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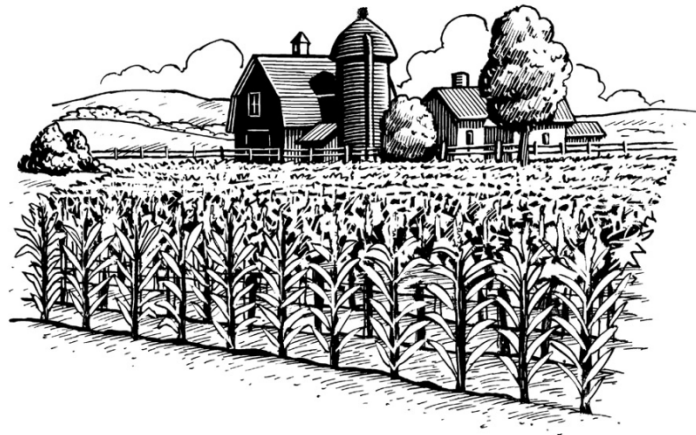
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DAIRY FARM MANAGEMENT

BUSINESS SUMMARY NEW YORK STATE 2008



*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, 2008**

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ABSTRACT

Business and financial records for 2008 from 224 New York dairy farm businesses are summarized and analyzed. This analysis demonstrates the use of 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 414 cows per farm and 24,115 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 \$263,984 per farm. The rate of return to all capital invested in the farm business including appreciation averaged 7.2 percent.

Differences in profitability between farms continue to widen. Average net farm income excluding appreciation of the top 10 percent of farms was \$1,346,592, while the lowest 10 percent was \$-77,207. Rates of return on equity with appreciation ranged from positive 23 percent to negative 16 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, and the greatest returns to labor, management and capital. Farms milking three times a day (3X) were larger, produced more milk per cow and had higher net farm incomes in 2008 than herds milking two times per day (2X). Operating costs per hundredweight of milk were \$0.21 per hundredweight lower for 3X than 2X milking herds, while output per cow was 4,537 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 Department 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 2008, 312 dairy farms participated, including dairy owners, renters, full-time, part-time, and out-of-state farms. Business records submitted by dairy farmers from 44 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, 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 6 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 224 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). Participants represent more than 5.1 percent of the milk cow operations in New York (see Appendix Table A3). The 224 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 63 through 67. 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.

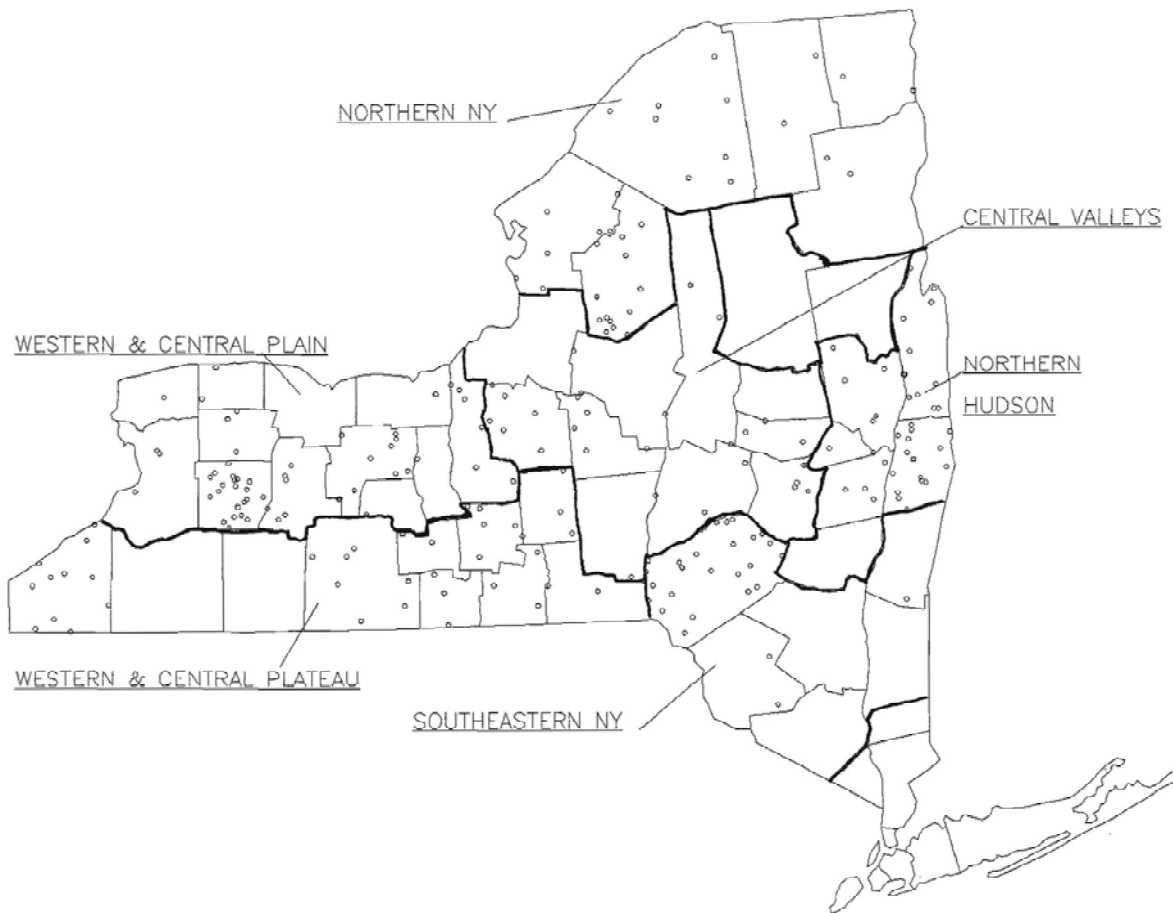
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¹This report was written by Wayne A. Knoblauch, Professor; Linda D. Putnam, Extension Support Specialist in the Department of Applied Economics and Management at Cornell University; Jason Karszes, Senior Extension Associate, Pro-Dairy; and Jessica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

Figure 1.

**LOCATION OF THE 224 NEW YORK DAIRY FARMS
IN THE 2008 DAIRY FARM BUSINESS SUMMARY**



2008 Regional Summary Publications

<u>Region</u>	<u>Publications</u>	<u>Author(s)</u>
Western and Central Plain	E.B. 2009-10	Wayne A. Knoblauch, Linda D. Putnam, Jason Karszes, John Hanchar, Joan S. Petzen & Kyle Getty
Northern Hudson	E.B. 2009-13	George J. Conneman, Linda D. Putnam, Cathy S. Wickswat, Sandra A. Buxton, Richard C. Smith & Jason Karszes
Western and Central Plateau	E.B. 2009-07	Wayne A. Knoblauch, Linda D. Putnam, Jason Karszes, James W. Grace, Rodger Beck, Virginia Carlberg, Lynn Bliven & Tom Parmenter
Southeastern New York	E.B. 2009-12	Wayne A. Knoblauch, Linda D. Putnam, Mariane Kiraly, Joseph J. Walsh, Larry R. Hulle & Cathly S. Wickswat
Central Valleys	E.B. 2009-14	Wayne A. Knoblauch, Jason Karszes, Daniel Murray, Charles Z. Radick, Cathy S. Wickswat, James P. Manning, Bonnie Collins, David Balbian, George Allhusen, Sandra A. Buxton & Linda D. Putnam
Northern New York	E.B. 2009-15	Wayne A. Knoblauch, Linda D. Putnam, Jason Karszes, Peggy Murray, Frans Vokey, Molly Ames, Anita Deming & Jessica Prosper

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 12 fold between 1958 and 2008 with nearly a doubling in herd size over the last 10 years. The DFBS sample is not representative of all farms in New York State. New York Agricultural Statistics Service data indicate the average herd in the state increased in size about two and a half times over the same 50-year period. Milk output per cow increased 156 percent with the largest increase occurring between 1988 and 1998. Labor efficiency, measured by pounds of milk sold per worker, is up 493 percent on DFBS farms, and the operating cost of producing milk increased more than 900 percent with the largest jump occurring between 1968 and 1978.

