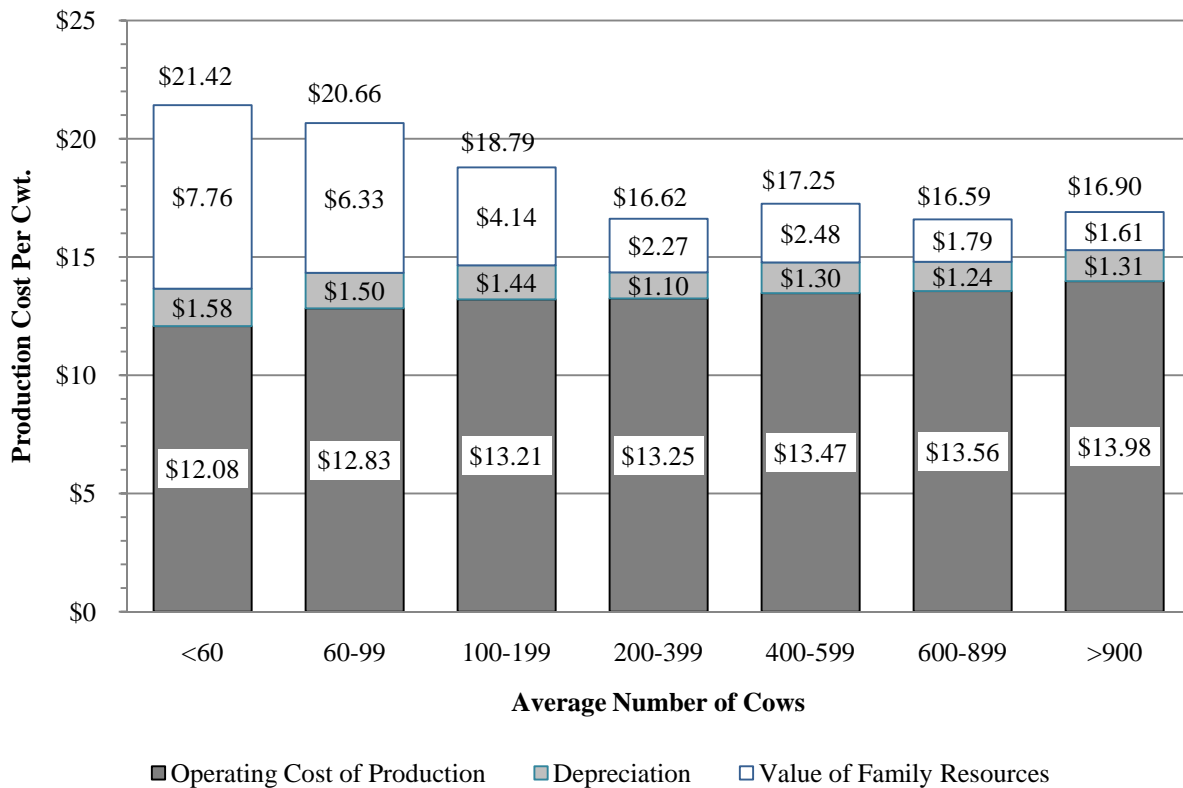
Table 32.

**FARM COST OF PRODUCING MILK BY HERD SIZE
204 New York Dairy Farms, 2009**

Number of Cows	Costs per Hundredweight					Accrual Receipts From Milk	Return Per Cwt. To Operator's Labor, Mgmt. & Capital
	Operating Costs		Costs of Producing Milk				
	Hired Labor	Dairy Grain & Concentrate	Total Operating	Purchased Inputs	Total		
Under 60	\$0.82	\$4.75	\$12.08	\$13.66	\$21.42	\$13.44	\$-1.36
60 to 99	0.88	5.35	12.83	14.33	20.66	13.57	-1.82
100 to 199	2.03	5.24	13.21	14.65	18.79	13.68	-1.18
200 to 399	2.35	5.27	13.25	14.35	16.62	13.65	-0.73
400 to 599	2.58	5.44	13.47	14.77	17.25	14.07	-0.72
600 to 899	2.76	5.20	13.56	14.80	16.59	14.00	-0.81
900 and over	2.90	5.11	13.98	15.29	16.90	13.87	-1.42

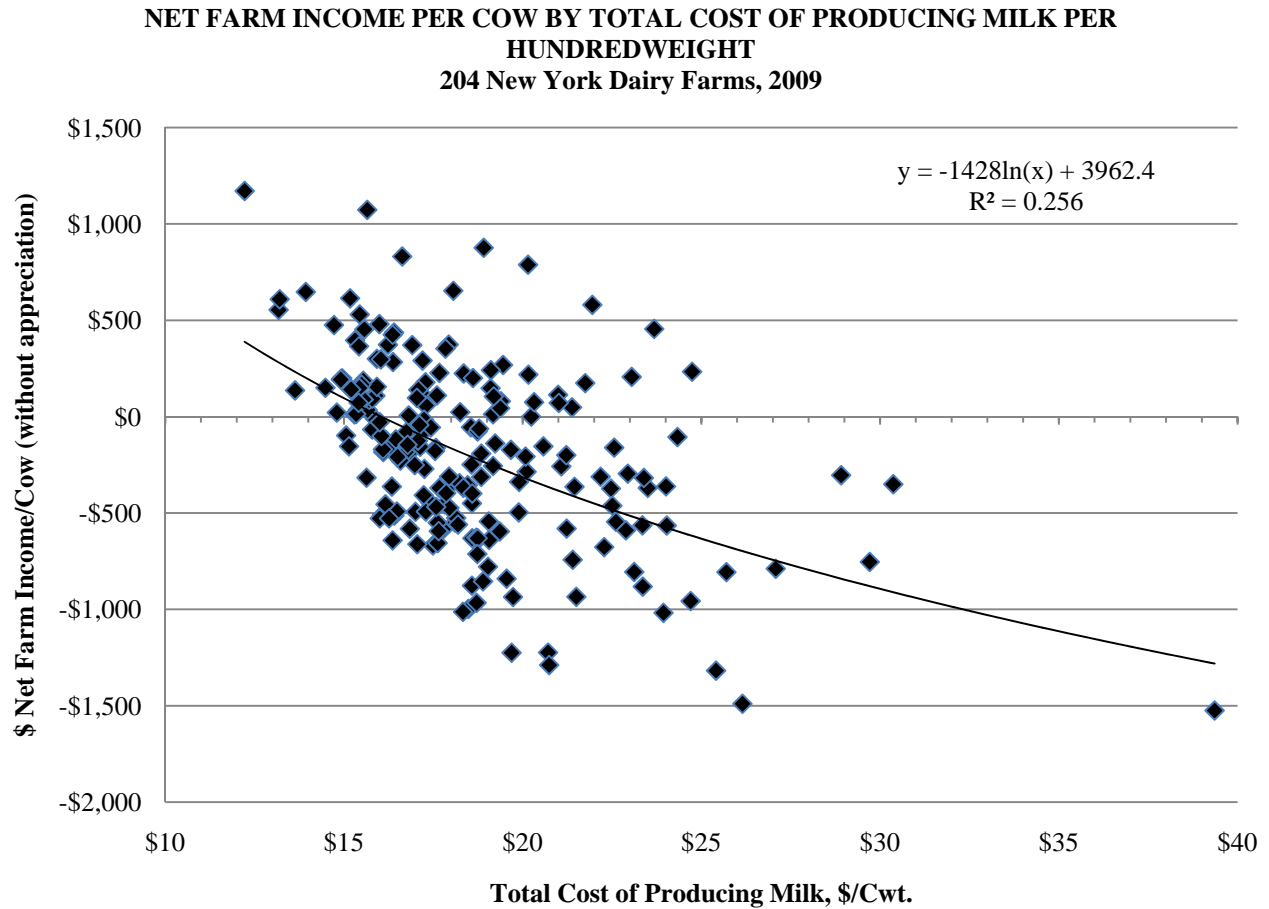
Chart 15.

**PRODUCTION COST BY HERD SIZE
204 New York Dairy Farms, 2009**



The importance of cost control and its impact on farm profitability are illustrated in Chart 16. 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 experienced negative net farm incomes per cow in 2009.

Chart 16.



Cost of Producing Milk (continued)

A ten-year comparison of the average costs and returns of producing milk per hundredweight is presented in Table 33 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 2000 through 2009. In 2009, the average operating cost of producing milk decreased 9.9 percent after increasing 8.5 percent from 2007 to 2008. The average return per hundredweight to operator labor, management, and capital was \$3.77 lower in 2009, 144 percent below 2008. In only three years during the last ten years has milk price exceeded the total cost of producing a hundredweight of milk. The years were 2001, 2004, and 2007.

Hired labor expense per hundredweight has increased consistently from 2000 to 2004, remained constant in 2005, decreased three percent in 2006, increased five percent in 2007, increased three percent in 2008, and decreased three percent in 2009. Hired labor expense was \$2.25 in 2000 and has risen to \$2.70 in 2009. Thus, even as pounds of milk sold per worker have increased from 865,325 in 2000 to 1,057,063 in 2009, labor expense per worker has also increased. Some of this effect is due to increasing farm size where a larger portion of the labor force is comprised of hired workers. Another effect is an increase in hired labor cost per worker as shown by a 23 percent increase in hired labor expense per hired worker equivalent from 2000 to 2009.

Purchased feed expense per hundredweight of milk can fluctuate greatly, as much as \$2.26 per hundredweight. At \$3.91 in 2000, it was at its lowest in the past ten years. In 2009, purchased feed expense was at its highest in the past ten years at \$6.17, due mostly to demand for corn for ethanol and the U.S. dollar foreign exchange rate. Purchased feed expense decreased 12 percent in 2009 to \$5.45 per hundredweight.

Interest paid on debt per hundredweight of milk sold has fluctuated over this period. In 2000, interest expense was \$0.95 per hundredweight. In 2009, interest expense was at a ten-year low of \$0.51 per hundredweight. Property taxes per hundredweight of milk were fairly constant during this ten-year period. Property taxes were \$0.20 per hundredweight in 2000 and \$0.22 in 2009. This is due to productivity increases and more of the land resources being rented, rather than owned, and fewer acres per cow.

A ten-year comparison of selected average business factors for all specialized DFBS farms is presented in Table 34 on page 37. The reader is reminded that the same farms are not in the survey each year. Average cow numbers are up 91 percent, tillable acres have increased 70 percent, and milk sold per farm has jumped 115 percent since 2000. Capital investment per cow has increased 39 percent over the last ten years. Labor and management income per operator decreased 294 percent in 2009 compared to 2008, farm net worth decreased 0.02 percent, and percent equity declined 9 percent in 2009 compared to 2008.

Hay crop yields were 3.3 tons dry matter per acre in 2000 and 3.4 tons dry matter per acre in 2009. Corn silage yields, as fed, have varied more widely and were at a ten-year high of 19.9 tons per acre in 2008, but decreased to 18.7 tons per acre in 2009. As yields decreased, fertilizer and lime expense decreased \$7 per tillable acre, from \$49 to \$42 per acre. Pounds of milk sold per cow increased by 12.5 percent, from 21,516 pounds in 2000 to 24,208 pounds in 2009.

Average number of workers per farm increased by 4.63 and operators/managers per farm were stable. Cows per worker equivalent increased from 40 in 2000 to 44 in 2009, but labor cost per cow increased from \$674 to \$794 over the same time period.

The asset turnover ratio ranged from a low of 0.44 in 2009 to a high of 0.67 in 2007. Total accrual receipts as a proportion of total farm assets equals asset turnover ratio. Percent equity was 57 percent in 2000, was relatively constant over the next six years, increased to 68 percent in 2007 and 2008, then decreased to 62 percent in 2009.

Table 33.

TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 2000 to 2009

Item	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
<u>Operating Expenses</u>										
Hired labor	\$2.25	\$2.41	\$2.44	\$2.51	\$2.67	\$2.66	\$2.58	\$2.70	\$2.79	\$2.70
Purchased feed	3.91	4.25	4.10	4.29	4.88	4.37	4.30	5.21	6.17	5.45
Machinery repair, vehicle expense & rent	1.06	1.21	1.01	.91	1.09	1.07	1.04	1.27	1.24	1.07
Fuel, oil & grease	.34	.32	.28	.33	.41	.53	.58	.67	.91	.57
Replacement livestock	.23	.20	.16	.15	.16	.11	.07	.07	.08	.06
Breeding fees	.17	.19	.21	.19	.21	.22	.23	.24	.26	.21
Veterinary & medicine	.51	.54	.56	.56	.59	.62	.65	.65	.68	.63
Milk marketing	.69	.63	.65	.69	.72	.76	.80	.80	.85	.88
Other dairy expenses	1.16	1.26	1.25	1.30	1.27	1.32	1.29	1.41	1.52	1.44
Fertilizer & lime	.29	.33	.27	.26	.30	.34	.31	.40	.47	.41
Seeds & plants	.19	.20	.20	.20	.24	.22	.23	.28	.33	.35
Spray & other crop expense	.22	.25	.22	.19	.20	.19	.19	.25	.26	.20
Land, building & fence repair	.21	.26	.19	.14	.21	.25	.22	.32	.34	.23
Taxes	.20	.21	.20	.21	.22	.23	.21	.23	.21	.22
Insurance	.16	.14	.16	.15	.16	.16	.17	.19	.18	.17
Utilities (farm share)	.32	.33	.34	.34	.36	.39	.41	.44	.43	.38
Interest paid	.95	.82	.61	.56	.57	.65	.78	.83	.54	.51
Misc. (including rent)	.45	.42	.44	.40	.43	.37	.45	.49	.49	.44
Total Operating Expenses	\$13.31	\$13.98	\$13.27	\$13.39	\$14.67	\$14.54	\$14.51	\$16.46	\$17.77	\$15.90
Less: Nonmilk cash receipts	1.83	1.49	1.91	1.57	1.70	1.96	1.94	1.75	1.57	1.89
Increase in grown feed & supplies	.11	.10	.12	.27	.17	.12	.22	.39	.66	-.04
Increase in livestock	.06	.52	.23	.09	.22	.21	.27	.30	.33	.34
OPERATING COST OF MILK PRODUCTION	\$11.31	\$11.87	\$11.01	\$11.46	\$12.58	\$12.25	\$12.08	\$14.02	\$15.21	\$13.71
<u>Overhead Expenses</u>										
Depreciation: machinery & buildings	\$1.20	\$1.30	\$1.39	\$1.23	\$1.32	\$1.32	\$1.26	\$1.32	\$1.38	\$1.28
Unpaid labor	.10	.10	.08	.10	.07	.06	.07	.07	.04	.05
Operator(s) labor ³⁵	.79	.74	.74	.70	.67	.61	.63	.65	.58	.54
Operator(s) management (5% of cash receipts)	.76	.87	.75	.73	.90	.90	.79	1.07	1.10	.80
Interest on farm equity capital (5%)	.88	.91	.89	.85	.92	1.02	1.06	1.20	1.29	1.21
Total Overhead Expenses	\$3.73	\$3.92	\$3.85	\$3.61	\$3.88	\$3.91	\$3.81	\$4.31	\$4.39	\$3.88
TOTAL COST OF MILK PRODUCTION	\$15.04	\$15.79	\$14.86	\$15.07	\$16.46	\$16.16	\$15.89	\$18.33	\$19.60	\$17.59
AVERAGE FARM PRICE OF MILK	\$13.38	\$15.98	\$12.98	\$13.24	\$16.64	\$15.98	\$13.85	\$20.34	\$19.24	\$13.88
Return per cwt. to operator labor, capital & mgmt.	\$0.77	\$2.71	\$0.50	\$0.45	\$2.67	\$2.35	\$0.44	\$4.93	\$2.61	\$-1.16
Rate of return on farm equity capital	-4.4%	6.0%	-5.6%	-5.7%	6.0%	4.1%	-4.6%	13.4%	3.6%	-10.3%

³⁵2000 = \$1,900/month, 2001 = \$2,100/month, 2002 = \$2,000/month, 2003 through 2005 = \$2,200/month, 2006 = \$2,300/month, 2007 = \$2,400/month, and 2008 and 2009 = \$2,500/month of operator labor.

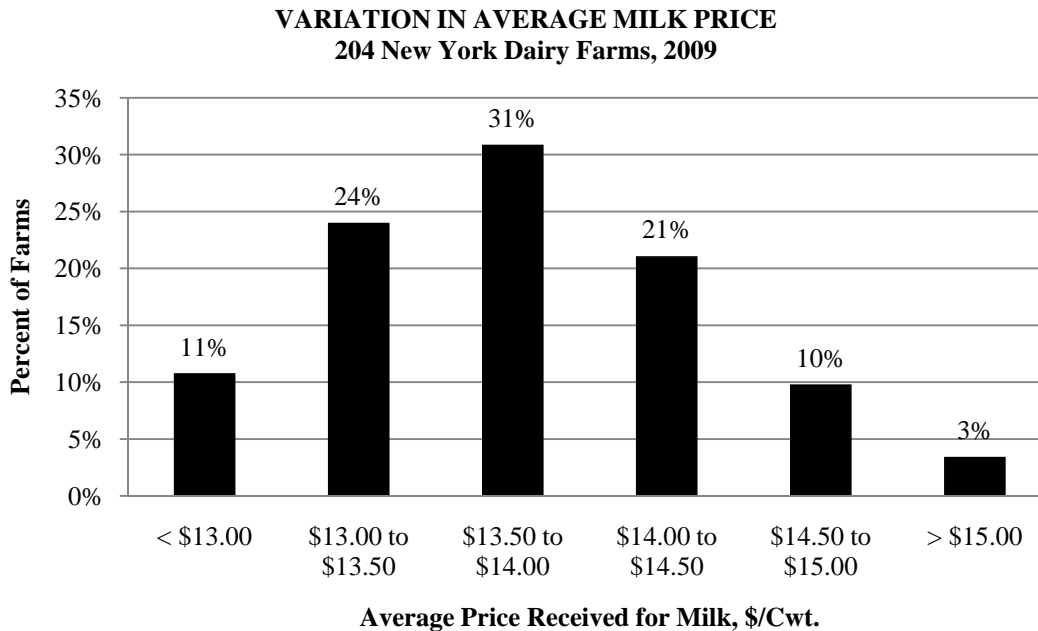
Table 34.

TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 2000 to 2009

Item	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Number of farms	294	228	219	201	200	225	240	250	224	204
<u>Cropping Program</u>										
Total tillable acres	566	618	660	659	701	729	730	758	883	965
Tillable acres rented	262	290	337	323	345	365	360	385	446	482
Hay crop acres	274	302	323	321	339	361	366	364	421	464
Corn silage acres	192	210	232	233	245	246	249	258	297	348
Hay crop, tons DM/acre	3.3	2.8	3.1	3.2	3.5	3.2	3.2	3.0	3.5	3.4
Corn silage, tons/acre	15.1	16.5	15.4	17.2	17.7	18.8	18.4	18.9	19.9	18.7
Fertilizer & lime exp./tillable acre	\$27	\$32	\$27	\$28	\$31	\$33	\$30	\$40	\$49	\$42
Machinery cost/cow	\$513	\$554	\$520	\$497	\$565	\$624	\$618	\$708	\$800	\$660
<u>Dairy Analysis</u>										
Number of cows	246	277	297	314	334	340	350	358	414	469
Number of heifers	186	207	226	240	260	270	283	289	348	391
Milk sold, cwt.	52,871	60,290	66,177	70,105	73,767	78,250	80,862	82,315	99,884	113,555
Milk sold/cow, lbs.	21,516	21,762	22,312	22,302	22,070	22,998	23,083	22,983	24,115	24,208
Purchased dairy feed/cwt. milk	\$3.91	\$4.25	\$4.10	\$4.27	\$4.86	\$4.37	\$4.29	\$5.20	\$6.16	\$5.45
Purchased grain & concentrate as % of milk receipts	27%	25%	30%	30%	27%	26%	29%	24%	31%	38%
Purchased feed & crop exp/cwt.milk	\$4.61	\$5.03	\$4.79	\$4.92	\$5.60	\$5.12	\$5.02	\$6.13	\$7.23	\$6.41
<u>Capital Efficiency</u>										
Farm capital/cow	\$6,535	\$6,755	\$6,794	\$6,748	\$7,010	\$7,508	\$7,762	\$8,426	\$9,145	\$9,060
Real estate/cow	\$2,615	\$2,713	\$2,612	\$2,722	\$2,809	\$2,950	\$3,030	\$3,356	\$3,606	\$3,713
Machinery investment/cow	\$1,225	\$1,222	\$1,261	\$1,208	\$1,226	\$1,314	\$1,384	\$1,448	\$1,535	\$1,553
Asset turnover ratio	0.54	0.63	0.53	0.54	0.64	0.60	0.52	0.67	0.59	0.44
<u>Labor Efficiency</u>										
Worker equivalent	6.11	6.72	7.21	7.50	7.97	8.18	8.19	8.40	9.75	10.74
Operator/manager equivalent	1.83	1.94	1.82	1.86	1.64	1.60	1.63	1.62	1.72	1.83
Milk sold/worker, lbs.	865,325	897,167	917,854	934,733	925,553	956,698	987,550	980,234	1,024,799	1,057,063
Cows/worker	40	41	41	42	42	42	43	43	42	44
Labor cost/cow	\$674	\$706	\$725	\$738	\$752	\$765	\$757	\$784	\$823	\$794
Hired labor exp./hired worker equiv.	\$29,309	\$31,448	\$31,755	\$32,659	\$33,311	\$33,539	\$34,071	\$34,924	\$36,312	\$35,908
<u>Profitability & Financial Analysis</u>										
Labor & mgmt. income/operator	\$-2,908	\$45,479	\$-14,243	\$-15,360	\$78,061	\$64,745	\$-31,269	\$189,019	\$75,945	\$-147,313
Farm net worth, end year	\$942,881	\$1,181,055	\$1,173,836	\$1,207,964	\$1,466,674	\$1,690,427	\$1,736,505	\$2,200,655	\$2,640,168	\$2,639,640
Percent equity	57%	60%	57%	56%	60%	63%	62%	68%	68%	62%

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 204 farms was \$13.88 but there was considerable variation among the individual farms. The variation in average price received and the distribution of farms around the mean are shown below.

Chart 17.



Fifty-two percent of the farms received from \$13.50 to \$14.50 per hundredweight of milk sold. Thirteen percent of the farms received \$14.50 or more and 35 percent received less than \$13.50 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 milk components are two variables that affect milk price. More milk price analysis can be found on pages 40 and 41.

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 35.

**DAIRY RELATED ACCRUAL EXPENSES
204 New York Dairy Farms, 2009**

Item	Average 204 Farms		Average Top 10% Farms ³⁶	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$1,254	\$5.18	\$1,173	\$4.79
Purchased dairy roughage	64	.27	102	.41
Total Purchased Dairy Feed	\$1,318	\$5.45	\$1,275	\$5.21
Purchased grain & concentrate as % of milk receipts		38%		34%
Purchased feed & crop expense	\$1,552	\$6.41	\$1,463	\$5.98
Purchased feed & crop expense as % of milk receipts		48%		44%
Breeding	\$50	\$.21	\$44	\$.18
Veterinary & medicine	152	.63	129	.53
Milk marketing	213	.88	211	.86
Bedding	81	.33	49	.20
Milking Supplies	93	.38	84	.34
Cattle lease	3	.01	7	.03
Custom boarding	87	.36	84	.34
bST expense	56	.23	52	.21
Other livestock expense	30	.13	22	.09

³⁶Average of 20 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 feed cost for one cow and associated replacements being raised (averaged 0.83 animals in 2009).

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 of producing feed crops 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.

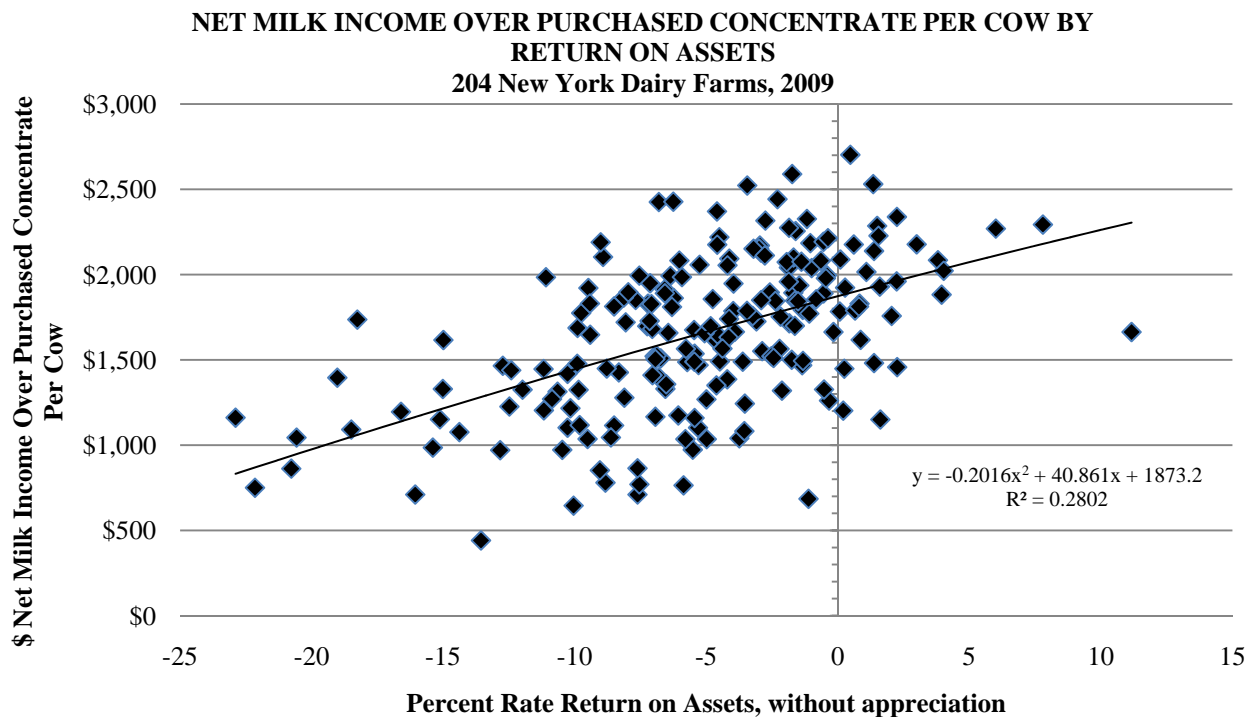
Cost control has an important effect on farm profitability. The relationship between purchased feed and crop expense per hundredweight of milk and farm profitability is shown below. On average, farms with feed and crop expenses exceeding \$5.50 reported below average profits in 2009. Net milk income over purchased concentrate per cow shows a similar relationship when compared to rate of return on assets without appreciation (Chart 18).

Table 36.

**PURCHASED FEED AND CROP EXPENSE PER HUNDREDWEIGHT
OF MILK AND FARM INCOME MEASURES
204 New York Dairy Farms, 2009**

Feed & Crop Expense Per Cwt. of Milk	Number of Farms	Number of Cows	Forage Dry Matter Harvested Per Cow	Pounds Milk Per Cow	Net Farm Income Without Appreciation	Labor & Management Income Per Operator	Labor & Management Per Operator Per Cow
\$7.50 or more	37	293	8.3	21,773	\$-145,133	\$-124,801	\$-426
7.00 to 7.49	30	457	7.8	23,312	-130,730	-160,021	-350
6.50 to 6.99	36	464	8.4	24,015	-149,416	-134,860	-291
6.00 to 6.49	36	576	8.5	24,823	-204,204	-209,459	-364
5.50 to 6.00	31	700	7.8	25,479	-153,505	-203,818	-291
Less than 5.50	34	354	8.6	24,341	26,750	-59,566	-168

Chart 18.



Milk Income and Marketing Expense Breakdown

Starting January 1st, 2000, the Northeast switched to multiple component pricing, which changed the format of the milk check and how farmers received payment for their milk. To examine the breakdown of the gross milk income and the marketing expenses, 131 farms filled out a detailed form including all the different sources of income for milk sales and the milk marketing expenses on an accrual basis. This information is reported in the following two tables. The tables are divided into six different sections, each representing a different area of income or expense. The cumulative total for these six sections is the net price received on farms. MILC payments are not included as a milk receipt, but as a government receipt.

Table 37 reports the averages for the 131 farms providing the data. Table 38 on page 41 contains the quintile averages for each of the individual lines of the report. This table is in a farm business chart format with each item sorted independently and ranked by fifths. Numbers for the different sections will not add to the totals for that quintile or to the net price received because each item is sorted independently. This table shows the range of income and expenses received by farms for all the different sections. More milk price information was presented on page 38.

Table 37.

AVERAGE³⁷ MILK INCOME AND MARKETING REPORT
131 New York Dairy Farms, 2009

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
BASE FARM PRICE					
Butterfat	535,188	3.65%	\$1.26	\$675,235	\$4.61
Protein	450,178	3.07%	\$2.21	\$996,439	\$6.80
Solids	849,356	5.80%	\$0.06	\$51,346	<u>\$0.35</u>
Total Component Contribution					<u>\$11.76</u>
PPD	14,650,879			\$119,125	<u>\$0.81</u>
Base Farm Price					<u>\$12.57</u>
Premiums					
Quality				\$37,434	\$0.26
Volume				\$38,745	\$0.26
Market Premiums				\$85,162	<u>\$0.58</u>
Total Premiums					<u>\$1.10</u>
BASE FARM PRICE + PREMIUM					
<hr style="border-top: 1px dashed black;"/>					
Deductions					
Promotion				\$22,519	\$0.15
Hauling & Stop Charges.				\$88,553	\$0.60
Market Fees & Coop Dues				\$19,565	\$0.14
Total Deductions					<u>\$0.89</u>
BASE FARM PRICE + PREMIUMS – DEDUCTIONS					
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				\$4,949	<u>\$0.03</u>
Total Marketing Income					<u>\$0.03</u>
Patronage Dividends				\$27,341	<u>\$0.19</u>
NET PRICE RECEIVED ON FARM, ALL SOURCES					
PPD – Hauling, per cwt.					\$0.21
PPD – Hauling + Market Premiums, per cwt.					\$0.79
Net Marketing Value, per cwt. (PPD + Total Premiums - Total Deductions)					<u>\$1.02</u>

³⁷Each calculation of an average is independent of all others. Therefore, math operations on the detail will not result in the totals. However, detail in the “\$/Cwt of Milk” column will result in the totals. Average herd size for these 131 farms is 597 cows.

Table 38.

MILK PRICE INFORMATION BY QUINTILE³⁸
(Each Category Sorted Independently)
131 New York Dairy Farms, 2009

	Lowest Quintile	←—————→	Highest Quintile		
Butterfat, %	3.50	3.63	3.71	3.80	4.03
Protein, %	2.95	3.03	3.07	3.12	3.27
Other Solids, %	5.59	5.68	5.70	5.73	6.01
Butterfat, \$ per Cwt.	4.40	4.57	4.66	4.78	5.12
Protein, \$ per Cwt.	6.48	6.69	6.80	6.92	7.23
Other solids, \$ per Cwt.	0.28	0.34	0.35	0.36	0.42
Total Component Value per Cwt.	\$11.35	\$11.63	\$11.79	\$11.99	\$12.62
PPD, \$ per Cwt.	0.54	0.68	0.78	0.91	1.28
Base Farm Price per Cwt.	\$12.06	\$12.40	\$12.60	\$12.90	\$13.57
Quality, \$ per Cwt.	0.04	0.15	0.22	0.30	0.46
Volume, \$ per Cwt.	0.00	0.03	0.13	0.30	0.59
Market premium, \$ per Cwt.	-0.03	0.15	0.35	0.59	1.08
Total Premium, \$ per Cwt.	0.30	0.61	0.83	1.10	1.47
Base Farm Price + Premiums per Cwt.	\$12.70	\$13.20	\$13.54	\$13.87	\$14.54
Promotion, \$ per Cwt.	0.15	0.15	0.15	0.15	0.15
Hauling, \$ per Cwt.	0.26	0.43	0.57	0.71	1.04
Market fees & coop dues per Cwt.	0.03	0.10	0.12	0.16	0.23
Total Marketing Expenses per Cwt.	\$0.51	\$0.73	\$0.85	\$1.01	\$1.32
Base + Premiums – Deductions per Cwt.	\$11.92	\$12.40	\$12.70	\$12.93	\$13.49
Futures contract, forward contracting, \$ per Cwt.	0.00	0.00	0.00	0.00	0.17
Total Marketing Income, \$ per Cwt.	\$0.00	\$0.00	\$0.00	\$0.00	\$0.17
Patronage Dividends, \$ per Cwt.	\$0.00	\$0.00	\$0.00	\$0.08	\$1.10
Net Price Received From All Sources, \$ per Cwt.	\$12.11	\$12.63	\$12.90	\$13.17	\$13.94
PPD - Hauling, \$ per cwt.	-0.01	0.11	0.20	0.32	0.56
PPD - Hauling + Market Premiums, \$ per cwt.	0.07	0.40	0.63	0.86	1.33
Net Marketing Value, \$ per cwt. (PPD + Total Premiums - Total Deductions)	0.18	0.60	0.82	1.04	1.44

³⁸Data for each category are calculated independently of all others. Therefore, summation of individual categories will not equal total categories.

Capital and Labor Efficiency Analysis

Capital efficiency factors show how intensively capital is being used in the farm business. Capital efficiency can be measured as investment per worker and per cow. It can also be measured in terms of the relationship to farm receipts.

Table 39.

CAPITAL EFFICIENCY				
204 New York Dairy Farms, 2009				
Item (Average for Year)	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	\$395,709	\$9,060	\$4,403	\$8,787
Real estate		\$3,713		\$3,601
Machinery & equipment	\$67,808	\$1,553	\$754	
<u>Ratios</u>				
Asset turnover	Operating Expense	Interest Expense		Depreciation Expense
0.44	0.96	0.03		0.08
<u>Average Top 10% Farms:³⁹</u>				
Farm capital	\$416,290	\$8,591	\$4,915	\$8,792
Real estate		\$3,600		\$3,684
Machinery & equipment	\$68,720	\$1,418	\$811	
<u>Ratios</u>				
Asset turnover ratio	Operating Expense	Interest Expense		Depreciation Expense
0.48	0.84	0.03		0.06

³⁹Average of 20 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						
204 New York Dairy Farms, 2009						
Ratio	Number of Farms	Number of Cows	Farm Capital (average for year)		Labor & Management Income Per Operator	Net Farm Income (without appreciation)
			Per Cow	Per Worker		
≥ .50	42	747	\$7,353	\$337,005	\$-227,388	\$-257,416
.40 to .49	52	660	9,229	408,909	-174,659	-142,911
.30 to .39	59	406	10,300	443,500	-123,965	-99,721
Less than .30	51	119	12,033	412,782	-69,217	-34,213

Measures of labor efficiency are key indicators of the work accomplished by an average worker. The 20 farms with the highest rates of return on all capital (without appreciation) were above the average of all 204 farms in all measures of labor efficiency except tillable acres per worker. The top 10 percent averaged four more cows per worker and sold 12 percent more milk per worker than the average of all farms.

Table 41.

LABOR EFFICIENCY				
204 New York Dairy Farms, 2009				
Labor Efficiency	Average Farms		Average Top 10% Farms ⁴¹	
	Total	Per Worker ⁴⁰	Total	Per Worker ⁴⁰
Cows, average number	469	44	623	48
Milk sold, pounds	11,355,494	1,057,063	15,258,735	1,186,066
Tillable acres	965	90	1,089	85

⁴⁰The 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. A full-time month is specified to be 230 hours of labor per month.

⁴¹Average of 20 farms with highest rates of return to all capital (without appreciation).

The labor force averaged 10.74 full-time worker equivalents per farm (based on 230 hours per month). Nineteen percent of the labor was supplied by the farm operator/managers. There were two operators on 137 farms, three on 52 farms, and 26 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 \$1,289 per cow and \$5.26 per hundredweight on the 20 farms in the top decile.

Table 42.

**LABOR FORCE INVENTORY AND COST ANALYSIS
204 New York Dairy Farms, 2009**

Labor Force	Months ⁴²	Age	Years of Education	Value of Labor & Management	
Operator number 1	13.3	52	14	\$47,644	
Operator number 2	7.3	47	14	27,400	
Operator number 3	2.5	42	14	10,299	
Operator number 4	1.4	47	14	<u>4,607</u>	
Family paid	3.9			Total \$89,950	
Family unpaid	2.1				
Hired	<u>98.4</u>				
Total	128.9	÷ 12 =	10.74 Worker Equivalent 1.83 Operator/Manager Equivalent		
<u>Average Top 10% Farms:</u> ⁴³					
Total	154.4	÷ 12 =	12.87 Worker Equivalent 1.83 Operator/Manager Equivalent		
	Average 204 Farms			Avg. Top 10% Farms ⁴³	
Labor Costs	Total	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Value operators' labor (\$2,500/month)	\$ 61,375	\$ 131	\$ 0.54	\$ 102	\$0.42
Family unpaid (\$2,500/month)	5,175	11	0.05	4	0.02
Hired	<u>306,082</u>	<u>652</u>	<u>2.69</u>	<u>642</u>	<u>2.62</u>
Total Labor	\$372,632	\$ 794	\$ 3.28	\$ 748	\$3.06
Machinery Cost	<u>309,532</u>	<u>660</u>	<u>2.73</u>	<u>541</u>	<u>2.21</u>
Total Labor & Machinery	\$682,164	\$1,454	\$ 6.01	\$1,289	\$5.26
Hired labor exp. per hired worker equiv.	\$35,908			\$37,538	
Hired labor exp. as % of milk sales	19.4%			18.6%	

⁴²See footnote number 40 in Table 41.

⁴³Average of 20 farms with highest rates of return to all capital (without appreciation).

The relationship of labor efficiency to net farm income and labor and management income per operator is usually positive over the range of efficiency levels. The higher outputs of milk sold per worker are partially attributable to higher producing cows. In 2009, increased labor efficiency did not result in larger net farm incomes.

Table 43.