There is a large increase in farm capital invested per farm, up 8306 percent since 1958. Net farm income per farm increased 310 percent (adjusted for 2008 dollars). Labor and management income per operator is up 55 percent from 50 years ago (adjusted for 2008 dollars). This is a reflection of the increased variability over the last 10 years. Some factors could not be calculated with 1958 and 1968 data because liabilities, interest paid, and appreciation were not available in those years. Farm net worth excluding deferred taxes has increased 1147 percent over the last 30 years and rate of return on equity capital decreased 42 percent since 1978.

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 156 farms that were DFBS cooperators each year since 2005. 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 \$6.46.

Average net farm income without appreciation in 2008 was 9.9 percent above the 2005 average, and 97 percent below the 2007 average. Net worth increased 15 percent in 2005, increased one percent in 2006, increased 27 percent in 2007, and increased 4 percent in 2008.

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.

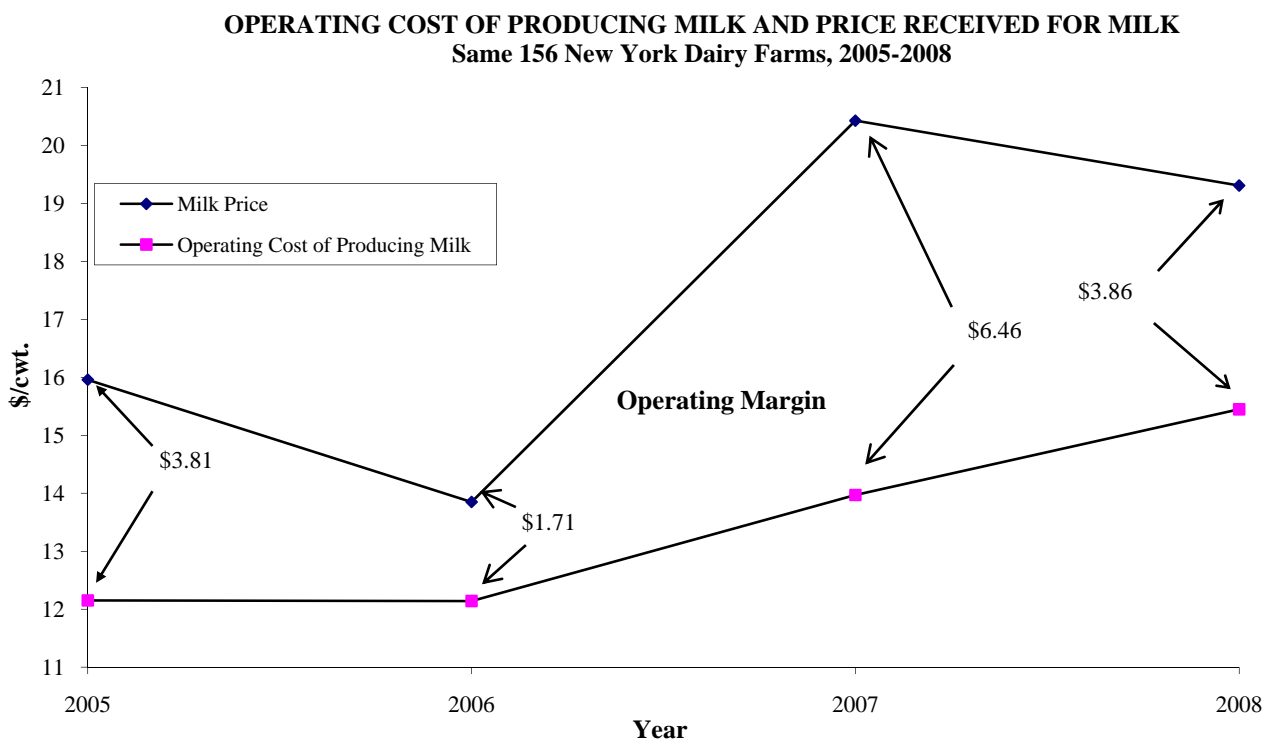


Table 1.

COMPARISON OF FARM BUSINESS SUMMARY DATA
New York Dairy Farms, 1958 - 2008

Selected Factors	1958	1968	1978	1988	1998	2008
Number of farms	559	568	527	406	305	224
<u>Size of Business</u>						
Average number of cows	33	58	71	102	210	414
Average number of heifers	20	40	49	82	155	348
Milk sold, cwt.	3,109	7,152	9,795	17,200	43,954	99,884
Worker equivalent	1.80	2.10	2.40	3.17	5.35	9.75 ⁴
Total tillable acres	104 ²	155 ²	217 ²	302	497	883
<u>Rates of Production</u>						
Milk sold per cow, lbs.	9,421	12,300	14,000	16,882	20,900	24,115
Hay DM per acre, tons	2.3	2.8	2.4	2.6	3.3	3.5
Corn silage per acre, tons	10	14	14	14	19	20
<u>Labor Efficiency</u>						
Cows per worker	18	28	29	32	39	42 ⁴
Milk sold per worker, lbs.	172,700	340,600	404,800	542,708	821,565	1,024,799 ⁴
<u>Cost Control</u>						
Grain & conc. as % of milk sales	25%	24%	28%	28%	26%	31%
Dairy feed & crop expense/cwt.	\$1.66	\$1.73	\$3.81	\$4.62	\$5.00	\$7.23
Operating cost of prod. cwt. milk	\$1.51	\$1.91	\$7.23	\$9.47	\$11.50	\$15.21
Total cost of producing cwt. milk	\$3.62	\$4.48	\$11.34	\$13.67	\$14.52	\$18.73
Milk receipts per cwt. milk	\$4.68	\$5.52	\$10.51	\$13.03	\$15.60	\$19.24
<u>Capital Efficiency</u>						
Total farm capital	\$45,062	\$107,855	\$302,409	\$624,841	\$1,293,903	\$3,787,773
Farm capital per cow	\$1,366	\$1,860	\$4,259	\$6,133	\$6,161	\$9,145
Machinery & equipment per cow	\$292	\$435	\$799	\$1,083	\$1,118	\$1,535
Real estate per cow	\$659	\$892	\$2,280	\$2,902	\$2,537	\$3,606
Livestock investment per cow	\$348	\$471	\$931	\$1,279	\$1,477	\$2,368
Asset turnover ratio	0.46	0.47	0.43	0.45	0.61	0.59
<u>Profitability</u>						
Net farm income without apprec. ⁵	NA ³	NA ³	\$133,155	\$70,086	\$175,171	\$263,984
Net farm income with apprec. ⁵	\$73,442	\$133,153	\$156,681	\$107,005	\$208,160	\$301,076
Labor & management income per operator/manager ⁵	\$49,066	\$72,163	\$22,367	\$21,678	\$73,801	\$75,945
Rate of return on:						
Equity capital with appreciation	NA	NA	14.6%	7.3%	14.7%	8.4%
All capital with appreciation	NA	NA	11.6%	7.6%	11.5%	7.2%
All capital without appreciation	NA	NA	9.5%	4.3%	9.6%	6.2%
<u>Financial Summary, End Year</u>						
Farm net worth	NA	NA	\$211,680	\$426,123	\$798,297	\$2,640,168
Change in net worth with apprec.	NA	NA	\$39,800	\$33,105	\$110,211	\$110,614
Debt to asset ratio	NA	NA	0.37	0.34	0.41	0.32
Farm debt per cow	NA	NA	\$1,708	\$2,063	\$2,550	\$3,009