**MILK SOLD PER WORKER AND NET FARM INCOME
204 New York Dairy Farms, 2009**

Pounds of Milk Sold Per Worker	No. of Farms	No. of Cows	Pounds of Milk Per Cow	Net Farm Income (without appreciation)	Labor & Manage- ment Income Per Operator
Under 500,000	29	65	16,303	\$-5,154	\$-36,189
500,000 to 699,999	46	135	19,938	-40,523	-57,186
700,000 to 899,999	32	271	22,414	-46,323	-78,998
900,000 to 1,099,999	45	625	23,985	-201,651	-189,905
1,100,000 & over	52	977	25,453	-255,791	-249,332

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 204 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 top 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 204 New York Dairy Farms, 2009

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
34.5	1,662	43,168,090	27,708	5.5	26	63	1,442,513
21.6	969	24,026,822	26,204	4.4	22	51	1,195,505
16.1	715	17,158,049	25,098	3.9	21	47	1,103,896
12.2	512	11,954,459	24,083	3.5	19	43	1,022,874
8.2	359	8,336,747	23,176	3.2	18	40	927,078

5.4	203	4,407,937	21,930	2.8	17	37	823,127
4.0	136	2,631,526	20,554	2.5	16	34	701,150
3.1	96	1,831,947	19,097	2.3	15	31	618,720
2.4	68	1,198,114	17,092	1.9	13	28	520,658
1.6	47	789,780	13,066	1.5	8	21	346,599

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		
\$556	24%	\$392	\$1,050	\$761	\$4.61		
827	31	507	1,241	1,073	5.39		
938	33	568	1,348	1,233	5.83		
1,039	36	611	1,425	1,311	6.15		
1,124	37	653	1,478	1,407	6.41		

1,189	39	688	1,537	1,494	6.67		
1,259	41	726	1,614	1,557	6.94		
1,340	43	779	1,709	1,638	7.25		
1,441	46	834	1,852	1,752	7.64		
1,656	52	1,044	2,273	2,045	9.01		

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.

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 66-70.

Table 44. (continued)

**FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS
204 New York Dairy Farms, 2009**

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Operating Cost Milk Production Per Cow	Operating Cost Milk Production Per Cwt.	Total Cost Milk Production Per Cow	Total Cost Milk Production Per Cwt.
\$3,904	\$15.04	\$1,539	\$9.36	\$2,786	\$14.64
3,615	14.46	2,107	11.18	3,286	15.73
3,472	14.20	2,412	12.03	3,529	16.34
3,343	13.99	2,604	12.45	3,724	17.04
3,212	13.82	2,863	13.07	3,892	17.59

3,001	13.68	3,031	13.54	4,070	18.31
2,815	13.50	3,193	14.15	4,235	18.90
2,586	13.33	3,437	14.69	4,399	19.92
2,310	13.11	3,726	15.62	4,595	21.92
1,786	12.65	4,115	17.20	5,037	25.94

Net Farm Income Without Appreciation			Profitability Net Farm Income With Appreciation		Labor & Management Income	
Total	Per Cow	Operations Ratio	Total	Per Cow	Per Farm	Per Operator
\$189,108	\$621	0.17	\$316,867	\$689	\$44,796	\$29,113
50,933	261	0.08	73,223	359	-22,905	-15,857
21,392	129	0.03	32,127	166	-41,298	-27,377
4,190	25	0.01	6,546	49	-61,781	-39,543
-18,397	-107	-0.03	-19,455	-115	-89,481	-57,798

-41,720	-215	-0.06	-38,756	-234	-131,913	-80,521
-70,753	-353	-0.11	-65,741	-320	-219,725	-116,887
-156,846	-502	-0.14	-138,222	-476	-322,905	-187,439
-338,128	-636	-0.19	-294,082	-645	-553,193	-302,719
-861,956	-1,025	-0.35	-945,904	-1,058	-1,234,813	-758,790

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 204 New York Dairy Farms, 2009

	Average 204 Farms		Average Top 10% Farms ⁴⁴	
<u>How farm assets are being used (average for the year):</u>				
Total assets (capital) per cow	\$9,060		\$8,591	
Farm assets in livestock	25%		24%	
Farm assets in farm real estate	41%		42%	
Farm assets in machinery	17%		17%	
<u>Measures of debt capacity & debt structure:</u>				
Equity in the business	62%		66%	
Farm debt per cow	\$3,361		\$2,841	
Long term debt/asset ratio ⁴⁵	0.32		0.26	
Intermediate & current term debt/asset ratio ⁴⁵	0.42		0.39	
Intermediate & current term debt as % of total	64%		68%	
<u>Debt repayment ability:⁴⁶</u>				
Cash flow coverage ratio	0.34		1.16	
Debt coverage ratio	-0.06		1.07	
Debt payments made per cow	\$508		\$529	
Debt payments made as % of milk receipts	15%		15%	
<u>Indicators of annual financial progress:</u>				
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Annual change in farm assets	+\$5,435	+0.1%	+\$113,316	+2.1%
Annual change in farm debt	+\$229,442	+16.6%	+\$122,028	+7.2%
Annual change in farm net worth	-\$224,008	-7.8%	-\$8,712	-0.2%

⁴⁴Twenty farms with highest rates of return on all capital (without appreciation).

⁴⁵Long or intermediate and current term debt divided by long or intermediate and current term assets.

⁴⁶Average of 177 farms that participated in DFBS both in 2008 and 2009. Twenty top 10 percent farms that participated both years.

The most profitable farms carried \$520 less debt per cow, the average equity in their businesses was four percent higher than that of the average of all 204 farms, and they had a greater ability to make 2010 debt payments when measured by debt coverage ratio. Because, with higher income they were able to pay down debt, it does not mean that lower debt farms are more profitable.

Average farm debt grew 16.5 percentage points faster than assets during 2009 on the 204 dairy farms. Average farm net worth decreased 7.8 percent.

The farm financial analysis chart is designed just like the farm business chart on pages 44-45 and may be used to measure the financial health of the farm business. Most of the financial measures are defined on pages 16, 18, 22, and 42 in this publication.

Table 46.

FINANCIAL ANALYSIS CHART
204 New York Dairy Farms, 2009

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
\$129	\$869	4.73	2.73	4%	\$207	48%	24.00
265	536	1.30	1.07	7	1,172	29	3.80
320	425	0.90	0.68	10	1,925	22	2.67
388	334	0.64	0.39	12	2,513	19	2.09
448	225	0.37	0.13	14	2,914	15	1.75

512	81	0.14	-0.03	17	3,517	11	1.48
592	-6	-0.06	-0.29	19	4,048	6	1.17
684	-132	-0.42	-0.57	22	4,632	0	0.94
841	-278	-0.73	-1.04	25	5,166	-6	0.72
1,321	-587	-1.87	-2.34	38	6,688	-25	0.30
Solvency				Operational Ratios			
Leverage Ratio ⁴⁷	Percent Equity	Debt/Asset Ratio		Operating Expense Ratio	Interest Expense Ratio	Depreciation Expense Ratio	
		Current & Intermediate	Long Term				
0.08	98%	0.02	0.00	0.73	0.00	0.02	
0.19	88	0.11	0.00	0.83	0.01	0.04	
0.28	81	0.22	0.03	0.86	0.02	0.05	
0.39	75	0.27	0.11	0.89	0.02	0.06	
0.53	69	0.35	0.22	0.91	0.03	0.07	

0.73	60	0.42	0.33	0.95	0.04	0.08	
0.87	55	0.47	0.44	0.98	0.04	0.09	
1.06	49	0.56	0.53	1.03	0.05	0.11	
1.39	43	0.67	0.64	1.07	0.06	0.13	
3.03	26	0.89	0.98	1.19	0.11	0.18	
Efficiency (Capital)					Profitability		
Asset Turnover (ratio)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth With Appreciation	Percent Rate of Return with Appreciation on:		
					Equity	Investment ⁴⁸	
0.63	\$1,882	\$607	\$6,103	\$130,552	4%	4%	
0.52	2,558	968	7,394	20,677	-1	1	
0.48	2,940	1,229	7,972	-8,052	-3	-1	
0.44	3,319	1,456	8,730	-30,384	-5	-2	
0.40	3,639	1,618	9,230	-54,874	-7	-4	

0.37	4,097	1,803	9,754	-91,665	-10	-5	
0.34	4,625	2,036	10,312	-168,225	-12	-7	
0.30	5,339	2,255	11,366	-272,257	-15	-8	
0.26	6,375	2,560	12,448	-460,184	-21	-10	
0.19	8,932	3,659	15,218	-1,243,274	-46	-16	

⁴⁷Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

⁴⁸Return on all farm capital (no deduction for interest paid) divided by total farm assets.

Herd Size Comparisons

The 204 New York dairy farms have been sorted into seven herd size categories and averages for the farms in each category are presented in Tables 47 through 54. Note that after the less than 60 cow category, the herd size categories increase by 40 cows up to 100 cows, by 100 cows up to 200 cows, by 200 cows up to 600 cows and by 300 cows up to 900 cows.

In most years, as herd size increases, the net farm income increases (Table 47); however, that was not the case for 2009. All herd size categories averaged a negative net farm income without appreciation. Net farm income without appreciation averaged \$-1,939 per farm for the less than 60 cow farms and \$-490,500 per farm for those with more than 900 cows. Return to all capital without appreciation generally increased as herd size increased.

It is more than size of herd that determines profitability on dairy farms. Farms with 900 and more cows averaged \$-358 net farm income per cow while 60 cow dairy farms averaged \$-40 net farm income per cow. The under 60 herd size category had the highest net farm income per cow while the 60 to 99 herd size category had the second highest net farm income per cow at \$-137. Other factors that affect profitability and their relationship to the size classifications are shown in Table 50.

Table 47.

COWS PER FARM AND FARM FAMILY INCOME MEASURES 204 New York Dairy Farms, 2009

Number of Cows	Number of Farms	Average Number of Cows	Net Farm Income Without Appreciation	Net Farm Income Per Cow	Labor & Management Income Per Operator	Return to All Capital Without Appreciation
Under 60	25	48	\$-1,939	\$-40	\$-30,015	-7.2%
60 to 99	28	78	-10,721	-137	-36,440	-7.6%
100 to 199	40	138	-26,722	-193	-50,868	-5.1%
200 to 399	27	291	-48,149	-165	-69,206	-3.8%
400 to 599	22	489	-79,515	-162	-96,897	-3.1%
600 to 899	26	726	-144,090	-199	-178,944	-2.6%
900 & over	36	1,368	-490,500	-358	-382,118	-4.1%

This year, net farm income per cow did not exhibit the usual increase as herd size increased. All herd size categories saw a decrease in operating cost of producing milk from a year earlier (Table 48). 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 more than 900 cows averaged more milk sold per cow than any other size category (Table 48). With 25,229 pounds of milk sold per cow, farms in the largest herd size group averaged 9.1 percent more milk output per cow than the average of all herds in the summary with less than 900 cows.

Many dairy farmers who have been willing and able to employ and manage the labor required to milk three times per day have been successful. Only two percent of the 53 DFBS farms with less than 100 cows used a milking frequency greater than two times per day. As herd size increased, the percent of herds using a higher milking frequency increased. Farms with 100 to 200 cows reported eight percent of the herds milking more often than two times per day, the 200-399 cow herds reported 74 percent, 400-599 cow herds reported 77 percent, 600-899 cow herds reported 81 percent, and the 900 cow and larger herds reported 89 percent exceeding the two times per day milking frequency.

Table 48.

COWS PER FARM AND RELATED FARM FACTORS
204 New York Dairy Farms, 2009

Number of Cows	Average Number of Cows	Milk Sold Per Cow (lbs.)	Milk Sold Per Worker (cwt.)	Tillable Acres Per Cow	Forage DM Per Cow (tons)	Farm Capital Per Cow	Cost of Producing Milk Per Cwt.	
							Operating	Total
Under 60	48	17,805	4,533	3.4	8.2	\$11,742	\$12.08	\$21.42
60 to 99	78	18,114	5,350	3.2	8.2	10,420	12.83	20.66
100 to 199	138	19,978	6,683	2.9	8.2	10,292	13.21	18.79
200 to 399	291	23,702	9,865	2.3	8.0	8,420	13.25	16.62
400 to 599	489	23,118	9,492	2.5	8.0	9,492	13.47	17.25
600 to 899	726	24,729	10,800	1.9	8.1	8,833	13.56	16.59
900 & over	1,368	25,229	12,174	1.9	8.3	8,890	13.98	16.90

Milk output per worker has always shown a strong correlation with herd size. The farms with 100 cows or more averaged over 1,089,695 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 503,050 pounds per worker.

In achieving the highest productivity per cow and per worker, the largest farms had the fewest crop acres per cow and above average forage dry matter harvested per cow. However, the larger farms generally purchased more roughage per cow. The 200 to 399 herd size group had the more efficient use of farm capital with an average investment of \$8,420 per cow.

The 26 farms with 600 to 899 cows had the lowest total cost of producing milk at \$16.59 per hundredweight. This is \$2.02 below the \$18.61 average for the remaining 178 dairy farms.

Tables 49 through 51 show progress of the farm businesses that have participated in DFBS in each of the last five years for three herd size groups.

A detailed list of accrual expenses, receipts and a profitability analysis is presented in Table 52, on pages 53 and 54 for the seven herd size categories. Purchased feed is the largest expense on all farms, regardless of size. However, larger farms find hired labor expense as the second largest expense category.

Assets, liabilities and financial measures are presented in Table 53 on pages 55-58. All herd size categories saw a decrease in net worth during 2009. The largest herd size category experienced a decrease in net worth of \$743,729. However, percent equity went down as assets increased. The largest herds had the lowest percent equity; while the smaller herds averaged 77 percent.

Selected business factors by herd size group are presented in Table 54 on pages 59 and 60. George Warren, father of farm business management at Cornell, said in his 1918 farm management text, "No size of farm is large enough to ensure a profit." Therefore, larger farms are, on average, more profitable; but no farm is large enough to guarantee a profit. For a more detailed analysis of large herd farms, see Dairy Farm Business Summary, New York Large Herd Farms, 300 Cows or Larger, 2009. For analysis of smaller herds, see Dairy Farm Business Summary, New York Small Herd Farms, 80 Cows or Fewer, 2009. Both publications are available from Linda Putnam, Department of Applied Economics and Management, Cornell University, 305 Warren Hall, Ithaca, New York 14853-7801; phone 607-255-8429; e-mail ldp2@cornell.edu. Visit the Charles H. Dyson School of Applied Economics and Management website <http://www.dyson.cornell.edu/outreach/> for a list of all department publications and a publication order form.

Table 49.

PROGRESS OF FARM BUSINESSES WITH LESS THAN 110 COWS
Same 28 New York Dairy Farms, 2005 - 2009

Selected Factors	2005	2006	2007	2008	2009
Milk receipts per cwt. milk	\$15.86	\$13.82	\$20.53	\$19.37	\$13.60
<u>Size of Business</u>					
Average number of cows	59	60	62	63	64
Average number of heifers	46	48	50	53	52
Milk sold, cwt.	11,428	11,402	11,747	12,294	12,222
Worker equivalent	2.26	2.19	2.20	2.23	2.29
Total tillable acres	161	159	160	168	168
<u>Rates of Production</u>					
Milk sold per cow, lbs.	19,323	19,072	19,035	19,536	19,054
Hay DM per acre, tons	2.4	2.4	2.1	2.3	2.4
Corn silage per acre, tons	17	15	17	18	16
<u>Labor Efficiency</u>					
Cows per worker	26	27	28	28	28
Milk sold per worker, lbs.	505,667	520,660	533,966	551,293	533,716
<u>Cost Control</u>					
Grain & concn. purchased as % of milk sales	27%	32%	24%	31%	38%
Dairy feed & crop expense per cwt. milk	\$5.65	\$5.94	\$6.4	\$8.16	\$7.08
Operating cost of producing cwt. milk	\$10.93	\$11.11	\$13.04	\$14.79	\$12.39
Total cost of producing cwt. milk	\$17.76	\$18.36	\$20.36	\$22.11	\$20.01
Hired labor cost per cwt.	\$0.72	\$0.67	\$0.81	\$0.78	\$0.65
Interest paid per cwt.	\$0.54	\$0.68	\$0.69	\$0.55	\$0.57
Labor & machinery costs per cow	\$1,580	\$1,631	\$1,709	\$1,734	\$1,650
Replacement livestock expense	\$2,478	\$1,920	\$2,108	\$1,827	\$64
Expansion livestock expense	\$1,770	\$300	\$0	\$945	\$1,984
<u>Capital Efficiency</u>					
Farm capital per cow	\$9,060	\$9,483	\$9,831	\$10,252	\$10,419
Machinery & equipment per cow	\$1,795	\$1,887	\$1,929	\$2,075	\$2,090
Real estate per cow	\$4,202	\$4,450	\$4,555	\$4,595	\$4,787
Livestock investment per cow	\$2,079	\$2,163	\$2,236	\$2,307	\$2,260
Asset turnover ratio	0.45	0.36	0.49	0.43	0.31
<u>Profitability</u>					
Net farm income without appreciation	\$42,384	\$15,885	\$72,268	\$39,529	\$-120
Net farm income with appreciation	\$63,162	\$22,887	\$92,745	\$43,441	\$-884
Labor & management income per operator/manager	\$9,140	\$-13,981	\$30,216	\$2,738	\$-27,471
Rate return on:					
Equity capital with appreciation	4.8%	-5.3%	9.8%	-0.9%	-10.6%
All capital with appreciation	4.8%	-2.7%	8.9%	0.4%	-7.0%
All capital without appreciation	0.9%	-3.9%	5.6%	-0.3%	-6.9%
<u>Financial Summary, End Year</u>					
Farm net worth	\$429,665	\$437,262	\$503,248	\$510,321	\$503,234
Change in net worth with appreciation	\$38,749	\$1,749	\$60,697	\$8,984	\$-8,094
Debt to asset ratio	0.23	0.24	0.20	0.22	0.26
Farm debt per cow	\$2,080	\$2,263	\$2,056	\$2,327	\$2,641

Table 50.

PROGRESS OF FARM BUSINESSES WITH 110-499 COWS
Same 48 New York Dairy Farms, 2005 - 2009

Selected Factors	2005	2006	2007	2008	2009
Milk receipts per cwt. milk	\$16.08	\$13.86	\$20.41	\$19.31	\$13.74
<u>Size of Business</u>					
Average number of cows	232	242	251	263	274
Average number of heifers	184	197	205	218	235
Milk sold, cwt.	50,968	53,589	56,264	60,286	62,992
Worker equivalent	5.96	6.11	6.20	6.53	6.75
Total tillable acres	507	515	532	574	591
<u>Rates of Production</u>					
Milk sold per cow, lbs.	21,941	22,106	22,388	22,961	22,964
Hay DM per acre, tons	3.1	3.1	3.1	3.2	3.1
Corn silage per acre, tons	19	17	19	19	17
<u>Labor Efficiency</u>					
Cows per worker	39	40	41	40	41
Milk sold per worker, lbs.	855,163	877,063	907,491	923,222	933,221
<u>Cost Control</u>					
Grain & concn. purchased as % of milk sales	26%	30%	25%	31%	39%
Dairy feed & crop expense per cwt. milk	\$5.13	\$5.11	\$6.29	\$7.47	\$6.63
Operating cost of producing cwt. milk	\$11.99	\$11.82	\$13.86	\$15.34	\$13.11
Total cost of producing cwt. milk	\$15.74	\$15.40	\$17.63	\$19.19	\$16.74
Hired labor cost per cwt.	\$2.28	\$2.34	\$2.40	\$2.58	\$2.47
Interest paid per cwt.	\$0.63	\$0.73	\$0.70	\$0.52	\$0.48
Labor & machinery costs per cow	\$1,401	\$1,354	\$1,502	\$1,640	\$1,439
Replacement livestock expense	\$10,440	\$5,808	\$6,024	\$6,312	\$4,932
Expansion livestock expense	\$3,712	\$2,178	\$6,777	\$9,994	\$10,960
<u>Capital Efficiency</u>					
Farm capital per cow	\$7,474	\$7,607	\$8,057	\$8,667	\$8,645
Machinery & equipment per cow	\$1,396	\$1,428	\$1,470	\$1,572	\$1,597
Real estate per cow	\$2,958	\$3,029	\$3,128	\$3,388	\$3,479
Livestock investment per cow	\$1,954	\$2,035	\$2,156	\$2,211	\$2,147
Asset turnover ratio	0.58	0.51	0.69	0.60	0.44
<u>Profitability</u>					
Net farm income without appreciation	\$139,961	\$45,879	\$296,693	\$162,154	\$-33,693
Net farm income with appreciation	\$208,650	\$105,346	\$401,791	\$196,992	\$-44,940
Labor & management income per operator/manager	\$47,075	\$-12,017	\$134,762	\$45,529	\$-67,183
Rate return on:					
Equity capital with appreciation	12.5%	3.1%	23.7%	7.6%	-7.6%
All capital with appreciation	10.1%	4.2%	18.3%	6.8%	-3.8%
All capital without appreciation	6.1%	0.9%	13.1%	5.2%	-3.3%
<u>Financial Summary, End Year</u>					
Farm net worth	\$1,198,274	\$1,235,505	\$1,553,237	\$1,647,012	\$1,538,390
Change in net worth with appreciation	\$119,180	\$37,091	\$314,430	\$78,408	\$-114,375
Debt to asset ratio	0.34	0.34	0.28	0.30	0.35
Farm debt per cow	\$2,623	\$2,607	\$2,421	\$2,667	\$2,966

Table 51.

PROGRESS OF FARM BUSINESSES WITH MORE THAN 500 COWS
Same 50 New York Dairy Farms, 2005 - 2009

Selected Factors	2005	2006	2007	2008	2009
Milk receipts per cwt. milk	\$15.95	\$13.82	\$20.39	\$19.35	\$13.98
<u>Size of Business</u>					
Average number of cows	841	891	893	914	957
Average number of heifers	667	709	707	753	800
Milk sold, cwt.	203,735	214,765	214,988	226,170	237,780
Worker equivalent	18.43	19.23	19.47	20.21	21.00
Total tillable acres	1,602	1,652	1,703	1,805	1,879
<u>Rates of Production</u>					
Milk sold per cow, lbs.	24,214	24,112	24,069	24,752	24,842
Hay DM per acre, tons	3.7	3.5	3.1	3.9	3.5
Corn silage per acre, tons	20	19	19	20	20
<u>Labor Efficiency</u>					
Cows per worker	46	46	46	45	46
Milk sold per worker, lbs.	1,105,454	1,116,821	1,104,200	1,119,099	1,132,286
<u>Cost Control</u>					
Grain & concn. purchased as % of milk sales	25%	29%	24%	31%	38%
Dairy feed & crop expense per cwt. milk	\$5.05	\$4.96	\$6.04	\$7.29	\$6.41
Operating cost of producing cwt. milk	\$12.16	\$12.19	\$13.79	\$15.45	\$13.87
Total cost of producing cwt. milk	\$14.93	\$14.98	\$16.75	\$18.63	\$16.92
Hired labor cost per cwt.	\$2.83	\$2.80	\$2.93	\$3.04	\$2.91
Interest paid per cwt.	\$0.60	\$0.74	\$0.76	\$0.55	\$0.54
Labor & machinery costs per cow	\$1,356	\$1,347	\$1,458	\$1,632	\$1,459
Replacement livestock expense	\$22,707	\$13,365	\$18,753	\$26,506	\$11,484
Expansion livestock expense	\$33,640	\$42,768	\$24,111	\$49,356	\$33,495
<u>Capital Efficiency</u>					
Farm capital per cow	\$7,233	\$7,558	\$8,134	\$8,944	\$8,947
Machinery & equipment per cow	\$1,176	\$1,218	\$1,319	\$1,505	\$1,563
Real estate per cow	\$2,722	\$2,925	\$3,089	\$3,333	\$3,470
Livestock investment per cow	\$2,031	\$2,121	\$2,241	\$2,350	\$2,260
Asset turnover ratio	0.66	0.56	0.72	0.63	0.46
<u>Profitability</u>					
Net farm income without appreciation	\$503,320	\$75,262	\$1,134,336	\$555,151	\$-295,034
Net farm income with appreciation	\$808,476	\$310,057	\$1,459,574	\$708,585	\$-217,306
Labor & management income per operator/manager	\$160,215	\$-64,984	\$440,858	\$137,063	\$-261,848
Rate return on:					
Equity capital with appreciation	18.8%	4.7%	28.7%	10.8%	-6.8%
All capital with appreciation	13.5%	5.2%	20.7%	8.7%	-2.7%
All capital without appreciation	8.5%	1.7%	16.2%	6.8%	-3.6%
<u>Financial Summary, End Year</u>					
Farm net worth	\$4,002,551	\$4,153,137	\$5,271,534	\$5,521,948	\$5,053,973
Change in net worth with appreciation	\$579,099	\$64,344	\$1,201,631	\$249,923	\$-457,271
Debt to asset ratio	0.38	0.40	0.33	0.35	0.41
Farm debt per cow	\$2,799	\$3,024	\$2,867	\$3,191	\$3,622

Table 52.

FARM BUSINESS SUMMARY BY HERD SIZE
204 New York Dairy Farms, 2009

Item	Farm Size:	Less than 60 Cows	60 to 99 Cows	100 to 199 Cows	200 to 399 Cows
Number of farms		25	28	40	27
<u>ACCRUAL EXPENSES</u>					
Hired labor		\$7,076	\$12,502	\$56,115	\$161,970
Dairy grain & concentrate		40,803	75,638	144,962	364,003
Dairy roughage		2,708	11,985	7,701	29,573
Nondairy feed		0	234	0	236
Professional nutritional services		0	0	82	319
Machine hire, rent & lease		3,638	3,317	12,643	42,727
Machine repairs & farm vehicle expense		9,361	14,323	25,518	43,127
Fuel, oil & grease		6,248	9,368	20,868	42,337
Replacement livestock		204	896	363	13,532
Breeding		2,645	2,849	6,417	17,632
Veterinary & medicine		3,598	6,652	15,110	41,377
Milk marketing		11,217	14,842	26,367	62,117
Bedding		1,213	2,281	5,993	23,808
Milking supplies		4,289	6,631	11,293	22,047
Cattle lease & rent		0	0	845	994
Custom boarding		517	1,782	3,128	16,806
bST expense		313	880	3,145	11,182
Livestock professional fees		850	541	1,981	5,144
Other livestock expense		2,734	3,846	5,759	6,883
Fertilizer & lime		3,716	4,856	14,041	29,647
Seeds & plants		1,943	3,579	9,153	20,429
Spray & other crop expense		2,008	2,482	7,029	12,152
Crop professional fees		272	311	1,019	1,492
Land, building & fence repair		2,352	3,021	5,994	15,916
Taxes & rent		6,618	8,348	14,867	34,692
Utilities		6,101	9,080	14,289	31,154
Interest paid		5,857	10,810	17,322	34,676
Other professional fees		1,027	590	1,876	6,211
Misc. (including insurance)		<u>4,768</u>	<u>6,672</u>	<u>10,656</u>	<u>19,351</u>
Total Operating Expenses		\$132,074	\$218,316	\$444,537	\$1,111,531
Expansion livestock		48	1,944	1,896	20,299
Extraordinary expense		200	93	1,289	2,153
Machinery depreciation		9,488	14,710	24,966	43,899
Building depreciation		<u>3,863</u>	<u>6,672</u>	<u>13,378</u>	<u>29,792</u>
Total Accrual Expenses		\$145,673	\$241,535	\$486,067	\$1,207,674
<u>ACCRUAL RECEIPTS</u>					
Milk sales		\$115,402	\$191,767	\$378,353	\$943,082
Dairy cattle		7,854	8,667	23,069	92,004
Dairy calves		891	1,070	2,549	7,577
Other livestock		449	969	244	881
Crops		1,404	1,086	1,790	13,042
Miscellaneous receipts		<u>17,734</u>	<u>27,255</u>	<u>53,340</u>	<u>102,939</u>
Total Accrual Receipts		\$143,734	\$230,814	\$459,344	\$1,159,525
<u>PROFITABILITY ANALYSIS</u>					
Net farm income (without appreciation)		\$-1,939	\$-10,721	\$-26,722	\$-48,149
Net farm income (with appreciation)		\$1,275	\$-5,742	\$-31,280	\$-64,410
Labor & management income		\$-33,917	\$-53,202	\$-83,424	\$-127,339
Number of operators		1.13	1.46	1.64	1.84
Labor & management income/operator		\$-30,015	\$-36,440	\$-50,868	\$-69,206
Rates of return on: Equity capital w/o apprec.		-10.5%	-13.2%	-8.9%	-8.3%
Equity capital with appreciation		-9.7%	-12.3%	-9.3%	-9.4%
All capital without appreciation		-6.6%	-7.6%	-5.1%	-3.8%
All capital with appreciation		-7.2%	-7.0%	-5.5%	-4.5%

Table 52. (continued)

FARM BUSINESS SUMMARY BY HERD SIZE
204 New York Dairy Farms, 2009

Item	Farm Size:	400 to 599 Cows	600 to 899 Cows	900 or More Cows
Number of farms		22	26	36
<u>ACCRUAL EXPENSES</u>				
Hired labor		\$291,606	\$495,068	\$1,000,247
Dairy grain & concentrate		615,715	932,726	1,763,201
Dairy roughage		15,878	52,185	81,693
Nondairy feed		155	84	74
Professional nutritional services		582	1,017	311
Machine hire, rent & lease		58,510	55,242	93,100
Machine repairs & farm vehicle expense		94,864	125,853	241,149
Fuel, oil & grease		74,610	96,063	185,416
Replacement livestock		2,018	8,336	20,389
Breeding		24,695	41,267	63,727
Veterinary & medicine		69,786	120,055	218,904
Milk marketing		103,647	166,121	286,546
Bedding		35,604	71,435	113,637
Milking supplies		44,717	66,806	133,219
Cattle lease & rent		381	435	4,828
Custom boarding		16,355	74,611	148,564
bST expense		10,182	33,504	104,446
Livestock professional services		6,886	7,869	13,106
Other livestock expense		8,526	13,361	20,015
Fertilizer & lime		60,109	58,786	138,223
Seeds & plants		47,977	61,804	120,813
Spray & other crop expense		24,485	36,641	57,186
Crop professional fees		2,859	3,796	8,233
Land, building & fence repair		20,229	32,010	87,753
Taxes & rent		53,308	70,602	157,402
Utilities		46,186	56,136	124,840
Interest paid		55,361	94,000	166,680
Other professional fees		11,913	13,737	36,042
Misc. (including insurance)		29,649	47,096	85,808
Total Operating Expenses		<u>\$1,826,793</u>	<u>\$2,836,646</u>	<u>\$5,475,551</u>
Expansion livestock		12,632	22,550	37,690
Extraordinary expense		405	1,974	1
Machinery depreciation		83,851	135,289	264,766
Building depreciation		62,925	85,013	188,186
Total Accrual Expenses		<u>\$1,986,607</u>	<u>\$3,081,472</u>	<u>\$5,966,195</u>
<u>ACCRUAL RECEIPTS</u>				
Milk sales		\$1,591,922	\$2,513,153	\$4,787,157
Dairy cattle		152,142	204,341	342,728
Dairy calves		13,220	34,572	50,217
Other livestock		16,445	1,422	7,079
Crops		8,403	36,788	44,037
Misc. receipts		124,960	147,105	244,477
Total Accrual Receipts		<u>\$1,907,092</u>	<u>\$2,937,381</u>	<u>\$5,475,695</u>
<u>PROFITABILITY ANALYSIS</u>				
Net farm income (without appreciation)		\$-79,515	\$-144,090	\$-490,500
Net farm income (with appreciation)		\$-90,301	\$-134,557	\$-397,434
Labor & management income		\$-241,273	\$-348,941	\$-875,050
Number of operators		2.49	1.95	2.29
Labor & management income/operator		\$-96,897	\$-178,944	\$-382,118
Rates of return on: Equity capital w/o apprec.		-6.3%	-6.4%	-8.6%
Equity capital with appreciation		-6.6%	-6.2%	-7.4%
All capital without appreciation		-3.1%	-2.6%	-4.1%
All capital with appreciation		-3.4%	-2.5%	-3.3%

Table 53.

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
204 New York Dairy Farms, 2009

Item	Farms with:		60 to 99 Cows	
	Less than 60 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
<u>ASSETS</u>				
Farm cash, checking & savings	\$ 6,423	\$ 5,549	\$ 5,343	\$ 4,575
Accounts receivable	10,228	9,664	19,280	19,742
Prepaid expenses	171	0	443	247
Feed & supplies	30,646	30,734	59,702	56,382
Livestock ⁴⁹	116,403	112,159	181,828	179,699
Machinery & equipment ⁴⁹	112,635	113,350	150,520	146,751
Farm Credit stock	382	412	307	325
Other stock & certificates	348	325	10,402	11,232
Land & buildings ⁴⁹	<u>282,158</u>	<u>301,314</u>	<u>371,823</u>	<u>406,854</u>
Total Farm Assets	\$559,394	\$573,507	\$799,647	\$825,807
Nonfarm Assets ⁵⁰	<u>\$124,386</u>	<u>\$126,398</u>	<u>\$ 81,699</u>	<u>\$ 83,790</u>
Farm & Nonfarm Assets	\$683,780	\$699,905	\$881,346	\$909,597
<u>LIABILITIES</u>				
Accounts payable	\$6,276	\$8,460	\$19,195	\$24,727
Operating debt	2,489	2,316	5,461	4,583
Short term	1,030	1,312	1,589	2,440
Advanced government receipt	0	0	0	0
Current Portion:				
Intermediate	7,185	8,941	15,069	18,902
Long Term	4,386	4,465	4,892	6,441
Intermediate ⁵¹	43,119	40,980	79,643	82,356
Long term ⁴⁹	<u>50,749</u>	<u>64,049</u>	<u>122,072</u>	<u>140,230</u>
Total Farm Liabilities	\$115,234	\$130,524	\$247,920	\$279,680
Nonfarm Liabilities ⁵⁰	<u>2,857</u>	<u>4,572</u>	<u>1,016</u>	<u>700</u>
Farm & Nonfarm Liabilities	\$118,091	\$135,096	\$248,936	\$280,380
Farm Net Worth (Equity Capital)	\$444,161	\$442,983	\$551,727	\$546,127
Farm & Nonfarm Net Worth	\$565,689	\$564,809	\$632,410	\$629,217
<u>FINANCIAL MEASURES</u>				
	<u>Less than 60 Cows</u>		<u>60 to 99 Cows</u>	
Percent Equity	77%		66%	
Debt/asset ratio-long term	0.21		0.34	
Debt/asset ratio-intermediate & current	0.24		0.33	
Debt/asset ratio-total	0.23		0.34	
Leverage ratio	0.29		0.51	
Current ratio	1.80		1.42	
Working capital as % of total expenses	14%		10%	
Accounts payable as % of total debt	6%		9%	
Long-term debt as % of total debt	49%		50%	
Cost of term debt (weighted average)	3.96%		4.71%	
Change in net worth with appreciation	\$-1,178		\$-5,599	
Total farm debt per cow	\$2,634		\$3,476	
Debt payments made per cow	\$397		\$661	
Debt payments as % of milk sales	16%		27%	
Amount available for debt service	\$6,054		\$16,782	
Cash flow coverage ratio for 2009	0.37		0.42	
Debt coverage ratio for 2009	0.17		0.11	

⁴⁹Includes discounted lease payments.⁵⁰Average of farms reporting nonfarm assets and liabilities for 2009.⁵¹Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 53. (cont'd)

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
204 New York Dairy Farms, 2009

Item	Farms with:		200 to 399 Cows	
	100 to 199 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
<u>ASSETS</u>				
Farm cash, checking & savings	\$ 8,881	\$ 12,821	\$ 22,261	\$ 34,299
Accounts receivable	38,786	38,493	89,905	93,550
Prepaid expenses	85	125	2,383	2,388
Feed & supplies	124,336	115,056	276,014	242,747
Livestock ⁵²	319,012	300,864	617,968	628,084
Machinery & equipment ⁵²	273,941	271,340	469,115	468,163
Farm Credit stock	653	642	889	926
Other stock & certificates	16,963	18,777	40,079	39,258
Land & buildings ⁵²	<u>651,462</u>	<u>657,312</u>	<u>918,403</u>	<u>961,093</u>
Total Farm Assets	\$1,434,119	\$1,415,429	\$2,437,016	\$2,470,508
Nonfarm Assets ⁵³	\$ <u>124,465</u>	\$ <u>129,093</u>	\$ <u>175,984</u>	\$ <u>173,026</u>
Farm & Nonfarm Assets	\$1,558,584	\$1,544,522	\$2,613,000	\$2,643,534
<u>LIABILITIES</u>				
Accounts payable	\$36,606	\$39,888	\$51,152	\$89,685
Operating debt	24,713	31,746	58,751	80,021
Short term	4,680	5,597	5,889	9,911
Advanced government receipt	215	450	0	1,296
Current Portion:				
Intermediate	25,503	30,660	58,942	68,504
Long Term	7,867	8,814	19,339	21,498
Intermediate ⁵⁴	159,200	169,709	317,441	338,772
Long term ⁵²	<u>129,885</u>	<u>141,083</u>	<u>322,792</u>	<u>382,255</u>
Total Farm Liabilities	\$388,670	\$427,947	\$834,305	\$991,942
Nonfarm Liabilities ⁵³	<u>19,928</u>	<u>20,204</u>	<u>12,415</u>	<u>9,046</u>
Farm & Nonfarm Liabilities	\$408,598	\$448,151	\$846,720	\$1,000,988
Farm Net Worth (Equity Capital)	\$1,045,449	\$987,482	\$1,602,712	\$1,478,567
Farm & Nonfarm Net Worth	\$1,149,986	\$1,096,371	\$1,766,280	\$1,642,546
<u>FINANCIAL MEASURES</u>				
	<u>100 to 199 Cows</u>		<u>200 to 399 Cows</u>	
Percent equity	70%		60%	
Debt/asset ratio-long term	0.21		0.40	
Debt/asset ratio-intermediate & current	0.38		0.40	
Debt/asset ratio-total	0.30		0.40	
Leverage ratio	0.43		0.67	
Current ratio	1.42		1.38	
Working capital as % of total expenses	10%		8%	
Accounts payable as % of total debt	9%		9%	
Long-term debt as % of total debt	33%		39%	
Cost of term debt (weighted average)	5.08%		4.26%	
Change in net worth with appreciation	\$-61,365		\$-124,145	
Total farm debt per cow	\$3,090		\$3,244	
Debt payments made per cow	\$505		\$436	
Debt payments as % of milk sales	18%		14%	
Amount available for debt service	\$7,248		\$36,447	
Cash flow coverage ratio for 2009	0.12		0.27	
Debt coverage ratio for 2009	-0.61		-0.06	

⁵²Includes discounted lease payments.⁵³Average of farms reporting nonfarm assets and liabilities for 2009.⁵⁴Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 53. (cont'd)

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
204 New York Dairy Farms, 2009