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.

⁵Adjusted for inflation using Consumer Price Index – 2008 dollars.

Table 2.

COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 156 New York Dairy Farms, 2005 - 2008

Selected Factors	2005	2006	2007	2008
Milk receipts per cwt. milk	\$15.96	\$13.85	\$20.43	\$19.31
<u>Size of Business</u>				
Average number of cows	395	415	418	429
Average number of heifers	317	338	338	358
Milk sold, cwt.	92,296	96,969	97,883	103,387
Worker equivalent ⁶	9.21	9.51	9.67	10.11
Total tillable acres	813	839	856	919
<u>Rates of Production</u>				
Milk sold per cow, lbs.	23,387	23,393	23,404	24,115
Hay DM per acre, tons	3.3	3.2	3.1	3.6
Corn silage per acre, tons	19	18	18	20
<u>Labor Efficiency</u>				
Cows per worker ⁶	43	44	43	42
Milk sold per worker, lbs. ⁶	1,002,580	1,019,475	1,012,762	1,023,126
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	26%	30%	24%	31%
Dairy feed & crop expense per cwt. milk	\$5.08	\$5.02	\$6.11	\$7.35
Operating cost of producing cwt. milk	\$12.15	\$12.14	\$13.97	\$15.45
Total cost of producing cwt. milk	\$15.24	\$15.18	\$17.23	\$18.88
Hired labor cost per cwt.	\$2.67	\$2.66	\$2.77	\$2.90
Interest paid per cwt.	\$0.60	\$0.75	\$0.77	\$0.56
Labor & machinery costs per cow	\$1,373	\$1,369	\$1,484	\$1,648
<u>Capital Efficiency, Average for Year</u>				
Farm capital per cow	\$7,309	\$7,558	\$8,165	\$8,952
Machinery & equipment per cow	\$1,256	\$1,292	\$1,393	\$1,549
Real estate per cow	\$2,782	\$2,921	\$3,104	\$3,405
Livestock investment per cow	\$2,022	\$2,108	\$2,242	\$2,330
Asset turnover ratio	0.63	0.54	0.71	0.61
<u>Profitability</u>				
Net farm income without appreciation	\$229,871	\$46,291	\$503,606	\$255,143
Net farm income with appreciation	\$353,807	\$144,787	\$670,937	\$315,021
Labor & management income per operator/manager	\$82,085	\$-33,974	\$233,537	\$71,996
Rate return on:				
Equity capital with appreciation	15.5%	3.4%	26.6%	9.1%
All capital with appreciation	11.6%	4.5%	19.6%	7.6%
All capital without appreciation	7.3%	1.3%	14.7%	6.0%
<u>Financial Summary, End Year</u>				
Farm net worth	\$1,930,031	\$1,975,746	\$2,493,179	\$2,610,855
Change in net worth with appreciation	\$247,709	\$27,351	\$533,657	\$106,124
Debt to asset ratio	0.36	0.39	0.32	0.34
Farm debt per cow	\$2,725	\$2,913	\$2,818	\$3,137

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

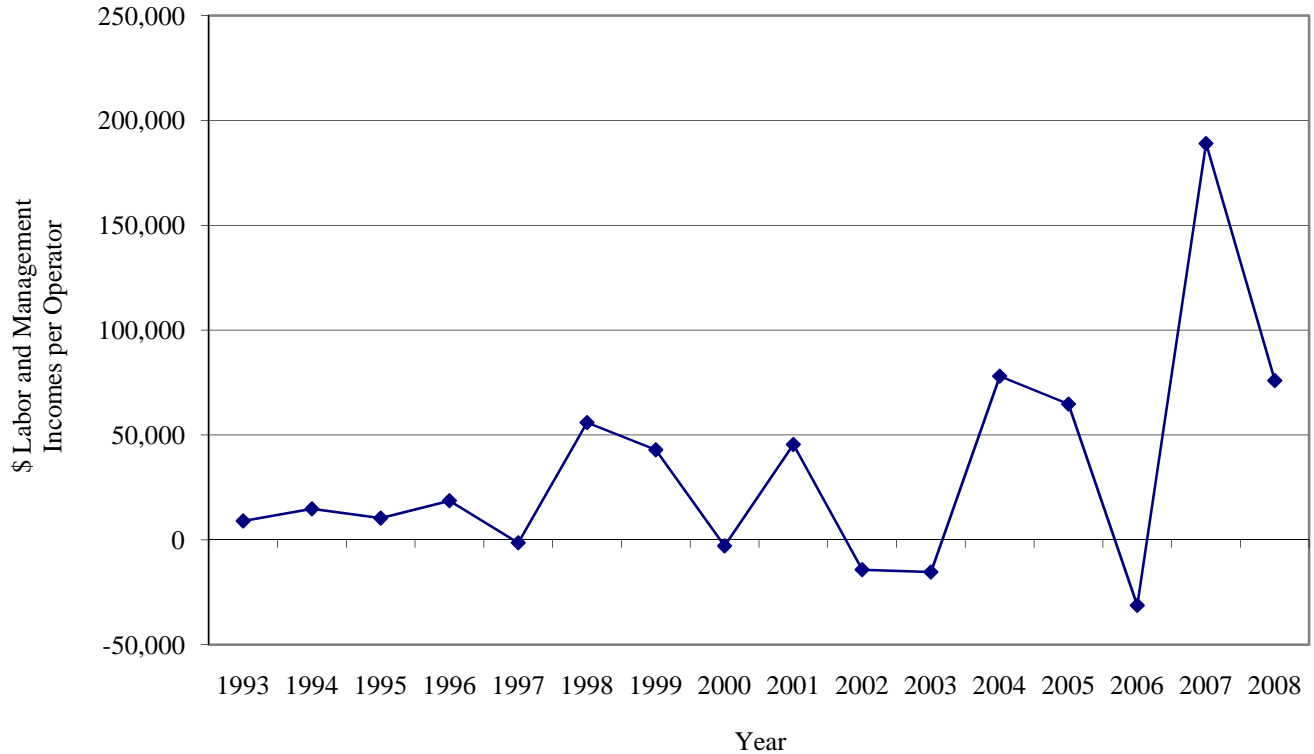
ADJUSTING PROFIT, PRICE AND COSTS FOR INFLATION

Labor and management incomes per operator in 2008 were comparatively high, when measured in nominal (actual) value (Chart 2). Over the period 1993 to 2008, labor and management incomes per operator did not exceed \$25,000 except for \$55,000 in 1998, nearly \$43,000 in 1999, over \$45,000 in 2001, 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 414 cows over this period.

Chart 2.

LABOR AND MANAGEMENT INCOMES PER OPERATOR

Dairy Farm Business Summary Farms, 1993-2008

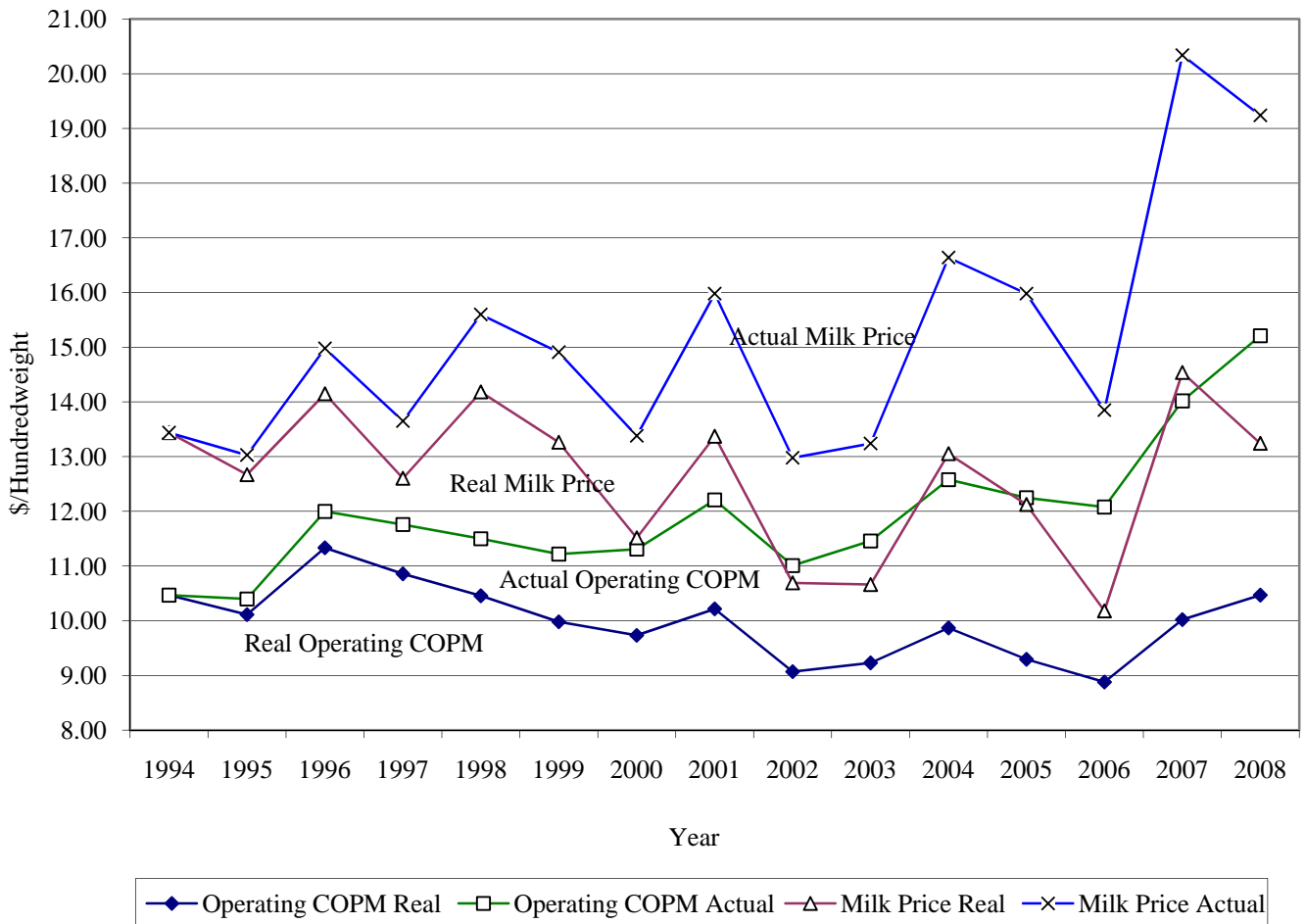


Milk prices in 2008 averaged \$19.24 per hundredweight in actual dollars (Chart 3). However, the 2008 milk price, adjusted for inflation, in 1994 dollars, would have been only \$14.54 per hundredweight.

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. 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, 1994-2007



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 224 Farms averaged \$4,8645 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
224 New York Dairy Farms, 2008

Expense Item	Cash Paid	- Change in Inventory or Prepaid Expense	+ Change in Accounts Payable	=	Accrual Expenses	Per- cent
<u>Hired Labor</u>	\$279,133	\$460 <<	\$322		\$278,995	16
<u>Feed</u>						
Dairy grain & concentrate	573,537	-5,444	4,374		583,355	33
Dairy roughage	30,892	443	1,768		32,218	2
Nondairy livestock	82	3	0		78	<1
Professional nutritional services	689	0 <<	2		691	<1
<u>Machinery</u>						
Machinery hire, rent & lease	34,821	-255 <<	1,450		36,526	2
Machinery repairs & farm vehicle expense	86,281	-478	436		87,195	5
Fuel, oil & grease	90,698	-184	227		91,109	5
<u>Livestock</u>						
Replacement livestock	8,472	0 <<	3		8,475	<1
Breeding	26,068	86	383		26,365	1
Veterinary & medicine	67,463	-356	235		68,054	4
Milk marketing	84,584	121 <<	561		85,025	5
Bedding	34,868	659	180		34,389	2
Milking Supplies	38,697	-197	299		39,193	2
Cattle lease & rent	1,023	0 <<	11		1,034	<1
Custom boarding	38,795	606 <<	442		38,631	2
bST expense	23,598	122 <<	82		23,558	1
Livestock professional fees	4,876	-152 <<	38		5,066	<1
Other livestock expense	9,708	43	47		9,712	1
<u>Crops</u>						
Fertilizer & lime	39,905	-6,510	989		47,404	3
Seeds & plants	33,385	1,039	707		33,053	2
Spray & other crop expense	19,116	-1,630	432		21,178	1
Crop professional fees	4,589	-72 <<	-31		4,631	<1
<u>Real Estate</u>						
Land, building & fence repair	34,344	398	232		34,178	2
Taxes	21,537	230 <<	-53		21,254	1
Rent & lease	26,064	-307 <<	66		26,437	2
<u>Other</u>						
Insurance	18,439	363 <<	-42		18,034	1
Utilities	42,473	-198 <<	-99		42,572	2
Interest paid	54,138	0 <<	173		54,311	3
Other professional fees	9,772	120 <<	58		9,711	1
Miscellaneous	12,496	51	428		12,872	1
Total Operating	\$1,750,544	\$-11,040	13,721		\$1,775,305	100
Expansion livestock	\$16,829	8 <<	48		\$16,868	
Extraordinary expense	\$627	0	0		\$627	
Machinery depreciation					\$84,559	
Building depreciation					\$53,614	
TOTAL ACCRUAL EXPENSES					\$1,930,974	

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 \$5,444.