Item	Farms with: 400 to 599 Cows		600 to 899 Cows	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
<u>ASSETS</u>				
Farm cash, checking & savings	\$ 41,124	\$ 52,713	\$ 32,442	\$ 78,567
Accounts receivable	158,992	167,001	240,758	203,180
Prepaid expenses	4,423	1,705	5,543	2,388
Feed & supplies	472,190	409,433	782,897	689,304
Livestock ⁵⁵	1,078,383	1,092,764	1,677,230	1,651,816
Machinery & equipment ⁵⁵	794,946	798,740	1,160,603	1,157,551
Farm Credit stock	1,000	2,227	2,421	2,225
Other stock & certificates	100,766	109,289	120,324	149,414
Land & buildings ⁵⁵	<u>1,967,996</u>	<u>2,037,497</u>	<u>2,354,971</u>	<u>2,511,744</u>
Total Farm Assets	\$4,619,818	\$4,671,369	\$6,377,189	\$6,446,189
Nonfarm Assets ⁵⁶	\$ <u>180,639</u>	\$ <u>201,889</u>	\$ <u>482,739</u>	\$ <u>530,726</u>
Farm & Nonfarm Assets	\$4,800,457	\$4,873,258	\$6,859,928	\$6,976,915
<u>LIABILITIES</u>				
Accounts payable	\$41,364	\$86,168	\$61,437	\$112,258
Operating debt	57,143	92,158	155,233	164,568
Short term	1,853	4,550	6,919	8,879
Advanced government receipt	0	0	0	0
Current Portion:				
Intermediate	124,493	150,831	204,301	219,547
Long Term	39,808	42,412	58,675	61,666
Intermediate ⁵⁷	481,441	622,724	938,971	1,199,923
Long term ⁵⁵	<u>570,483</u>	<u>602,896</u>	<u>731,995</u>	<u>753,423</u>
Total Farm Liabilities	\$1,316,585	\$1,601,738	\$2,157,533	\$2,520,265
Nonfarm Liabilities ⁵⁶	<u>0</u>	<u>0</u>	<u>2,144</u>	<u>2,111</u>
Farm & Nonfarm Liabilities	\$1,316,585	\$1,601,738	\$2,159,677	\$2,522,376
Farm Net Worth (Equity Capital)	\$3,303,234	\$3,069,632	\$4,219,656	\$3,925,924
Farm & Nonfarm Net Worth	\$3,483,872	\$3,271,520	\$4,700,251	\$4,454,539
<u>FINANCIAL MEASURES</u>				
	<u>400 to 599 Cows</u>		<u>600 to 899 Cows</u>	
Percent equity	66%		61%	
Debt/asset ratio-long term	0.30		0.30	
Debt/asset ratio-intermediate & current	0.38		0.45	
Debt/asset ratio-total	0.34		0.39	
Leverage ratio	0.52		0.64	
Current ratio	1.68		1.72	
Working capital as % of total expenses	13%		13%	
Accounts payable as % of total debt	5%		4%	
Long-term debt as % of total debt	38%		30%	
Cost of term debt (weighted average)	4.32%		4.23%	
Change in net worth with appreciation	\$-240,621		\$-293,733	
Total farm debt per cow	\$3,190		\$3,400	
Debt payments made per cow	\$408		\$599	
Debt payments as % of milk sales	13%		17%	
Amount available for debt service	\$47,784		\$149,222	
Cash flow coverage ratio for 2009	0.24		0.42	
Debt coverage ratio for 2009	0.12		0.11	

⁵⁵Includes discounted lease payments.⁵⁶Average of farms reporting nonfarm assets and liabilities for 2009.⁵⁷Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 53. (cont'd)

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
204 New York Dairy Farms, 2009

Item	Farms with:	
	Jan. 1	Dec. 31
<u>ASSETS</u>		
Farm cash, checking & savings	\$ 49,757	\$ 107,194
Accounts receivable	472,354	399,361
Prepaid expenses	31,133	17,288
Feed & supplies	1,471,318	1,192,862
Livestock ⁵⁸	3,133,084	3,086,599
Machinery & equipment ⁵⁸	1,938,935	1,969,580
Farm Credit stock	2,869	1,395
Other stock & certificates	267,522	286,377
Land & buildings ⁵⁸	<u>4,839,866</u>	<u>5,061,142</u>
Total Farm Assets	\$12,206,838	\$12,121,798
Nonfarm Assets ⁵⁹	<u>\$ 259,579</u>	<u>\$ 287,887</u>
Farm & Nonfarm Assets	\$12,466,417	\$12,409,685
<u>LIABILITIES</u>		
Accounts payable	\$164,015	\$241,150
Operating debt	384,233	371,780
Short term	4,688	19,041
Advanced government receipts	0	0
Current Portion:		
Intermediate	292,416	297,547
Long Term	95,520	102,616
Intermediate ⁶⁰	1,610,757	2,034,213
Long term ⁵⁸	<u>1,603,316</u>	<u>1,747,288</u>
Total Farm Liabilities	\$4,154,945	\$4,813,634
Nonfarm Liabilities ⁵⁹	<u>0</u>	<u>0</u>
Farm & Nonfarm Liabilities	\$4,154,945	\$4,813,634
Farm Net Worth (Equity Capital)	\$8,051,892	\$7,308,163
Farm & Nonfarm Net Worth	\$8,311,472	\$7,596,051
<u>FINANCIAL MEASURES</u>		<u>More than 900 Cows</u>
Percent equity		60%
Debt/asset ratio-long term		0.35
Debt/asset ratio-intermediate & current		0.43
Debt/asset ratio-total		0.40
Leverage ratio		0.66
Current ratio		1.66
Working capital as % of total expenses		11%
Accounts payable as % of total debt		5%
Long-term debt as % of total debt		36%
Cost of term debt (weighted average)		4.06%
Change in net worth with appreciation		\$-743,729
Total farm debt per cow		\$3,446
Debt payments made per cow		\$500
Debt payments as % of milk sales		14%
Amount available for debt service		\$208,138
Cash flow coverage ratio for 2009		0.36
Debt coverage ratio for 2009		-0.20

⁵⁸Includes discounted lease payments.⁵⁹Average of farms reporting nonfarm assets and liabilities for 2009.⁶⁰Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 54.

SELECTED BUSINESS FACTORS BY HERD SIZE
204 New York Dairy Farms, 2009

Item	Farms with:	Less than 60 Cows	60 to 99 Cows	100 to 199 Cows	200 to 399 Cows
Number of farms		20	28	40	27
<u>Cropping Program Analysis</u>					
Total Tillable acres		157	221	392	662
Tillable acres rented ⁶¹		78	81	180	354
Hay crop acres ⁶¹		126	152	245	340
Corn silage acres ⁶¹		18	40	86	207
Hay crop, tons DM/acre		2.6	2.3	2.6	3.1
Corn silage, tons/acre		15	15	17	17
Oats, bushels/acre		47	73	92	45
Forage DM per cow, tons		8.2	8.2	8.2	8.0
Tillable acres/cow		3.4	3.2	2.9	2.3
Fertilizer & lime expense/tillable acre		\$25.68	\$23.23	\$38.68	\$47.93
Total machinery costs		\$34,768	\$50,706	\$99,509	\$195,040
Machinery cost/tillable acre		\$213	\$200	\$248	\$289
<u>Dairy Analysis</u>					
Number of cows		48	78	138	291
Number of heifers		40	64	119	233
Milk sold, pounds		858,909	1,412,858	2,765,550	6,907,019
Milk sold/cow, pounds		17,805	18,114	19,978	23,702
Operating cost of producing milk/cwt.		\$12.08	\$12.83	\$13.21	\$13.25
Total cost of producing milk/cwt.		\$21.42	\$20.66	\$18.79	\$16.62
Price/cwt. milk sold		\$13.44	\$13.57	\$13.68	\$13.65
Purchased dairy feed/cow		\$902	\$1,123	\$1,103	\$1,350
Purchased dairy feed/cwt. milk		\$5.07	\$6.20	\$5.52	\$5.70
Purchased grain & concentrate as % of milk receipts		35%	40%	39%	39%
Purchased feed & crop expense/cwt. milk		\$5.99	\$7.00	\$6.65	\$6.62
Cull rate		27%	28%	32%	33%
<u>Capital Efficiency</u>					
Farm capital/worker		\$299,709	\$307,851	\$344,148	\$350,537
Farm capital/cow		\$11,742	\$10,420	\$10,292	\$8,420
Farm capital/tillable acre owned		\$7,203	\$5,801	\$6,711	\$7,966
Real estate/cow		\$6,048	\$4,992	\$4,727	\$3,225
Machinery investment/cow		\$2,342	\$1,906	\$1,970	\$1,608
Asset turnover ratio		0.26	0.29	0.32	0.47
<u>Labor Efficiency</u>					
Worker equivalent		1.90	2.64	4.14	7.00
Operator/manager equivalent		1.13	1.46	1.64	1.84
Milk sold/worker, lbs.		453,250	535,005	668,276	986,482
Cows/worker		25	30	33	42
Labor cost/cow		\$1,125	\$974	\$864	\$773
Labor cost/tillable acre		\$347	\$344	\$305	\$340

⁶¹Average of all farms, not only those reporting data.

Table 54. (cont'd)

SELECTED BUSINESS FACTORS BY HERD SIZE
204 New York Dairy Farms, 2009

Item	Farms with:	400 to 599 Cows	600 to 899 Cows	900 or More Cows
Number of farms		22	26	36
<u>Cropping Program Analysis</u>				
Total Tillable acres		1,204	1,401	2,510
Tillable acres rented ⁶²		721	732	1,178
Hay crop acres ⁶²		586	628	1,082
Corn silage acres ⁶²		396	574	1,021
Hay crop, tons DM/acre		3.0	3.5	3.9
Corn silage, tons/acre		17	19	20
Oats, bushels/acre		56	74	0
Forage DM per cow, tons		8.0	8.1	8.3
Tillable acres/cow		2.5	1.9	1.9
Fertilizer & lime exp./tillable acre		\$46.17	\$49.37	\$54.92
Total machinery costs		\$351,677	\$470,400	\$898,559
Machinery cost/tillable acre		\$292	\$336	\$349
<u>Dairy Analysis</u>				
Number of cows		489	726	1,368
Number of heifers		435	630	1,110
Milk sold, pounds		11,314,048	17,950,458	34,520,988
Milk sold/cow, pounds		23,118	24,729	25,229
Operating cost of producing milk/cwt.		\$13.47	\$13.56	\$13.98
Total cost of producing milk/cwt.		\$17.25	\$16.59	\$16.90
Price/cwt. milk sold		\$14.07	\$14.00	\$13.87
Purchased dairy feed/cow		\$1,291	\$1,357	\$1,348
Purchased dairy feed/cwt. milk		\$5.58	\$5.49	\$5.34
Purchased grain & concentrate as % of milk receipts		39%	37%	37%
Purchased feed & crop expense/cwt. milk		\$6.78	\$6.38	\$6.28
Cull rate		31%	34%	34%
<u>Capital Efficiency</u>				
Farm capital/worker		\$389,731	\$385,782	\$428,925
Farm capital/cow		\$9,492	\$8,833	\$8,890
Farm capital/tillable acre owned		\$9,616	\$9,592	\$9,130
Real estate/cow		\$4,092	\$3,352	\$3,618
Machinery investment/cow		\$1,628	\$1,597	\$1,428
Asset turnover ratio		0.41	0.46	0.46
<u>Labor Efficiency</u>				
Worker equivalent		11.92	16.62	28.36
Operator/manager equivalent		2.49	1.95	2.29
Milk sold/worker, lbs.		949,231	1,079,997	1,217,421
Cows/worker		41	44	48
Labor cost/cow		\$774	\$772	\$787
Labor cost/tillable acre		\$314	\$400	\$429

⁶²Average of all farms, not only those reporting data.

SUPPLEMENTAL INFORMATION

Comparisons of business performance by farms buying versus growing forages, types of housing and herd size, 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 milking 3x per day showed higher profitability. Is it exclusively higher milking rates or is it that farms milking more frequently would have higher profitability per cow if they milked less often? 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 2009, 8 participating farms purchased the majority of their feed, including all forages. On average, only 10 acres of crops were harvested by these farms. Table 55 highlights the income and expenses for these 8 farms compared to the income and expenses for 54 farms of similar size that grew their forages. Table 56 compares selected business factors for the two groups of farms. In 2009, the 8 farms buying forages had, on average, higher labor and management incomes per operator, rates of return on equity capital, and rates of return on all capital than the similar size farms growing forages. While pounds of milk sold per cow and milk receipts per cow were higher, operating costs of producing milk were also \$.19 per hundredweight higher.

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 57 on page 65 includes the average values for the resulting five groups of dairy farms. The average size in the five groups ranges from 48 cows on the small conventional farms to 881 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; however, in 2009, they had the lowest returns to labor, management and capital.

Farm business charts have been computed for each of the five housing and herd size categories and are on pages 66-70. 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. Each column of the farm business chart is independent of the others.

Intensive Grazing Farms vs. Non-Grazing Farms

In 2009, 27 of the DFBS cooperators practiced intensive grazing. Intensive grazing 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 63. The control group is a selection of non-grazing dairy farms of similar size. In 2009, average profitability was higher on intensive grazing farms. Operating costs of producing milk were \$.68 per hundredweight lower while total costs were \$.94 per hundredweight higher than the costs of production on the control farms. A publication containing detailed information on New York farms using intensive grazing is available from the Dyson School of Applied Economics and Management. An order form is included on the department website: <http://www.dyson.cornell.edu/outreach/order.php> or contact Linda Putnam (e-mail: ldp2@cornell.edu, phone: 607-255-8429).

Comparison of Data, Same Farms, 2000 - 2009

Follow ten years of growth, change and progress made by 79 New York DFBS farms in Table 64, pages 72 and 73. Milk receipts per hundredweight are higher by only \$.41 in 2009 when compared to 2000. Profitability in 2009 is significantly lower than in any other year in the ten-year period. 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, and there is considerable year-to-year variability in milk prices.

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 42 dairy farms selling less than 18,000 pounds of milk per cow, 53 farms with 18,000 to 21,999 pounds of milk sold per cow, and 109 dairy farms selling 22,000 pounds and more in Table 65 on page 74. Table 66 on page 75 provides the same list of average accrual receipts and expenses for 41 farms averaging less than 80 cows per farm, 47 farms with 80 to 180 cows and 116 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 for higher hired 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.

Comparison of Dairy Farm Business Data by Region

Average farm business summary data from five regions of the State are compared in Tables 67 and 68. The Western and Central Plateau Region averaged the highest profitability. The Western and Central Plain Region averaged the largest average farm size and highest average rate of milk production. Dairy farmers in this region have increased milk production 27.1 percent from 1999-2009 and they produced milk for an average total cost of \$17.07 per hundredweight in 2009. Total milk production has declined 6.4 percent from 1999-2009 in the Western and Central Plateau Region (Figure 2). However, this is the region with the highest return per hundredweight to labor, management and capital with \$-0.61. Central Valleys Region had the second highest return per hundredweight to labor, management and capital with \$-0.62.

Comparison of Farms by Milking Frequency

Forty-two percent of the 204 DFBS farms utilized three times per day (3X) milking in 2009. 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 69.

In 2009, the 3X farms averaged 4 more cows per farm, sold slightly less milk per cow, showed an average \$770,772 decrease in net farm income, and a decrease in total cost of producing milk by 8.5 percent compared to the 3X farm averages for 2008. The 2X farms decreased milk output per cow 3.4 percent, average net farm income decreased by \$155,080, and total production costs decreased by \$1.60 per hundredweight in 2009 compared to 2008.

The 3X farms averaged 25.7 percent more milk per cow and 42.9 percent additional milk per worker in 2009 compared with the 2X farms. Similar differences were found in 2008. In 2009, the average total cost of producing milk was 9.6 percent lower on 3X farms than on 2X dairies. On the average, farmers milking 3X sold more milk per cow and per worker, produced milk at lower costs per hundredweight; however, in 2009, they did not receive 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 indicates there are other important management differences contributing to higher profits.

Other Comparisons

Twelve dairy renter farms were smaller, on average, but averaged higher labor and management incomes than the average for 204 owned dairy farms (Table 70). A forthcoming publication contains detailed information on New York dairy renters (see <http://www.dyson.cornell.edu/outreach/order.php>). Data for the top 10 percent of farms by rate of return on all capital without appreciation is presented in Table 71. Additional data for the top 10 percent of farms is presented in many of the first 46 tables of this publication. Summary data for the 204 specialized dairy farms are presented in Table 72.

Table 55.

**INCOME & EXPENSE COMPARISON FOR
FARMS BUYING MAJORITY OF FORAGES VERSUS SIMILAR SIZE FARMS GROWING FORAGES
New York State Dairy Farms, 2009**

Item	8 Farms Buying Majority of Forages		54 Similar Size Farms Growing Forages	
Number of cows per farm	218		215	
Pounds of milk sold	5,003,575		4,812,156	
<u>Income</u>	<u>Per Cow</u>	<u>Per Cwt.</u>	<u>Per Cow</u>	<u>Per Cwt.</u>
Milk sold	\$3,244	\$14.14	\$3,074	\$13.70
Dairy cattle	235	1.02	273	1.22
Dairy calves	81	0.35	21	0.09
Other livestock	7	0.03	2	0.01
Crops	7	0.03	29	0.13
Miscellaneous	<u>208</u>	<u>0.91</u>	<u>368</u>	<u>1.64</u>
Total Accrual Receipts	\$3,783	\$16.49	\$3,768	\$16.80
<u>Expenses</u>				
Hired labor	\$ 328	\$ 1.43	\$ 510	\$ 2.27
Dairy grain & concentrate	1,232	5.37	1,179	5.26
Dairy roughage	650	2.83	37	0.17
Nondairy	4	0.02	1	0.00
Professional nutritional services	0	0.00	1	0.00
Machinery hire, rent/lease	46	0.20	138	0.62
Machinery repairs/vehicle expense.	113	0.49	162	0.72
Fuel, oil & grease	71	0.31	150	0.67
Replacement livestock	226	0.99	18	0.08
Breeding	35	0.15	59	0.26
Veterinary & medicine	97	0.42	129	0.58
Milk marketing	171	0.75	210	0.93
Bedding	45	0.20	71	0.31
Milking supplies	67	0.29	78	0.35
Cattle lease/rent	12	0.05	5	0.02
Custom boarding	75	0.33	44	0.19
bST expense	8	0.03	32	0.14
Livestock professional fees	11	0.05	17	0.08
Other livestock expenses	24	0.10	29	0.13
Fertilizer & lime	0	0.00	109	0.49
Seeds & plants	4	0.02	74	0.33
Spray, other crop expenses	0	0.00	49	0.22
Crop professional fees	0	0.00	7	0.03
Land/bldg/fence repair	23	0.10	54	0.24
Taxes	29	0.13	65	0.29
Rent & lease	9	0.04	54	0.24
Insurance	37	0.16	47	0.21
Utilities	96	0.42	105	0.47
Interest paid	153	0.67	117	0.52
Other professional fees	28	0.12	17	0.08
Miscellaneous	<u>5</u>	<u>0.02</u>	<u>23</u>	<u>0.10</u>
Total Operating Expenses	\$3,597	\$15.68	\$3,591	\$16.00
Expansion livestock	0	0.00	52	0.23
Extraordinary expense	0	0.00	8	0.03
Machinery depreciation	139	0.61	165	0.73
Building depreciation	<u>155</u>	<u>0.68</u>	<u>98</u>	<u>0.44</u>
Total Accrual Expenses	\$3,891	\$16.96	\$3,913	\$17.44
Net Farm Income (without appreciation)	\$ -108	\$ -0.47	\$ -145	\$ -0.65

Table 56.