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 \$307 per farm in 2008, and that decrease is added to cash rent to determine the correct 2008 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 \$-11,040 and total change in accounts payable equals \$13,721.

Income Statement - Receipts

Cash and accrual farm receipts are presented in the following table. Total cash receipts averaged \$2,117,316 per farm. Total accrual receipts averaged \$2,194,958 per farm. Accrual receipts were greater than cash receipts due primarily to dairy herd growth and increases in crop inventory. Cow numbers increased an average of 15 head per farm and the homegrown feed inventory per farm increased \$63,197. Homegrown feed inventory per cow increased \$128 from beginning to end of year.

Table 5.

CASH AND ACCRUAL FARM RECEIPTS 224 New York Dairy Farms, 2008

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts	Percent
Milk sales	\$1,960,867				\$-39,114		\$1,921,753	87
Dairy cattle	77,390		\$46,852		855		125,097	6
Dairy calves	9,648		1,071		-29		10,690	<1
Other livestock	3,733		895		-20		4,608	<1
Crops	16,979		63,197		1,748		81,924	4
Government receipts	17,440		22		-61		17,400	1
Custom machine work	2,753				876		3,629	<1
Gas tax refund	222				-9		213	<1
Other	28,285				1,360		29,645	1
- Nonfarm noncash capital transfer ⁹			(-) 0				(-) 0	
Total	\$2,117,316		\$112,037		\$-34,394		\$2,194,958	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 2007 to 2008. 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 2008 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 \$37,092 per farm in 2008. On the average, farm real estate appreciated \$61,255 or 4 percent of beginning fair market value. Machinery appreciated 3.3 percent while dairy cattle prices appreciated -4.9 percent in 2008.

Average data from 23 farms with the highest rates of return to all capital (without appreciation) are compared with the 224 farm average in Table 8 and in many of the following tables. Net farm income without appreciation averaged \$956,523 per farm on the top 10 percent farms, 262 percent greater than the 224-farm average.

Table 6.

NET FARM INCOME 224 New York Dairy Farms, 2008

Item	Average 224 Farms		Average Top 10% Farms ¹⁰	
	Per Farm	Per Cow	Per Farm	Per Cow
Total accrual receipts	\$2,194,958		\$4,657,215	
+ Appreciation: Livestock	-48,407		-25,913	
Machinery	19,446		18,999	
Real Estate	61,255		51,208	
Other Stock & Certificates	<u>4,798</u>		<u>12,108</u>	
= Total including appreciation	\$2,232,050		\$ 4,713,617	
- Total accrual expenses	<u>1,930,974</u>		<u>3,700,692</u>	
= Net Farm Income (with appreciation)	\$301,076	\$727	\$1,012,925	\$1,242
Net Farm Income (without appreciation)	\$263,984	\$637	\$956,523	\$1,173

¹⁰Average of 23 farms with highest rates of return to all capital (without appreciation).

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

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

Table 7.

LABOR AND MANAGEMENT INCOME
224 New York Dairy Farms, 2008

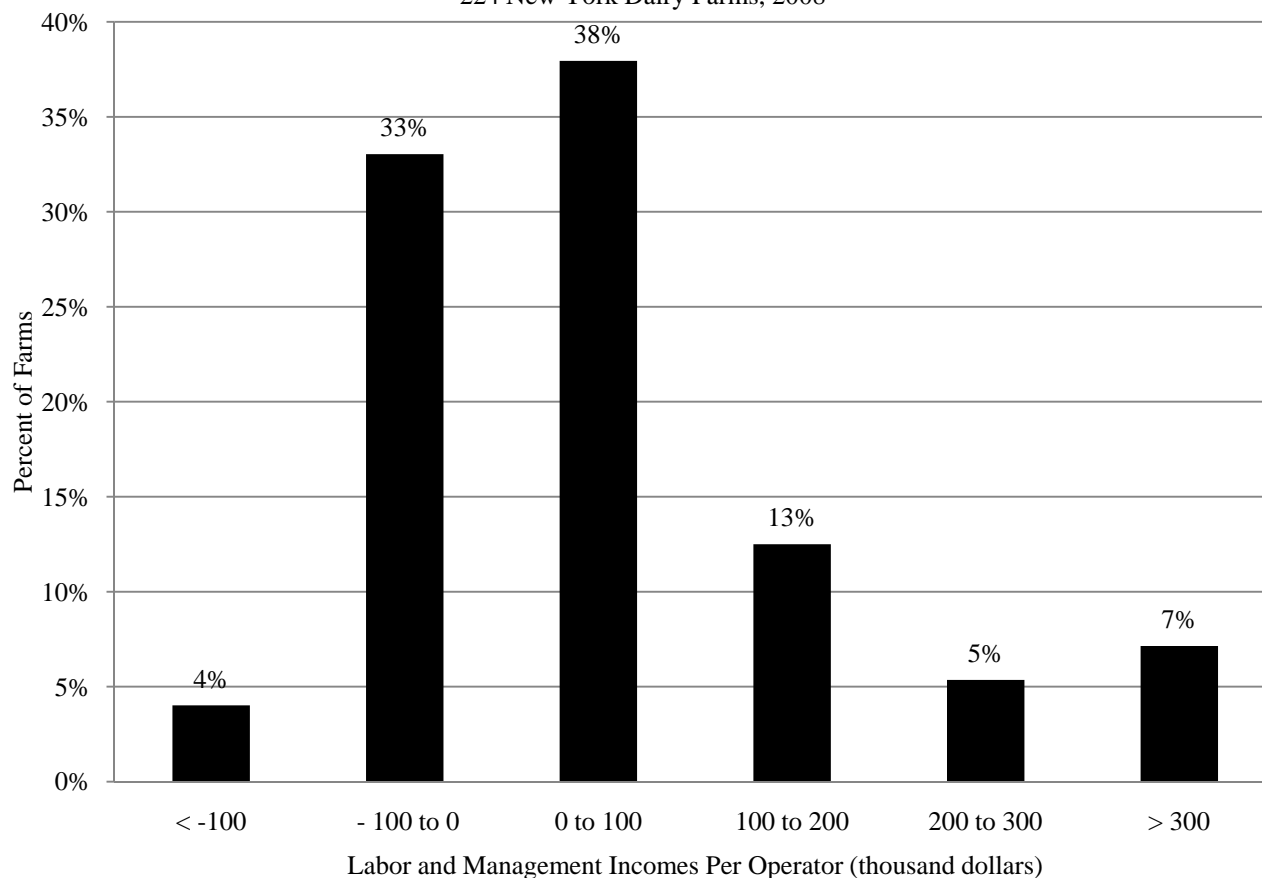
Item	Average 224 Farms	Average Top 10% Farms ¹¹
Net farm income without appreciation	\$ 263,984	\$956,523
- Family labor unpaid @ \$2,500 per month	4,115	1,109
- Real interest @ 5% on \$2,584,861 equity capital for average & \$4,967,136 for the top 10% farms	<u>129,243</u>	<u>248,357</u>
= Labor & Management Income (1.72 operators)	\$130,626	(1.92 operators) \$707,058
Labor & Management Income per Operator	\$75,945	\$368,259

¹¹Average of 23 farms with highest rates of return to all capital (without appreciation).

Labor and management income per operator averaged \$75,945 on these 224 dairy farms in 2008. The range in labor and management income per operator was from less than \$-425,000 to more than \$1,400,000. Returns to labor and management were negative on 37 percent of the farms. Labor and management incomes per operator were between \$0 and \$200,000 on 51 percent of the farms while 12 percent showed labor and management incomes of \$200,000 or more per operator.

Chart 4.

DISTRIBUTION OF LABOR AND MANAGEMENT INCOMES PER OPERATOR
224 New York Dairy Farms, 2008



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
224 New York Dairy Farms, 2008**

Item	Average 224 Farms	Average Top 10% Farms ¹²
Net farm income with appreciation	\$301,076	\$1,012,925
- Family labor unpaid at \$2,500 per month	4,115	1,109
- Value of operators' labor & management	<u>79,856</u>	<u>117,819</u>
= Return to equity capital with appreciation	\$217,105	\$893,997
+ Interest paid	<u>54,311</u>	<u>92,145</u>
= Return to all capital with appreciation	\$271,416	\$986,142
Return to equity capital without appreciation	\$180,013	\$837,595
Return to all capital without appreciation	\$234,324	\$929,741
Rate of return on average equity capital:		
with appreciation	8.4%	18.0%
without appreciation	7.0%	16.9%
Rate of return on all capital:		
with appreciation	7.2%	14.0%
without appreciation	6.2%	13.2%
Net farm income from operations ratio	0.12	0.21

¹²Average of 23 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
224 New York Dairy Farms, 2008**

Item	Quartile by Return to All Capital With Appreciation			
	Lowest 25%	3rd 25%	2nd 25%	Top 25%
Return to all capital with appreciation	\$-51,356	\$21,225	\$187,613	\$928,180
Rate of return on all capital with appreciation	-4.7%	2.2%	6.8%	11.0%
Total returns to all labor & management	\$25,764	\$67,961	\$385,745	\$1,175,474
Worker equivalent	4.49	3.68	9.89	20.93
Return per worker equivalent	\$5,738	\$18,468	\$39,004	\$56,162
Returns/hour (2,760 hours/worker/year)	\$2.08	\$6.69	\$14.13	\$20.35

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.

**2008 FARM BUSINESS AND NONFARM BALANCE SHEET
224 New York Dairy Farms, 2008**

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$22,012	\$18,209	Accounts payable	\$35,149	\$48,919
Accounts receivable	177,391	142,997	Operating debt	74,816	97,564
Prepaid expenses	5,577	6,501	Short term	5,543	4,359
Feed & supplies	<u>391,026</u>	<u>442,269</u>	Advanced gov't. receipt	22	0
Total Current	\$596,007	\$609,976	Current portion:		
			Intermediate	81,731	101,358
			Long term	<u>34,693</u>	<u>37,223</u>
			Total Current	\$231,954	\$289,423
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy Cows:			Structured debt		
owned	\$613,929	\$610,702	1-10 years	\$443,142	\$479,583
leased	423	311	Financial lease		
Heifers	360,298	363,137	(cattle & machinery)	2,476	1,954
Bulls & other livestock	5,349	6,147	Farm Credit stock	<u>1,163</u>	<u>1,186</u>
Mach. & equip. owned	591,697	675,842	Total Intermediate	\$446,781	\$482,724
Mach. & equip. leased	2,053	1,643			
Farm Credit stock	1,163	1,186	<u>Long Term</u>		
Other stock & certificates	<u>69,861</u>	<u>78,840</u>	Structured debt		
Total Intermediate	\$1,644,773	\$1,737,810	≥ 10 years	\$455,649	\$498,287
<u>Long Term</u>			Financial lease		
Land & buildings:			(structures)	<u>566</u>	<u>440</u>
owned	\$1,423,157	\$1,562,816	Total Long Term	\$456,215	\$498,727
leased	<u>566</u>	<u>440</u>			
Total Long Term	\$1,423,723	\$1,563,256	Total Farm Liabilities	\$1,134,950	\$1,270,873
Total Farm Assets	\$3,664,504	\$3,911,041	FARM NET WORTH	\$2,529,554	\$2,640,168
Nonfarm Assets ¹³	Jan.1	Dec. 31	Nonfarm Liabilities ¹³ & Net Worth	Jan. 1	Dec. 31
Personal cash, checking & savings	\$10,225	\$8,558	Nonfarm Liabilities	\$1,760	\$2,293
Cash value life insurance	32,078	35,091	NONFARM NET WORTH	\$322,637	\$302,761
Nonfarm real estate	159,979	162,157	FARM & NONFARM ¹⁴	Jan. 1	Dec. 31
Auto (personal share)	9,079	9,978	Total Assets	\$3,988,901	\$4,216,094
Stocks & bonds	94,862	68,232	Total Liabilities	<u>1,136,710</u>	<u>1,273,166</u>
Household furnishings	8,782	9,038	TOTAL FARM & NON-		
All other	<u>9,391</u>	<u>11,998</u>	FARM NET WORTH	\$2,852,191	\$2,942,928
Total Nonfarm	\$324,397	\$305,053			

¹³Average of 78 farms completing the nonfarm balance sheet.

¹⁴Sum of average farm values for 224 farms and nonfarm values for 78 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
224 New York Dairy Farms, 2008

Item	Average 224 Farms	Average Top 10% Farms ¹⁵		
<u>Farm Financial Ratios:</u>				
Percent equity	68%	70%		
Debt/asset ratio: total	0.32	0.30		
long term	0.32	0.26		
intermediate & current	0.33	0.32		
Leverage Ratio:	0.48	0.42		
Current Ratio:	2.11	2.59		
Working Capital: \$320,553 Dollars as % of Total Expenses:	17%	\$902,719 24%		
<u>Farm Debt Analysis:</u>				
Accounts payable as % of total debt	4%	2%		
Long term liabilities as % of total debt	39%	31%		
Current & intermediate liabilities as % of total debt	61%	69%		
Cost of term debt (weighted average)	4.8%	5.0%		
<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	\$3,009	\$2,907	\$2,632	\$3,089
Long term debt	1,181	1,141	811	952
Intermediate & long term	2,324	2,245	1,940	2,277
Intermediate & current debt	1,828	1,766	1,821	2,137

¹⁵Average of 23 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
224 New York Dairy Farms, 2008

Item	Real Estate	Machinery & Equipment	Livestock
Value beginning of year	\$1,423,157	\$591,697	\$979,577
Purchases	\$212,003 ¹⁶	\$156,137	
+ nonfarm noncash transfer ¹⁷	0	0	
- Lost capital	71,548		
- Net sales	8,438	6,878	
- Depreciation	<u>53,614</u>	<u>84,559</u>	
= Net Investment	78,403	64,700	48,818
+ Appreciation	<u>61,255</u>	<u>19,446</u>	<u>-48,407</u>
Value end of year	\$1,562,816	\$675,842	\$979,987