**SELECTED BUSINESS FACTORS FOR FARMS BUYING MAJORITY OF FORAGES
VERSUS SIMILAR SIZE FARMS GROWING FORAGES
New York Dairy Farms, 2009**

Selected Factors	8 Farms Buying Majority of Forages	54 Similar Size Farms Growing Forages
<u>Size of Business</u>		
Average number of cows	218	215
Average number of heifers	106	181
Milk sold, lbs.	5,003,575	4,812,156
Worker equivalent	3.89	5.65
Total tillable acres	80	548
Tillable acres harvested	10	531
<u>Rates of Production</u>		
Milk sold per cow, lbs.	22,939	22,434
Hay DM per acre, tons	0.0	2.9
Corn silage per acre, tons	0.0	16.7
<u>Labor Efficiency & Costs</u>		
Cows per worker	56	38
Milk sold/worker, lbs.	1,286,542	852,463
Hired labor cost/cwt.	\$1.43	\$2.27
Hired labor cost/worker	\$40,751	\$30,927
Hired labor cost as % of milk sales	10.1%	16.6%
<u>Cost Control</u>		
Grain & concentrate purchased as % of milk sales	40%	39%
Grain & concentrate per cwt. milk	\$5.37	\$5.26
Dairy feed & crop expense per cwt. milk	\$8.22	\$6.49
Labor & machinery costs/cow	\$1,037	\$1,504
Total farm operating costs per cwt. sold	\$15.68	\$16.00
Interest costs per cwt. milk	\$0.67	\$0.52
Milk marketing costs per cwt. milk sold	\$0.75	\$0.93
Operating cost of producing cwt. of milk	\$13.33	\$13.14
<u>Capital Efficiency</u> (average for the year)		
Farm capital per cow	\$7,248	\$9,107
Machinery & equipment per cow	\$937	\$1,697
Asset turnover ratio	0.53	0.41
<u>Income Generation</u>		
Gross milk sales per cow	\$3,244	\$3,074
Gross milk sales per cwt.	\$14.14	\$13.70
Net milk sales per cwt.	\$13.40	\$12.77
Dairy cattle sales per cow	\$235	\$273
Dairy calf sales per cow	\$81	\$21
<u>Profitability</u>		
Net farm income without appreciation	\$-23,602	\$-31,075
Net farm income with appreciation	\$-10,078	\$-44,239
Labor & management income per operator/manager	\$-49,355	\$-58,174
Rate of return on equity capital without appreciation	-11.3%	-7.9%
Rate of return on all capital without appreciation	-3.9%	-4.1%
<u>Cash flow</u>		
Principal & interest payments per cow, 2009	\$716	\$448
Net cash flow	\$108,376	\$73,396
<u>Financial Summary</u>		
Farm net worth, end year	\$805,942	\$1,274,949
Farm net worth change from last year, %	-6.9%	-6.4%
Debt to asset ratio	0.49	0.35
Farm debt per cow	\$3,429	\$3,077

Table 57.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE
209 New York Dairy Farms, 2009

Item	Farms with:	Conventional		Freestall		
		<= 60 Cows	>60 Cows	<=150 Cows	151-300 Cows	≥300 Cows
Number of farms		23	25	27	24	92
<u>Cropping Program Analysis</u>						
Total Tillable acres		153	327	239	556	1,711
Tillable acres rented ⁶³		82	132	113	250	878
Hay crop acres ⁶³		123	228	150	319	768
Corn silage acres ⁶³		18	53	57	139	681
Hay crop, tons DM/acre		2.3	2.2	2.6	2.7	3.6
Corn silage, tons/acre		16	13.3	16.1	18.6	19.0
Oats, bushels/acre		45	73	79	55	67
Forage DM per cow, tons		8.4	8.1	7.9	8.3	8.3
Tillable acres/cow		3.3	3.5	2.7	2.7	2.0
Fertilizer & lime expense/tillable acre		\$27.94	\$26.51	\$33.97	\$54.76	\$48.73
Total machinery costs		\$34,204	\$61,040	\$70,419	\$158,061	\$585,211
Machinery cost/tillable acre		\$214	\$187	\$243	\$284	\$336
<u>Dairy Analysis</u>						
Number of cows		48	93	103	210	881
Number of heifers		40	79	84	179	734
Milk sold, lbs.		854,175	1,713,249	1,981,491	4,605,848	22,034,738
Milk sold/cow, lbs.		17,844	18,446	19,328	21,928	25,024
Operating cost of producing milk/cwt.		\$12.16	\$13.13	\$12.42	\$13.03	\$13.81
Total cost of producing milk/cwt.		\$21.52	\$20.43	\$18.51	\$17.65	\$16.82
Price/cwt. milk sold		\$13.44	\$13.45	\$13.81	\$13.71	\$13.90
Purchased dairy feed/cow		\$891	\$1,044	\$1,207	\$1,155	\$1,358
Purchased dairy feed/cwt. milk		\$5.00	\$5.66	\$6.24	\$5.27	\$5.43
Purchased grain & concentrate as % of milk receipts		35%	41%	39%	38%	38%
Purchased feed & crop expense/cwt milk		\$5.99	\$6.58	\$7.21	\$6.36	\$6.38
<u>Capital Efficiency</u>						
Farm capital/worker		\$296,563	\$325,893	\$313,395	\$368,757	\$405,869
Farm capital/cow		\$11,523	\$11,298	\$9,538	\$9,481	\$8,905
Farm capital/tillable acre owned		\$7,765	\$5,385	\$7,760	\$6,504	\$9,408
Real estate/cow		\$5,772	\$5,506	\$4,368	\$3,994	\$3,563
Machinery investment/cow		\$2,383	\$2,200	\$1,763	\$1,741	\$1,505
Asset turnover ratio		0.26	0.26	0.34	0.38	0.46
<u>Labor Efficiency</u>						
Worker equivalent		1.86	3.22	3.11	5.41	19.32
Operator/manager equivalent		1.09	1.47	1.52	2.01	2.14
Milk sold/worker, lbs.		458,823	531,652	636,283	852,014	1,140,662
Cows/worker		26	29	33	39	46
Labor cost/cow		\$1,124	978	\$862	\$800	\$787
Labor cost/tillable acre		\$352	\$278	\$370	\$302	\$405
<u>Profitability & Balance Sheet Analysis</u>						
Net farm income (without appreciation)		\$-2,315	\$-16,922	\$-1,745	\$-28,801	\$-260,522
Labor & management income/operator		\$-31,550	\$-47,833	\$-29,326	\$-49,465	\$-239,395
Rate return on all capital with appreciation		-7.0%	-6.9%	-5.0%	-4.9%	-3.2%
Farm debt/cow		\$2,661	\$3,160	\$2,921	\$3,177	\$3,388
Percent equity		77%	72%	68%	66%	61%

⁶³Average of all farms, not only those reporting data.

Table 58.

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS
23 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of 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
2.75	57	1,166,624	23,699	4.5	22	41	814,988
2.48	55	1,054,704	22,630	3.5	20	35	700,081
2.22	52	1,027,653	21,999	2.8	20	31	627,340
2.04	51	1,019,893	20,747	2.4	19	31	569,357
2.00	51	1,002,706	19,706	2.3	18	29	531,012

1.79	50	965,943	18,647	2.2	16	26	469,700
1.63	47	900,255	18,247	2.0	15	25	432,381
1.58	46	736,147	15,835	1.8	15	24	391,392
1.50	43	630,256	13,205	1.7	12	21	312,985
1.25	37	423,753	10,155	1.5	7	18	232,739

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		
\$366	21%	\$444	\$1,265	\$466	\$4.26		
622	28	528	1,482	827	4.74		
715	33	607	1,659	925	5.45		
798	36	645	1,746	1,016	6.07		
881	37	666	1,868	1,077	6.31		

938	39	754	1,991	1,173	6.46		
955	40	794	2,120	1,263	6.56		
1,054	40	879	2,160	1,319	6.86		
1,107	43	938	2,263	1,456	7.02		
1,269	44	1,126	2,473	1,633	7.49		

Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$3,220	\$7.64	\$16.31	\$44,417	\$931	\$10,108	\$60,332	
3,074	10.10	18.97	30,319	617	-6,583	34,450	
2,878	11.11	20.13	16,506	327	-12,640	26,646	
2,804	11.35	20.62	10,951	212	-21,467	10,692	
2,660	12.26	21.20	4,899	92	-23,274	1,252	

2,528	12.90	22.42	1,350	30	-26,611	-3,844	
2,404	13.41	23.00	-2,281	-53	-35,102	-9,513	
2,174	13.59	25.02	-10,140	-225	-37,137	-17,266	
1,774	14.46	27.53	-20,302	-415	-50,867	-24,671	
1,322	19.81	34.87	-58,077	-1,274	-75,119	-38,682	

Table 59.

FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
25 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of 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
6.20	151	3,110,205	24,463	4.4	27	64	961,921
4.65	133	2,347,372	22,085	3.6	25	43	801,367
4.04	120	2,244,457	21,533	3.2	19	41	698,749
3.64	105	2,129,390	20,958	2.7	17	35	660,705
3.53	99	1,968,372	20,320	2.6	15	32	646,832

3.16	85	1,671,792	19,100	2.4	15	30	579,244
2.91	79	1,463,721	17,581	2.2	12	28	530,941
2.62	75	1,320,625	15,975	2.0	9	26	483,325
2.06	67	1,036,449	14,505	1.7	8	22	357,151
1.41	64	917,955	12,439	1.1	6	18	292,357

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		
\$586	24%	\$307	\$1,056	\$711	\$4.58		
812	33	448	1,146	985	5.66		
885	37	514	1,344	1,108	6.08		
935	39	574	1,474	1,186	6.32		
992	42	643	1,661	1,279	6.72		

1,093	44	697	1,745	1,333	7.06		
1,141	45	761	1,911	1,382	7.48		
1,181	48	814	2,012	1,454	7.83		
1,199	52	847	2,232	1,533	7.98		
1,442	61	1,124	2,506	1,557	9.35		

Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$3,406	\$8.50	\$15.78	\$71,365	\$653	\$-3,608	\$154,271	
3,074	11.50	18.04	24,951	362	-20,187	35,152	
2,918	12.37	19.17	16,883	204	-24,084	16,525	
2,739	13.03	20.71	9,331	107	-25,483	-3,254	
2,720	13.82	21.78	-6,950	-84	-29,384	-14,599	

2,605	14.27	22.40	-20,299	-201	-37,412	-23,170	
2,300	15.29	22.87	-27,719	-327	-52,118	-28,093	
2,175	15.98	23.43	-42,035	-459	-64,432	-50,046	
1,912	16.12	23.86	-53,888	-602	-90,066	-87,164	
1,695	16.80	27.23	-74,128	-768	-138,716	-130,673	

Table 60.

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
27 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds of 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
4.46	148	3,266,103	25,870	4.7	21	46	1,035,790
4.22	138	2,853,280	23,508	4.5	19	39	872,668
3.96	132	2,555,275	22,143	3.8	18	36	746,248
3.55	122	2,428,802	20,385	3.1	18	35	677,152
3.35	107	2,104,906	20,109	2.8	17	34	647,301

3.12	100	1,911,494	19,133	2.7	17	33	617,446
2.87	95	1,719,822	18,025	2.5	15	32	589,966
2.61	86	1,484,959	17,310	2.3	15	31	546,787
2.29	74	1,300,764	16,502	1.8	14	29	501,267
1.85	61	1,099,570	13,877	1.5	9	26	426,547

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		
\$467	21%	\$314	\$1,023	\$787	\$4.48		
769	30	479	1,273	1,128	5.87		
896	34	514	1,380	1,210	6.43		
987	38	545	1,449	1,250	6.80		
1,069	40	607	1,507	1,293	7.18		

1,119	43	698	1,569	1,449	7.51		
1,172	45	749	1,658	1,564	7.91		
1,319	47	833	1,769	1,649	8.79		
1,415	51	910	1,864	1,774	9.06		
1,614	53	935	1,985	2,386	11.07		

Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$3,523	\$8.77	\$15.39	\$66,096	\$703	\$7,874	\$68,524	
3,279	10.02	15.68	45,760	439	7,181	43,616	
3,072	10.81	17.07	41,317	385	1,281	20,745	
2,880	11.65	17.91	32,225	302	-13,034	679	
2,764	12.26	18.43	22,419	203	-14,720	-19,767	

2,569	13.18	18.92	11,144	121	-33,906	-40,170	
2,423	13.81	19.94	-14,163	-183	-45,973	-49,207	
2,337	14.52	22.96	-36,946	-350	-55,457	-57,158	
2,287	14.84	23.70	-54,221	-482	-63,526	-85,191	
1,983	16.03	25.89	-78,278	-876	-83,719	-136,978	

Table 61.

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS
24 Freestall Barn Dairy Farms with 151-300 Cows, New York, 2009

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	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
7.58	280	6,849,434	26,596	5.8	29	56	1,243,719
6.91	265	6,097,648	26,305	4.3	25	54	1,163,088
6.42	240	5,577,970	24,339	3.7	24	51	1,068,305
5.78	227	5,372,848	24,043	3.1	21	48	976,836
5.52	215	5,142,677	23,447	2.9	19	44	939,448

5.34	206	4,482,464	22,408	2.5	18	39	814,575
5.13	200	4,248,858	20,963	2.3	17	36	788,885
4.96	185	3,975,199	20,224	2.2	15	35	742,622
4.37	175	3,436,860	18,181	2.1	12	31	650,544
3.75	166	2,837,173	16,409	1.6	8	27	596,333

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		
\$768	26%	\$519	\$1,102	\$935	\$5.04		
849	29	584	1,212	1,159	5.32		
920	32	634	1,450	1,262	5.53		
1,051	36	692	1,531	1,321	6.29		
1,184	39	755	1,581	1,375	6.64		

1,226	42	769	1,607	1,511	6.77		
1,282	43	789	1,670	1,556	7.12		
1,310	45	816	1,723	1,573	7.30		
1,378	50	983	1,942	1,613	7.40		
1,628	52	1,344	2,392	1,955	8.20		

Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$3,700	\$10.05	\$14.18	\$223,400	\$893	\$66,995	\$66,133	
3,516	10.87	15.96	115,179	458	6,815	6,362	
3,405	11.66	16.54	70,222	363	-4,802	-35,701	
3,382	12.10	17.38	37,526	187	-20,875	-59,710	
3,308	12.83	17.76	-2,170	-9	-36,805	-84,042	

3,047	14.46	18.40	-36,917	-173	-57,667	-90,400	
2,880	14.78	19.08	-53,573	-294	-74,549	-108,938	
2,699	14.91	20.32	-92,589	-472	-98,045	-139,590	
2,454	16.40	21.78	-128,081	-555	-128,394	-204,765	
2,245	19.53	24.68	-227,656	-1,208	-222,738	-242,405	

Table 62.

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
92 Freestall Barn Dairy Farms with 300 or More Cows, New York, 2009

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
41.78	2,143	56,150,342	28,614	5.9	26	63	1,607,559
29.50	1,301	33,356,512	26,931	4.6	23	53	1,315,236
23.66	1,084	27,294,228	26,276	4.2	21	50	1,233,968
21.32	936	23,124,149	25,815	3.9	20	48	1,168,917
18.51	816	20,257,627	25,133	3.6	19	47	1,121,327

16.17	696	17,283,563	24,540	3.4	18	44	1,076,082
14.05	616	14,313,270	23,967	3.1	17	42	1,031,329
12.57	513	12,324,387	23,353	2.9	16	40	980,946
10.33	445	10,402,631	22,582	2.6	15	37	920,130
7.60	362	8,623,291	20,199	1.9	13	33	791,677

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		
\$1,735	28%	\$441	\$1,115	\$1,203	\$4.99		
1,522	32	555	1,252	1,380	5.63		
1,446	33	593	1,339	1,446	5.88		
1,372	36	631	1,381	1,507	6.11		
1,294	37	661	1,432	1,558	6.30		

1,258	38	685	1,470	1,620	6.56		
1,212	40	709	1,512	1,688	6.83		
1,157	42	751	1,583	1,755	7.12		
1,074	44	797	1,675	1,834	7.49		
907	50	890	1,872	2,115	8.65		

Value and Cost of Production			Profitability				
Milk Receipts Per Cow	Operating Cost Producing Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income Without Appreciation		Labor & Mgmt. Income Per Operator	Change in Net Worth w/Appreciation	
			Total	Per Cow			
\$4,050	\$11.23	\$14.31	\$267,895	\$335	\$30,240	\$195,183	
3,782	12.23	15.39	81,042	118	-49,213	-11,763	
3,648	12.62	15.91	13,375	22	-87,226	-83,254	
3,561	13.08	16.29	-40,315	-65	-117,198	-190,702	
3,494	13.49	16.70	-97,798	-146	-166,437	-262,591	

3,395	13.90	17.14	-206,354	-246	-212,462	-313,100	
3,319	14.37	17.50	-310,032	-432	-266,975	-399,069	
3,234	14.82	18.15	-411,532	-545	-374,959	-609,554	
3,087	15.71	18.66	-584,504	-640	-503,718	-855,267	
2,865	16.60	19.36	-1,178,954	-920	-1,046,215	-1,681,781	

Table 63.

INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS
New York State Dairy Farms, 2009

Item	All Intensive Grazing Farms ⁶⁴	Non-Grazing Farms ⁶⁵
Number of farms	27	82
<u>Business Size & Production</u>		
Number of cows	144	146
Number of heifers	118	123
Milk sold, pounds	2,286,177	3,204,376
Milk sold per cow, pounds	15,884	21,946
Milk plant test, % butterfat ⁶⁶	3.9%	3.7%
Cull rate	23%	33%
Tillable acres, total	333	391
Hay crop, tons DM per acre	2.2	2.7
Corn silage, tons per acre	15.6	17.1
Forage dry matter per cow, tons ⁶⁷	4.8	8.6
<u>Labor & Capital Efficiency</u>		
Worker equivalent	3.22	4.23
Milk sold per worker, pounds	709,259	758,283
Cows per worker	45	35
Farm capital per worker	\$371,636	\$340,127
Farm capital per cow	\$8,314	\$9,854
Farm capital per cwt. milk	\$52	\$45
Machinery and equipment per cow	\$1,418	\$1,860
<u>Milk Production Costs & Returns</u>		
Selected costs per cwt.:		
Hired labor	\$1.66	\$2.06
Grain & concentrate	\$4.72	\$5.24
Purchased roughage	\$0.80	\$0.36
Replacements purchased	\$0.00	\$0.09
Vet & medicine	\$0.41	\$0.58
Milk marketing	\$0.99	\$0.93
Other dairy expenses	\$1.16	\$1.52
Operating cost of producing milk per cwt.	\$12.39	\$13.07
Total labor cost per cwt.	\$4.24	\$3.97
Owner and operator resources per cwt.	\$4.33	\$3.26
Total cost of producing milk per cwt.	\$18.79	\$17.85
Average farm price per cwt.	\$14.04	\$13.71
<u>Related Cost Factors</u>		
Hired labor/cow	\$264	\$453
Total labor/cow	\$674	\$872
Purchased dairy feed/cow	\$876	\$1,229
Purchased grain & concentrate as % of milk receipts	35%	39%
Veterinary & medicine/cow	\$64	\$127
Machinery costs/cow	\$567	\$698
Feed & crop expenses/cwt.	\$6.66	\$6.56
<u>Profitability Analysis</u>		
Net farm income (with appreciation)	\$3,419	\$-26,272
Net farm income (without appreciation)	\$-857	\$-20,355
Net farm income per cow (without appreciation)	\$-6	\$-139
Net farm income per cwt. (without appreciation)	\$-0.04	\$-0.64
Labor & management income per operator	\$-34,934	\$-49,343
Labor & management income per operator per cow	\$-243	\$-338
Rates of return on:		
Equity capital with appreciation	-7.3%	-9.3%
All capital with appreciation	-4.0%	-5.0%

⁶⁴Farms grazing at least three months of year, changing paddock at least every three days, forage from pasture at least 30 percent, and no organic farms.