¹⁶\$39,864 land and \$172,139 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)
224 New York Dairy Farms, 2008**

Item	Average 224 Farms	Average Top 10% Farms ¹⁹
Beginning of year farm net worth	\$2,529,554	\$4,758,029
Net farm income without appreciation	\$263,984	\$956,523
+ Nonfarm cash income	7,155	7,903
- Personal withdrawals & family expenditures and income taxes, excluding nonfarm borrowings	<u>145,655</u>	<u>474,160</u>
RETAINED EARNINGS	+ \$125,484	+ \$490,266
Nonfarm noncash transfers to farm	\$0	\$0
+ Cash used in business from nonfarm capital	20,141	14,103
- Note or mortgage from farm real estate sold (nonfarm)	<u>0</u>	<u>0</u>
CONTRIBUTED/WITHDRAWN CAPITAL	+ \$20,141	+ \$14,103
Appreciation	\$37,092	\$56,402
- Lost capital	<u>71,548</u>	<u>138,223</u>
CHANGE IN VALUATION EQUITY	+ \$-34,456	+ \$-81,821
IMBALANCE/ERROR	<u>-\$555</u>	<u>-\$4,335</u>
End of year farm net worth ¹⁸	\$2,640,168	\$5,176,242
<u>Change in Net Worth</u>		
Without appreciation	\$73,522	\$361,811
With appreciation	\$110,614	\$418,212

¹⁸May not add due to rounding.

¹⁹Average of 23 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 224 New York Dairy Farms, 2008

Item	Average 224 Farms	
<u>Cash Flow from Operating Activities</u>		
Cash farm receipts	\$2,117,316	
- Cash farm expenses	1,750,544	
- Extraordinary expense	<u>627</u>	
= Net cash farm income		\$366,144
Personal withdrawals & family expenses including nonfarm debt payments	\$146,371	
- Nonfarm income	<u>7,155</u>	
- Net cash withdrawals from the farm		<u>\$139,216</u>
= Net Provided by Operating Activities		\$226,928
<u>Cash Flow From Investing Activities</u>		
Sale of assets: machinery	\$6,878	
+ real estate	8,438	
+ other stock & certificates	<u>3,742</u>	
= Total asset sales		\$19,057
Capital purchases: expansion livestock	\$16,829	
+ machinery	156,137	
+ real estate	212,003	
+ other stock & certificates	<u>7,923</u>	
- Total invested in farm assets		<u>\$392,892</u>
+ Net Provided by Investment Activities		\$-373,834
<u>Cash Flow From Financing Activities</u>		
Money borrowed (intermediate & long term)	\$254,625	
+ Money borrowed (short term)	5,659	
+ Increase in operating debt	22,748	
+ Cash from nonfarm capital used in business	20,141	
+ Money borrowed - nonfarm	<u>716</u>	
= Cash inflow from financing		\$303,888
Principal payments (intermediate & long term)	\$153,392	
+ Principal payments (short term)	6,843	
+ Decrease in operating debt	<u>0</u>	
- Cash outflow for financing		<u>\$160,235</u>
= Net Provided by Financing Activities		\$143,654
<u>Cash Flow From Reserves</u>		
Beginning farm cash, checking & savings		\$22,012
- Ending farm cash, checking & savings		<u>\$18,209</u>
= Net Provided from Reserves		\$3,804
<u>Imbalance (error)</u>		\$551

Table 15.

ANNUAL CASH FLOW DATA
224 New York Dairy Farms, 2008

Item	Average 224 Farms			Average Top 10% Farms ²¹		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Average number of cows and cwt. milk		414	99,884		816	214,213
<u>Accrual Operating Receipts</u>						
Milk	\$1,921,753	\$4,640	\$19.24	\$4,092,378	\$5,018	\$19.10
Dairy cattle	125,097	302	1.25	268,794	330	1.25
Dairy calves	10,690	26	0.11	26,049	32	0.12
Other livestock	4,608	11	0.05	687	1	0.00
Crops	81,924	198	0.82	187,882	230	0.88
Miscellaneous receipts	<u>50,887</u>	<u>123</u>	<u>0.51</u>	<u>81,426</u>	<u>100</u>	<u>0.38</u>
Total	\$2,194,958	\$5,299	\$21.98	\$4,657,215	\$5,710	\$21.74
<u>Accrual Operating Expenses</u>						
Hired labor	\$ 278,995	\$ 674	\$ 2.79	572,409	702	2.67
Dairy grain & concentrate	583,355	1,408	5.84	1,188,408	1,457	5.55
Dairy roughage	32,218	78	0.32	68,305	84	0.32
Nondairy feed	78	0	0.00	0	0	0.00
Professional nutritional services	691	2	0.01	4,808	6	0.02
Machinery hire, rent & lease	36,526	88	0.37	59,221	73	0.28
Machinery repairs & vehicle expense	87,195	211	0.87	149,096	183	0.70
Fuel, oil & grease	91,109	220	0.91	165,422	203	0.77
Replacement livestock	8,475	20	0.08	10,770	13	0.05
Breeding	26,365	64	0.26	49,401	61	0.23
Veterinary & medicine	68,054	164	0.68	133,342	163	0.62
Milk marketing	85,025	205	0.85	168,544	207	0.79
Bedding	34,389	83	0.34	58,592	72	0.27
Milking supplies	39,193	95	0.39	75,927	93	0.35
Cattle lease	1,034	2	0.01	1,857	2	0.01
Custom boarding	38,631	93	0.39	69,098	85	0.32
bST expense	23,558	57	0.24	62,119	76	0.29
Livestock professional fees	5,066	12	0.05	11,698	14	0.05
Other livestock expense	9,712	23	0.10	14,650	18	0.07
Fertilizer & lime	47,404	114	0.47	71,622	88	0.33
Seeds & plants	33,053	80	0.33	58,192	71	0.27
Spray/other crop expense	21,178	51	0.21	31,668	39	0.15
Crop professional fees	4,631	11	0.05	18,923	23	0.09
Land, building & fence repair	34,178	83	0.34	69,331	85	0.32
Taxes	21,254	51	0.21	34,207	42	0.16
Real estate rent & lease	26,437	64	0.26	44,884	55	0.21
Insurance	18,034	44	0.18	28,641	35	0.13
Utilities	42,572	103	0.43	80,876	99	0.38
Miscellaneous	<u>22,583</u>	<u>54</u>	<u>0.23</u>	<u>38,362</u>	<u>47</u>	<u>0.18</u>
Total Less Interest Paid	\$1,720,995	\$4,155	\$ 17.23	\$3,340,373	\$4,096	\$15.59
<u>Net Accrual Operating Income</u>						
(without interest paid)	\$ 473,964	\$1,144	\$ 4.75	\$1,316,842	\$1,615	\$ 6.15
- Change in livestock & crop inventory	112,037	270	1.12	277,351	340	1.29
- Change in accounts receivable	-34,394	-83	-0.34	-96,227	-118	-0.45
- Change in feed & supply inventory	-11,040	-27	-0.11	43,031	53	0.20
+ Change in accounts payable ²⁰	13,548	33	0.14	-6,353	-8	-0.03
NET CASH FLOW	\$ 420,909	\$1,016	\$4.21	\$1,086,335	\$1,332	\$5.07
- Net personal withdrawals & family exp.	<u>137,550</u>	<u>332</u>	<u>1.38</u>	<u>465,857</u>	<u>571</u>	<u>2.17</u>
Available for Farm Debt Payments & Invest.	\$ 283,359	\$ 684	\$ 2.84	\$ 620,478	\$ 761	\$2.90
- Farm debt payments	<u>228,618</u>	<u>552</u>	<u>2.29</u>	<u>456,942</u>	<u>560</u>	<u>2.13</u>
Cash available for Farm Investments	\$ 54,741	\$ 132	\$ 0.55	\$ 163,536	\$ 201	\$0.76

²⁰Exclude change in interest account payable.²¹Average of 23 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 2007 and 2008.