⁶⁵Farms with similar herd size as the 27 rotational grazing farms.

⁶⁶Average of farms reporting this data.

⁶⁷Average of farms that grow forages.

Table 64.

COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 79 New York Dairy Farms, 2000 -- 2009

Selected Factors	2000	2001	2002	2003
Milk receipts per cwt. milk	\$13.58	\$16.05	\$13.01	\$13.31
<u>Size of Business</u>				
Average number of cows	348	377	403	422
Average number of heifers	262	280	310	324
Milk sold, cwt.	78,771	85,907	93,622	97,400
Worker equivalent	8.17	8.79	9.33	9.87
Total tillable acres	711	740	783	828
<u>Rates of Production</u>				
Milk sold per cow, lbs.	22,610	22,792	23,255	23,075
Hay DM per acre, tons	3.7	3.2	3.4	3.4
Corn silage per acre, tons	16	17	15	18
<u>Labor Efficiency</u>				
Cows per worker	43	43	43	43
Milk sold per worker, lbs.	964,151	977,327	1,003,454	986,830
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	27%	25%	30%	31%
Dairy feed & crop expense per cwt. milk	\$4.61	\$5.01	\$4.82	\$5.03
Operating cost of producing cwt. milk	\$11.05	\$11.92	\$11.00	\$11.43
Total cost of producing cwt. milk	\$13.96	\$14.94	\$14.03	\$14.32
Hired labor cost per cwt.	\$2.40	\$2.55	\$2.56	\$2.62
Interest paid per cwt.	\$0.88	\$0.76	\$0.55	\$0.52
Labor & machinery costs per cow	\$1,190	\$1,263	\$1,244	\$1,238
Replacement livestock expense	\$17,400	\$14,326	\$14,105	\$15,192
Expansion livestock expense	\$26,100	\$27,898	\$26,598	\$23,210
<u>Capital Efficiency</u>				
Farm capital per cow	\$6,295	\$6,490	\$6,615	\$6,626
Machinery & equipment per cow	\$1,175	\$1,161	\$1,178	\$1,135
Real estate per cow	\$2,372	\$2,471	\$2,489	\$2,561
Livestock investment per cow	\$1,574	\$1,680	\$1,787	\$1,816
Asset turnover ratio	0.59	0.69	0.57	0.57
<u>Profitability</u>				
Net farm income without appreciation	\$90,365	\$243,210	\$54,902	\$57,058
Net farm income with appreciation	\$134,822	\$365,375	\$131,048	\$132,636
Labor & management income per operator/manager	\$14,519	\$94,752	\$-14,915	\$-17,291
Rate return on:				
Equity capital with appreciation	5.2%	20.3%	3.6%	3.6%
All capital with appreciation	6.1%	14.5%	4.1%	3.9%
All capital without appreciation	4.2%	9.5%	1.2%	1.2%
<u>Financial Summary, End Year</u>				
Farm net worth	\$1,253,444	\$1,552,665	\$1,566,194	\$1,622,416
Change in net worth with appreciation	\$32,179	\$247,636	\$9,211	\$49,590
Debt to asset ratio	0.44	0.40	0.42	0.44
Farm debt per cow	\$2,723	\$2,691	\$2,773	\$2,937

Table 64. (continued)

COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 79 New York Dairy Farms, 2000 -- 2009

2004	2005	2006	2007	2008	2009
\$16.78	\$16.05	\$13.88	\$20.44	\$19.39	\$13.99
449	470	493	515	528	552
339	368	389	408	436	461
102,574	111,155	116,656	122,421	128,450	135,063
10.38	10.81	11.14	11.60	11.95	12.46
880	904	929	997	1,041	1,081
22,834	23,667	23,661	23,779	24,326	24,472
3.4	3.4	3.4	3.1	3.6	3.4
18	19	19	19	20	19
43	43	44	44	44	44
988,193	1,028,257	1,047,184	1,055,356	1,074,893	1,083,971
28%	26%	29%	24%	31%	38%
\$5.67	\$5.18	\$5.09	\$6.20	\$7.39	\$6.57
\$12.37	\$12.11	\$12.13	\$13.89	\$15.41	\$13.88
\$15.37	\$15.21	\$15.15	\$17.02	\$18.73	\$17.08
\$2.73	\$2.64	\$2.65	\$2.77	\$2.90	\$2.74
\$0.51	\$0.60	\$0.73	\$0.74	\$0.55	\$0.53
\$1,306	\$1,349	\$1,341	\$1,460	\$1,617	\$1,441
\$22,001	\$19,270	\$10,846	\$14,420	\$17,952	\$9,384
\$33,675	\$18,800	\$17,748	\$10,815	\$31,152	\$18,216
\$6,796	\$7,292	\$7,545	\$7,981	\$8,776	\$8,784
\$1,136	\$1,232	\$1,275	\$1,333	\$1,507	\$1,564
\$2,602	\$2,707	\$2,840	\$2,960	\$3,231	\$3,361
\$1,863	\$2,020	\$2,114	\$2,230	\$2,341	\$2,264
0.69	0.65	0.55	0.73	0.64	0.47
\$311,435	\$279,709	\$52,141	\$639,269	\$330,278	\$-161,514
\$438,027	\$463,657	\$165,620	\$829,385	\$422,776	\$-113,525
\$131,988	\$98,381	\$-39,432	\$286,515	\$96,208	\$-165,991
20.2%	18.0%	3.5%	27.9%	10.8%	-7.3%
13.5%	13.1%	4.5%	20.3%	8.7%	-3.0%
9.4%	7.8%	1.4%	15.6%	6.7%	-4.0%
\$1,953,528	\$2,291,038	\$2,338,528	\$2,989,050	\$3,154,827	\$2,885,824
\$326,589	\$329,775	\$31,632	\$661,004	\$161,172	\$-257,243
0.39	0.37	0.39	0.33	0.35	0.41
\$2,762	\$2,747	\$2,908	\$2,793	\$3,084	\$3,499

Table 65.

**FARM RECEIPTS AND EXPENSES PER COW AND PER
HUNDREDWEIGHT FOR THREE LEVELS OF MILK PRODUCTION
204 New York Dairy Farms, 2009**

Item	42 Dairy Farms Milk/Cow <18,000#		53 Dairy Farms Milk/Cow 18,000-21,999#		109 Dairy Farms Milk/Cow ≥22,000#	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<u>ACCRUAL RECEIPTS</u>						
Milk sales	\$2,108	\$14.22	\$2,876	\$13.88	\$3,541	\$13.87
Dairy cattle	145	0.98	247	1.19	270	1.06
Dairy calves	29	0.19	19	0.09	38	0.15
Other livestock	47	0.32	8	0.04	5	0.02
Crops	-22	-0.15	49	0.24	35	0.14
Government receipts	206	1.39	200	0.96	128	0.50
All other	<u>55</u>	<u>0.37</u>	<u>74</u>	<u>0.35</u>	<u>85</u>	<u>0.33</u>
TOTAL ACCRUAL RECEIPTS	\$2,568	\$17.33	\$3,472	\$16.75	\$4,102	\$16.07
<u>ACCRUAL EXPENSES</u>						
<u>Labor:</u> Hired	\$ 273	\$ 1.84	\$ 570	\$ 2.75	\$ 696	\$ 2.72
<u>Feed:</u> Dairy grain & concentrate	771	5.20	1,082	5.22	1,321	5.18
Dairy roughage	99	0.67	32	0.15	68	0.26
Nondairy	1	0.01	0	0.00	0	0.00
Professional nutritional services	1	0.00	0	0.00	1	0.00
<u>Machinery:</u> Mach. hire, rent & lease	86	0.58	67	0.32	85	0.33
Machinery repairs & vehicle expense	123	0.83	195	0.94	177	0.69
Fuel, oil & grease	95	0.64	145	0.70	140	0.55
<u>Livestock:</u> Replacement livestock	5	0.03	4	0.02	17	0.07
Breeding	28	0.19	44	0.21	53	0.21
Vet & medicine	70	0.47	147	0.71	159	0.62
Milk marketing	150	1.01	185	0.89	222	0.87
Bedding	38	0.26	48	0.23	90	0.35
Milking supplies	61	0.41	94	0.45	95	0.37
Cattle lease & rent	5	0.04	2	0.01	3	0.01
Custom boarding	22	0.15	44	0.21	99	0.39
bST expense	6	0.04	6	0.03	68	0.27
Livestock professional fees	6	0.04	15	0.07	11	0.04
Other livestock expense	32	0.22	18	0.09	19	0.07
<u>Crops:</u> Fertilizer & lime	88	0.59	156	0.75	89	0.35
Seeds & plants	36	0.25	79	0.38	89	0.35
Spray & other crop expense	32	0.22	46	0.22	45	0.18
Crop professional fees	8	0.06	4	0.02	6	0.02
<u>Real Estate:</u> Land, building & fence repair	30	0.20	54	0.26	57	0.22
Taxes	67	0.45	51	0.25	51	0.20
Rent & lease	36	0.24	69	0.33	58	0.23
<u>Other:</u> Insurance	51	0.35	45	0.22	40	0.16
Utilities (farm share)	82	0.55	88	0.43	93	0.37
Interest paid	129	0.87	115	0.55	124	0.48
Other professional fees	9	0.06	18	0.09	25	0.10
Miscellaneous	<u>20</u>	<u>0.14</u>	<u>31</u>	<u>0.15</u>	<u>22</u>	<u>0.09</u>
TOTAL OPERATING EXPENSES	\$2,467	\$16.62	\$3,454	\$16.66	\$4,022	\$15.75
Expansion livestock	25	0.17	23	0.11	32	0.12
Extraordinary expense	3	0.02	4	0.02	1	0.01
Machinery depreciation	145	0.98	200	0.96	186	0.73
Building depreciation	<u>96</u>	<u>0.65</u>	<u>95</u>	<u>0.46</u>	<u>133</u>	<u>0.52</u>
TOTAL ACCRUAL EXPENSES	\$2,737	\$18.44	\$3,777	\$18.22	\$4,373	\$17.13

Table 66.

**FARM RECEIPTS AND EXPENSES PER COW AND PER
HUNDREDWEIGHT FOR THREE HERD SIZE CATEGORIES
204 New York Dairy Farms, 2009**

Item	41 Dairy Farms with <80 Cows		47 Dairy Farms with 80-180 Cows		116 Dairy Farms with ≥ 180 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<u>ACCRUAL RECEIPTS</u>						
Milk sales	\$2,432	\$13.55	\$2,633	\$13.71	\$3,432	\$13.90
Dairy cattle	171	0.95	130	0.68	270	1.09
Dairy calves	15	0.08	14	0.07	37	0.15
Other livestock	10	0.06	4	0.02	8	0.03
Crops	19	0.11	-1	0.00	36	0.15
Government receipts	281	1.56	304	1.58	129	0.52
All other	<u>77</u>	<u>0.43</u>	<u>63</u>	<u>0.33</u>	<u>83</u>	<u>0.34</u>
TOTAL ACCRUAL RECEIPTS	\$3,004	\$16.74	\$3,147	\$16.39	\$3,995	\$16.18
<u>ACCRUAL EXPENSES</u>						
Labor: Hired	\$ 155	\$ 0.86	\$ 329	\$ 1.71	\$ 687	\$ 2.78
Feed: Dairy grain & concentrate	886	4.94	1,040	5.42	1,278	5.17
Dairy roughage	142	0.79	60	0.31	63	0.25
Nondairy	0	0.00	1	0.01	0	0.00
Professional nutritional services	0	0.00	1	0.00	1	0.00
Machinery: Mach. hire, rent & lease	58	0.33	76	0.39	84	0.34
Mach. repairs & vehicle expense	176	0.98	177	0.92	176	0.71
Fuel, oil & grease	117	0.65	143	0.74	138	0.56
Livestock: Replacement livestock	4	0.02	6	0.03	16	0.06
Breeding	48	0.27	40	0.21	51	0.21
Vet & medicine	78	0.43	104	0.54	157	0.64
Milk marketing	212	1.18	191	0.99	214	0.87
Bedding	30	0.17	37	0.19	85	0.34
Milking supplies	95	0.53	80	0.42	93	0.38
Cattle lease & rent	0	0.00	6	0.03	3	0.01
Custom boarding	25	0.14	22	0.12	92	0.37
bST expense	11	0.06	18	0.09	59	0.24
Livestock professional fees	12	0.07	11	0.06	11	0.05
Other livestock expense	55	0.30	45	0.23	17	0.07
Crops: Fertilizer & lime	64	0.36	79	0.41	101	0.41
Seeds & plants	36	0.20	58	0.30	87	0.35
Spray & other crop expense	33	0.18	49	0.26	45	0.18
Crop professional fees	5	0.03	7	0.04	6	0.02
Real Estate: Land, building & fence repair	44	0.24	42	0.22	56	0.23
Taxes	92	0.51	72	0.38	50	0.20
Rent & lease	35	0.20	32	0.16	61	0.25
Other: Insurance	69	0.38	59	0.31	40	0.16
Utilities (farm share)	127	0.71	106	0.55	90	0.36
Interest paid	138	0.77	123	0.64	122	0.50
Other professional fees	15	0.09	13	0.07	24	0.10
Miscellaneous	<u>24</u>	<u>0.14</u>	<u>21</u>	<u>0.11</u>	<u>23</u>	<u>0.09</u>
TOTAL OPERATING EXPENSES	\$2,786	\$15.53	\$3,049	\$15.88	\$3,928	\$15.91
Expansion livestock	10	0.05	16	0.08	32	0.13
Extraordinary expense	2	0.01	10	0.05	1	0.01
Machinery depreciation	192	1.07	182	0.95	185	0.75
Building depreciation	<u>90</u>	<u>0.50</u>	<u>88</u>	<u>0.46</u>	<u>129</u>	<u>0.52</u>
TOTAL ACCRUAL EXPENSES	\$3,080	\$17.17	\$3,344	\$17.42	\$4,275	\$17.31

Table 67.

COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
201 New York Dairy Farms, 2009

Item	West. & Cent. Plateau Region	Western & Central Plain Region	Northern New York	Central Valleys	North. Hudson & Southeastern New York
Number of farms	31	48	33	33	56
<u>ACCRUAL EXPENSES</u>					
Hired labor	\$168,483	\$541,874	\$295,479	\$314,860	\$188,973
Feed	392,777	1,026,022	656,981	602,207	394,057
Machinery	117,280	273,348	200,671	216,666	124,825
Livestock	213,453	605,324	368,170	393,241	234,214
Crops	57,283	159,032	100,941	160,919	70,885
Real estate	52,483	138,409	69,801	84,708	43,257
Other	71,305	239,751	162,000	145,511	85,813
Total Operating Expenses	<u>\$1,073,063</u>	<u>\$2,983,759</u>	<u>\$1,854,044</u>	<u>\$1,918,113</u>	<u>\$1,142,022</u>
Expansion livestock	6,856	10,201	30,214	18,679	9,303
Extraordinary expense	358	567	2,261	379	931
Machinery depreciation	61,134	133,622	102,479	96,355	49,474
Building depreciation	<u>35,292</u>	<u>107,594</u>	<u>69,692</u>	<u>62,478</u>	<u>23,141</u>
Total Accrual Expenses	<u>\$1,176,704</u>	<u>\$3,235,743</u>	<u>\$2,058,690</u>	<u>\$2,096,003</u>	<u>\$1,224,871</u>
<u>ACCRUAL RECEIPTS</u>					
Milk sales	\$986,846	\$2,576,621	\$1,611,064	\$1,742,943	\$964,514
Livestock	76,041	228,445	150,532	143,264	99,752
Crops	11,145	10,731	37,337	24,448	6,357
Government Receipts	50,082	90,024	64,450	74,685	53,236
All other	<u>15,558</u>	<u>73,266</u>	<u>43,005</u>	<u>36,737</u>	<u>21,031</u>
Total Accrual Receipts	<u>\$1,139,673</u>	<u>\$2,979,087</u>	<u>\$1,906,387</u>	<u>\$2,022,077</u>	<u>\$1,144,889</u>
<u>PROFITABILITY ANALYSIS</u>					
Net farm income(w/o appreciation)	\$ -37,031	\$-256,657	\$-152,303	\$-73,926	\$ -79,981
Net farm income (w/ appreciation)	\$ -57,207	\$-191,161	\$ -99,825	\$-76,423	\$-102,646
Labor & management income	\$-155,565	\$-458,479	\$-294,961	\$-238,993	\$-176,492
Number of operators	1.75	2.05	1.72	1.92	1.72
Labor & mgmt. income/operator	\$ -88,894	\$-223,648	\$-171,489	\$-124,475	\$-102,612
<u>BUSINESS FACTORS</u>					
Worker equivalent	7.21	15.82	11.20	11.61	7.81
Number of cows	301	754	490	513	287
Number of heifers	277	617	424	385	251
Acres of hay crops ⁶⁸	385	659	587	457	355
Acres of corn silage ⁶⁸	256	623	432	452	246
Total tillable acres	651	1,320	1,148	1,109	655
Pounds of milk sold	7,258,877	18,482,759	11,944,240	12,442,489	6,798,620
Pounds of milk sold/cow	24,105	24,507	24,360	24,246	23,674
Tons hay crop dry matter/acre	2.9	4.0	3.2	3.4	2.9
Tons corn silage/acre	20.5	19.6	19.6	17.9	16.8
Cows/worker	42	48	44	44	37
Pounds of milk sold/worker	1,006,663	1,168,070	1,066,291	1,071,704	870,223
% grain & conc. of milk receipts	38%	37%	40%	33%	40%
Feed & crop expense/cwt. milk	\$6.20	\$6.41	\$6.34	\$6.13	\$6.84
Fertilizer & lime/crop acre ⁶⁸	\$33.80	\$52.38	\$26.25	\$58.65	\$34.24
Machinery cost/tillable acre ⁶⁸	\$310	\$344	\$298	\$317	\$303

⁶⁸Excludes farms that do not harvest forages.

Figure 2.

**Percent Change in Milk Production, Five Regions in New York,
1989-2009**

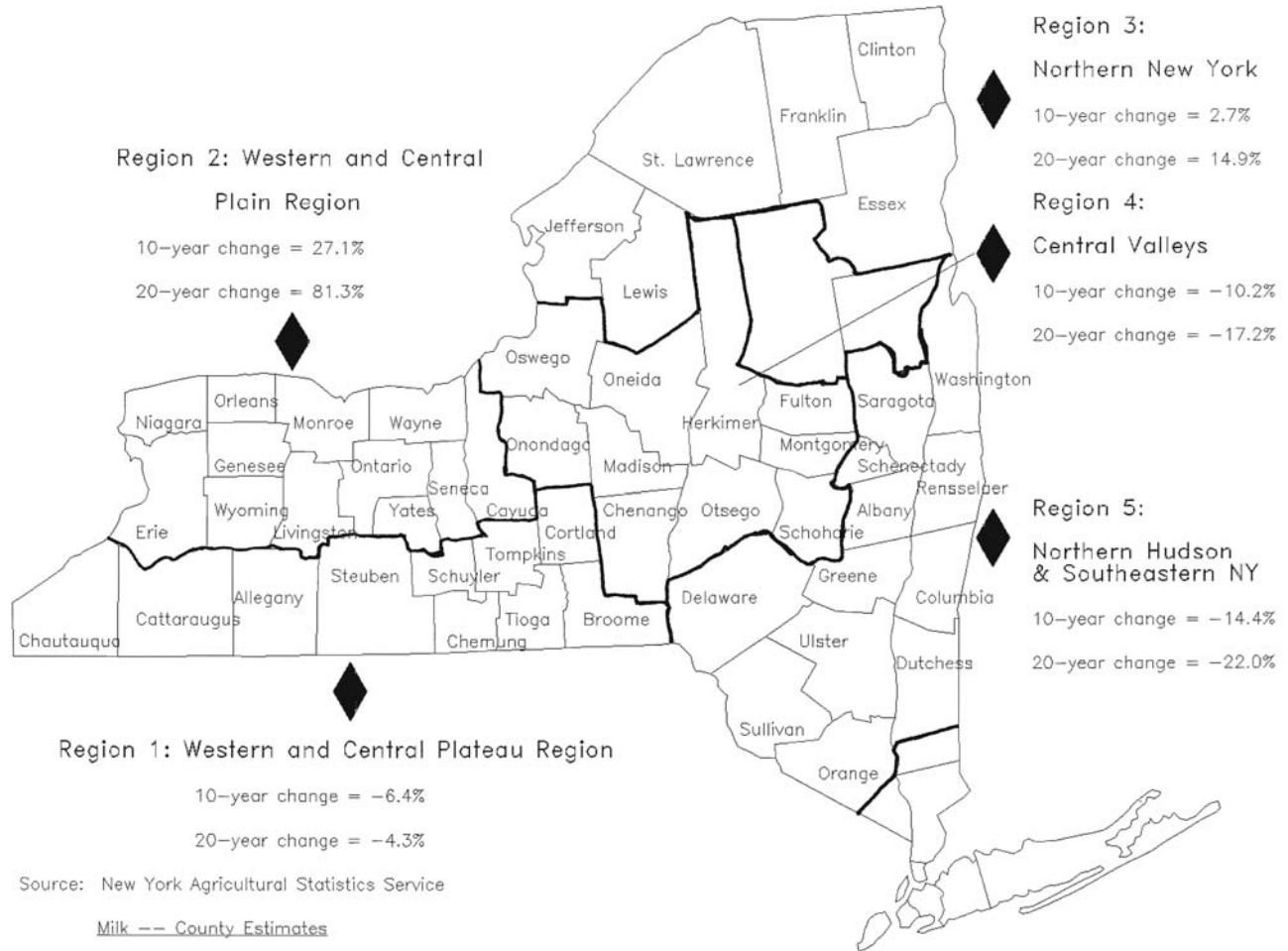


Table 68.

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

Item	Region ⁶⁹				
	1	2	3	4	5
<u>Milk Production</u> ⁷⁰	(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
2009	1,990.5	4,410.0	2,432.5	2,352.5	1,238.5
Percent change, 1999 to 2009	-6.4%	+27.1%	+2.7%	-10.2%	-14.4%
Percent change, 1989 to 2009	-4.3%	+81.3%	+14.9%	-17.2%	-22.0%
<u>2009 Cost of Producing Milk</u> ⁷¹	(\$ per hundredweight milk)				
Operating cost	\$12.77	\$14.02	\$13.30	\$13.32	\$14.28
Total cost	16.93	17.07	16.73	16.68	17.73
Average price received	13.60	13.94	13.49	14.01	14.19
Return per cwt. to operator labor, management & capital	\$-0.61	\$-1.41	\$-1.33	\$-0.62	\$-1.26

⁶⁹See Figure 2 for region descriptions.⁷⁰Source: New York Agricultural Statistics Service, Milk-County Estimates.⁷¹From Dairy Farm Business Summary data.

Table 69.

SELECTED BUSINESS FACTORS BY MILKING FREQUENCY
New York State Dairy Farms, 2008 & 2009

Item	2x/Day Milking		3x/Day Milking	
	2008	2009	2008	2009
Number of farms	136	110	74	85
<u>Business Size & Production</u>				
Number of cows	188	190	812	816
Number of heifers	159	164	680	670
Milk sold, lbs.	3,940,395	3,851,970	20,736,050	20,823,716
Milk sold/cow, lbs.	20,992	20,283	25,529	25,505
Milk plant test, % butterfat	3.76%	3.79%	3.60%	3.62%
Tillable acres, total	468	453	1,605	1,601
Hay crop, tons DM/acre	3.1	2.8	3.7	3.6
Corn silage, tons/acre	20.1	18.7	19.9	18.8
Forage DM/cow, tons	8.7	7.8	8.3	8.3
<u>Labor & Capital Efficiency</u>				
Worker equivalent	4.80	4.79	18.43	18.11
Milk sold/worker, lbs.	820,204	804,729	1,125,125	1,150,058
Cows/worker	39	40	44	45
Farm capital/worker	\$372,218	\$375,681	\$398,398	\$405,173
Farm capital/cow	\$9,538	\$9,476	\$9,039	\$8,987
Farm capital/cwt. milk	\$45.44	\$46.72	\$35.41	\$35.24
<u>Milk Production Costs & Returns</u>				
Selected costs/cwt.:				
Hired labor	\$2.55	\$2.41	\$2.87	\$2.74
Grain & concentrate	\$5.91	\$5.24	\$5.78	\$5.15
Purchased roughage	\$0.39	\$0.35	\$0.31	\$0.25
Replacements purchased	\$0.05	\$0.04	\$0.09	\$0.07
Veterinary & medicine	\$0.70	\$0.63	\$0.68	\$0.63
Milk marketing	\$0.96	\$0.94	\$0.81	\$0.86
Other dairy expenses	\$1.53	\$1.50	\$1.84	\$1.66
Operating cost of milk production/cwt.	\$15.33	\$13.75	\$15.12	\$13.67
Total labor costs/cwt.	\$4.01	\$4.00	\$3.19	\$3.09
Owner/operator resources/cwt.	\$3.11	\$3.13	\$1.73	\$1.73
Total cost of milk production/cwt.	\$20.06	\$18.46	\$18.24	\$16.69
Average farm price/cwt.	\$19.59	\$13.94	\$19.12	\$13.86
Return over total costs/cwt.	\$-0.47	\$-4.52	\$0.88	\$-2.83
<u>Related Cost Factors</u>				
Hired labor/cow	\$535	\$489	\$733	\$700
Total labor/cow	\$842	\$810	\$814	\$789
Purchased dairy feed/cow	\$1,321	\$1,133	\$1,554	\$1,377
Purchased grain & concentrate as % of milk receipts	31%	38%	30%	38%
Veterinary & medicine/cow	\$147	\$128	\$173	\$160
Machinery costs/cow	\$799	\$642	\$799	\$667
<u>Profitability Analysis</u>				
Net farm income (without appreciation)	\$109,986	\$-45,094	\$542,979	\$-227,793
Labor & management income/operator	\$26,410	\$-74,345	\$149,881	\$-214,063
Rates of return on:				
Equity capital with appreciation	4.9%	-9.9%	10.3%	-6.7%
All capital with appreciation	4.9%	-5.4%	8.4%	-2.9%

Table 70.

FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
12 New York Dairy-Renter Farms,⁷² 2009

<u>ACCRUAL EXPENSES</u>		<u>ACCRUAL RECEIPTS</u>			
<u>Labor:</u> Hired	\$110,603	Milk sales	\$719,603		
<u>Feed:</u> Dairy grain & concentrate	257,294	Dairy cattle	57,532		
Dairy roughage	31,569	Dairy calves	9,176		
Nondairy	0	Other livestock	51		
Professional nutritional services	283	Crops	-4,505		
<u>Machinery:</u> Machinery hire, rent & lease	24,402	Government receipts	50,998		
Machinery repairs & farm vehicle expense	44,148	Custom machine work	6,946		
Fuel, oil, grease	29,043	Gas tax refund	0		
<u>Livestock:</u> Replacement livestock	3,556	Other	6,810		
Breeding	9,009	TOTAL ACCRUAL RECEIPTS	\$846,611		
Veterinary & medicine	22,520				
Milk marketing	42,085				
Bedding	12,074	<u>PROFITABILITY ANALYSIS</u>			
Milking supplies	22,692	Net farm income (without appreciation)	\$-37,021		
Cattle lease & rent	0	Net farm income (with appreciation)	\$-63,687		
Custom boarding	21,888	Labor & management income/farm	\$-84,709		
bST expense	10,292	Number of operators	1.65		
Livestock professional fees	2,856	Labor & management income/operator	\$-51,339		
Other livestock expense	10,036	Rate of return on equity capital			
<u>Crops:</u> Fertilizer & lime	30,362	with appreciation	-20.2%		
Seeds & plants	16,062				
Spray & other crop expense	11,921				
Crop professional fees	1,150				
<u>Real estate:</u> Land, building & fence repair	13,641	<u>BUSINESS FACTORS</u>			
Taxes	5,523	Number of cows	223		
Rent & lease	35,802	Number of heifers	181		
<u>Other:</u>		Worker equivalent	5.56		
Insurance	7,730	Total tillable acres	523		
Utilities (farm share)	24,597	Milk sold per cow, lbs.	22,990		
Interest paid	16,311	Hay DM per acre, tons	3.2		
Miscellaneous	18,052	Corn silage per acre, tons	15.7		
TOTAL OPERATING EXPENSES	\$835,500	Milk sold per worker, lbs.	922,225		
		Grain & concentrate as % milk sales	37%		
Expansion livestock	\$18,612	Feed & crop expense/cwt. milk	\$6.80		
Extraordinary expense	4,913	Labor & machinery costs/cow	\$1,400		
Machinery depreciation	18,580	Average price/cwt. milk	\$14.05		
Building depreciation	6,028				
TOTAL ACCRUAL EXPENSES	\$883,632				
<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	\$14,169	\$23,789	Current	\$89,709	\$174,790
Accounts receivable	68,529	62,273	Intermediate ⁷⁴	260,823	308,478
Prepaid expenses	750	0	Long term ⁷³	64,298	62,447
Feed & supplies	167,128	138,444	Total Farm Liabilities	\$414,830	\$545,715
Livestock ⁷³	489,438	483,522	Nonfarm Liabilities ⁷⁵	0	0
Machinery & equipment ⁷³	264,273	286,116	Farm & Nonfarm Liabilities	\$414,830	\$545,715
Farm Credit stock	354	435	Farm Net Worth	\$768,590	\$534,622
Other stock & certificates	96,990	89,343	Farm & Nonfarm Net Worth	\$830,561	\$689,928
Land & buildings ⁷³	81,789	96,415			
Total Farm Assets	\$1,183,420	\$1,180,338			
Nonfarm Assets ⁷⁵	61,971	55,305			
Farm & Nonfarm Assets	\$1,245,391	\$1,235,643			

⁷²A renter owns no farm real estate or tillable land at the end of year.

⁷³Includes discounted lease payments.

⁷⁴Includes Farm Credit stock and discounted lease payments for cattle and machinery.

⁷⁵Average of 3 farms reporting.

NOTES

APPENDIX

**PRICES, COSTS AND TRENDS
IN THE NEW YORK DAIRY INDUSTRY**

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, 1995-2009**

Year	Mixed Dairy Feed 16% Protein ⁸² (\$/ton)	Fertilizer, Urea 45-46%N ⁸² (\$/ton)	Seed Corn, Hybrid ⁸³ (\$/80,000 kernels)	Diesel Fuel ⁸² (\$/gal)	Tractor 50-59 PTO ⁸³ (\$)	Wage Rate All Hired Farm Workers ⁸⁴ (\$/hr)
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
2000	174	201	87.50	1.270	21,800	8.74
2001	176	270	92.20	1.260	22,000	8.72
2002	178	232	92.00	1.028	21,900	9.26
2003	194	283	102.00	1.516	21,300	9.93
2004	207	299	105.00	1.400	21,500	9.96
2005	190	365	111.00	2.020	23,400	9.88
2006	207	403	118.00	2.350	23,700	10.35
2007	239	480	133.00	2.355	24,300	10.49
2008	300	598	165.00	3.773	25,000	10.96
2009	258	494	217.00	1.952	24,500	10.83

SOURCE: NYASS, New York Agricultural Statistics. USDA, NASS, Agricultural Prices.

⁸²Northeast region average. ⁸³United States average. ⁸⁴New 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 and an index of the real estate prices.

Table A2.**VALUES AND INDICES OF NEW YORK DAIRY FARM INVENTORY ITEMS, 1993-2009**

Year	Dairy Cows		Machinery ⁸⁵	Farm Real Estate ⁸⁶	
	Value/Head	1977=100	1977=100	Value/Acre	1977=100
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
2000	1,250	253	301	1,430	244
2001	1,600	323	312	1,520	259
2002	1,400	283	320	1,610	274
2003	1,300	263	325	1,700	290
2004	1,580	319	351	1,770	302
2005	1,690	341	377	1,900	324
2006	1,550	313	397	2,020	344
2007	1,930	390	416	2,180	371
2008	1,900	384	456	2,350	400
2009	1,200	242	484	2,400	409

SOURCE: USDA, NASS, ASB, Agricultural Prices.

⁸⁵United States average; 1995 - 2009 are estimated due to discontinuation of 1977=100 series.

⁸⁶New York average for 2000-2009 excludes Native American Reservation land.

Table A3.

NUMBER OF DAIRY FARMS AND MILK COWS BY SIZE OF HERD New York State, 2009 ^{87,88}				
Size of Herd	Farms		Milk Cows	
Number of Cows	Number	% of Total	Number	% of Total
1 – 29	1,050	19.8%	10,500	1.7%
30 – 49	1,000	18.9%	35,000	5.7%
50 – 99	1,800	34.0%	131,000	21.2%
100 – 199	858	16.1%	111,500	18.0%
200 – 499	385	7.3%	121,000	19.5%
500 – 749	105	1.98%	65,000	10.5%
750 – 999	35	0.66%	31,000	5.0%
1,000 – 1,499	37	0.70%	44,000	7.1%
1,500 – 1,999	15	0.28%	26,500	4.3%
2,000 or more	15	0.28%	43,500	7.0%
Total	5,300	100.0%	619,000	100.0%

⁸⁷This information on number of farms and number of cows by size of herd is derived from several sources:

- Dairy Statistics as published by the New York Agricultural Statistics Services for 2009.
- CAFO (Concentrated Animal Feeding Operations) permit reports for 2009. Some small CAFO farms (farms with 200 to 700 milk cows) have not applied for or updated the permit. Estimates for these farms were made so as to reflect the total number of dairy farms in New York State; revision from Census in certain size categories.

⁸⁸The author wishes to thank everyone who provided some data as well as providing valuable advice and perspectives. However, any errors, omissions or misstatements are solely the responsibility of the author, Professor George Conneman, **e-mail GJC4@cornell.edu.**

In 2009, there were 5,300 dairy farms in New York State, and 619,000 milk cows. The table above was prepared based on the NYASS data plus the CAFO permit filing for additional herd size categories, and estimates from the 2007 Census.

Eighty-nine percent of the farms (less than 200 cows per farm) had 47 percent of the milk cows. The remaining eleven percent of the farms had 53 percent of the cows.

About 4 percent of the farms (those with 500 or more cows) had 34 percent of the cows.

Farms with less than 50 cows represent 39 percent of all farms but kept only 7 percent of the cows.

Farms with 1,000 or more cows represent about 1.25 percent of the farms but kept over 18 percent of the cows.

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 42).

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 20 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. Accounting Service: any hired 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 42).

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 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 intermediate and long term capital used on 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 expected to be repaid within 12 months.

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.

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

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: (defined on page 9).

Farm Business Chart: (see definition and application on page 44).

Farm Capital: Average total farm assets.

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 & 47.

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 47.

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 hay land, including new seedings, harvested once or more per year as hay or hay crop silage.

Hay Dry Matter: see Dry Matter.

Heifers: Female dairy replacements of all ages.

Hired Labor (expenses): All wages, non-wage 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 accrual adjusted farm business receipts and expenses used to measure net income 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 paddocks 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 42 and 43).

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.

Leverage Ratio: (defined on pages 16 and 47).

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, parallel, parabone, and rotary parlors are identified specifically. Other Parlors would include milking systems such as flat barn parlors.

Net Farm Income: (defined on page 12).

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

Net Milk Income over Purchased Concentrate Per Cow: Milk receipts less milk marketing expense less purchased grain and concentrate expense, all divided by average number of cows.

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 is not be included in a regular crop 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.

Owner/Operator Resources Per Hundredweight: The total value of equity, management, and labor contributed to the farm from all owner/operators. This measure is calculated by adding the interest on equity capital to the value of labor and management for all owner/operators and dividing by the hundredweight milk produced during the year.

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 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 animals in the herd that calved for replacement purposes (not expansion cattle) that were different genetic background than your herd and were purchased.

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.

Premium: In milk marketing this typically refers to the amount paid for milk in addition to the minimum regulated price. Premiums may be paid to the producer or cooperative supplier of milk by a buyer depending on a variety of criteria such as milk quality, composition, quantity supplied, or services provided. They may also represent market supply/demand conditions not adequately accounted for in the regulated price.

Prepaid Expenses: (defined on page 11).

Producer Price Differential: Under Federal Order markets with multiple component pricing, it is the residual value (per hundredweight) of the pool after deducting component payments (protein, butterfat, and other solids) to producers. This residual value will vary between market orders and from month-to-month based on the utilization of the various classes and class price. It is possible that the PPD can even be negative at times if, for example, the class III price exceeds the class I price.

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).

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.

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).

Stocking Rate: (defined on page 23).

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 non-corporate taxpayers.

Tillable Acres: All acres that are normally cropped including hay land 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.

OTHER A.E.M. RESEARCH BULLETINS

RB No	Title	Fee (if applicable)	Author(s)
2010-01	Measuring the Impacts of Generic Fluid Milk and Dairy Marketing		H. Kaiser
2009-01	Dairy Farm Management Business Summary, New York State, 2008	(\$20.00)	Knoblauch, W., Putnam, L., Karszes, J. and J. Anderson
2008-03	Dairy Farm Management Business Summary, New York State, 2007	(\$20.00)	Knoblauch, W., Putnam, L., Karszes, J., Murray D. and R. Moag
2008-02	100 Years of Dairy Farming: Town of Dryden, Tompkins County		Stanton, B., Conneman, G., Crispell, C. and S. Smith
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2006-07	Financial Performance and Other Characteristics of On-Farm Dairy Processing Enterprises in New York, Vermont and Wisconsin		Nicholson, C. and M. Stephenson
2006-06	Dairy Farm Management Business Summary, New York State, 2005	(\$20.00)	Knoblauch, W., Putnam, L. and J. Karszes
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