Table 16.

FARM DEBT PAYMENTS PLANNED Same 202 New York Dairy Farms, 2007 & 2008

	Same 202 Dairy Farms			Same 19 Top 10% Farms		
	2008 Payments		Planned	2008 Payments		Planned
Debt Payments	Planned	Made	2009	Planned	Made	2009
Long term	\$59,166	\$66,242	\$56,517	\$66,521	\$68,233	\$55,634
Intermediate term	129,312	141,059	134,346	281,122	342,155	262,410
Short term	2,378	5,341	3,292	5,777	18,014	610
Operating (net reduction)	11,858	11,993	1,964	89,579	9,383	3,200
Accts. payable (net reduction)	<u>1,703</u>	<u>2,859</u>	<u>523</u>	<u>15,480</u>	<u>12,975</u>	<u>0</u>
Total	\$204,417	\$227,494	\$196,642	\$458,480	\$450,760	\$321,853
Per cow	\$503	\$560		\$653	\$642	
Per cwt. 2008 milk	\$2.10	\$2.33		\$2.47	\$2.43	
Percent of 2008 milk receipts	11%	12%		13%	13%	

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 Same 202 New York Dairy Farms, 2007 & 2008

Item	Average	Item	Average
<u>Cash Flow Coverage Ratio</u>		<u>Debt Coverage Ratio</u>	
Cash farm receipts	\$2,075,390	Net farm income (without apprec.)	\$ 244,324
- Cash farm expenses	1,718,024	+ Depreciation	133,935
+ Interest paid (cash)	54,016	+ Interest paid (accrual)	54,208
- Net personal withdrawals from farm ²²	<u>139,205</u>	- Net personal withdrawals from farm ²²	<u>139,205</u>
(A) = Amount Available for Debt Service	\$272,177	(A') = Repayment Capacity	\$293,262
(B) = Debt Payments Planned for 2008		(B) = Debt Payments Planned for 2008	
(as of December 31, 2007)	\$204,417	(as of December 31, 2007)	\$204,417
(A/B)= Cash Flow Coverage Ratio for 2008	1.33	(A'/B)= Debt Coverage Ratio for 2008	1.43

Same 19 Top 10% Dairy Farms, 2007 & 2008			
(A) = Amount Available for Debt Service	\$513,196	(A') = Repayment Capacity	\$671,290
(B) = Debt Payments Planned for 2008	458,480	(B) = Debt Payments Planned for 2008	458,480
(A/B)= Cash Flow Coverage Ratio for 2008	1.12	(A'/B)= Debt Coverage Ratio for 2008	1.46

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

Table 18.

DEBT TO ASSET RATIO VS. CASH FLOW COVERAGE 224 New York Dairy Farms, 2008

Debt/Asset Ratio	Cash Flow Coverage Ratio (Farm & Nonfarm)			
	<.5	.5 to .99	1 to 1.49	>=1.5
	percent of farms			
<40%	8.5	10.7	13.9	39.3
40 to 60%	2.2	8.0	4.9	6.7
60% & over	1.3	1.8	2.2	0.5

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 224 New York Dairy Farms, 2008

Item	Average 224 Farms			Average Top 10% Farms ²³		
	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
<u>Land</u>						
Tillable	437	446	883	701	769	1,470
Nontillable pasture	38	13	51	12	10	22
Other nontillable	<u>132</u>	<u>5</u>	<u>137</u>	<u>111</u>	<u>3</u>	<u>114</u>
Total	607	464	1,071	824	782	1,606
<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	218	433	3.5 tn DM	23	727	3.7 tn DM
Corn silage	202	330	19.9 tn	23	565	22.2 tn
			6.8 tn DM			7.5 tn DM
Other forage	16	65	3.3 tn DM	2	131	5.3 tn DM
Total forage	218	743	4.8 tn DM	23	1,303	5.4 tn DM
Corn grain	110	219	144 bu	12	252	153 bu
Oats	14	33	63 bu	0	0	0.0 bu
Wheat	18	92	65 bu	3	88	75 bu
Other crops	54	100		7	73	
Tillable pasture	32	87		2	16	
Idle	25	84		2	16	

²³Average of 23 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 6 of the 224 farms produced hay or hay crop silage in 2008. Ninety percent produced corn silage, 49 percent grew and harvested corn grain, and 6 percent grew oats for grain. Although 32 farms used tillable pasture in 2008, only 29 of the 224 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 224 New York Dairy Farms, 2008

Item	Average 224 Farms	Average Top 10% Farms ²⁴
Total tillable acres per cow	2.14	1.80
Total forage acres per cow	1.76	1.60
Harvested forage dry matter, tons per cow	8.49	8.57

²⁴Average of 23 farms with highest rates of return to all capital (without appreciation).

Fourteen cooperators allocated direct crop related expenses to hay crop and corn. The data in Table 21 have been compiled to show the average crop related production expenses per acre and per unit for these crops. Note that labor and machinery costs have not been included. Total corn expenses are allocated to corn silage and corn grain based on the proportion of acres in each crop. In Table 21, the total per tillable acre represents 218 farms that grew forages. The expenses for hay and corn crops are for 14 farms.

Table 21.

**CROP RELATED ACCRUAL EXPENSES
New York Dairy Farms, 2008**

Expenses	Average 218 Farms	Average 13 Farms		Average 14 Farms		
	Total per Tillable Acre	Hay Crop		All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Shell Bu.
		Per Acre	Per Ton DM			
Fertilizer & lime	\$49.25	\$51.46	\$10.80	\$14.76	\$12.79	\$0.29
Seeds & plants	29.13	20.08	2.68	5.74	8.92	0.19
Spray & other crop exp.	<u>20.73</u>	<u>19.53</u>	<u>5.70</u>	<u>5.12</u>	<u>6.69</u>	<u>0.16</u>
Total	\$99.11	\$91.07	\$19.18	\$25.62	\$28.40	\$0.64
Ave. Top 10% Farms: ²⁵	Average 23 Farms	-----Only 3 Farms Reported-----				
Fertilizer & lime	\$52.16	-----Only 3 Farms Reported-----				
Seeds & plants	41.81	-----Only 3 Farms Reported-----				
Spray & other crop exp.	<u>20.57</u>	-----Only 3 Farms Reported-----				
Total	\$114.54	-----Only 3 Farms Reported-----				

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

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

Table 22.

**ACCRUAL MACHINERY EXPENSES
218 New York Dairy Farms That Grow Forages, 2008**

Machinery Expense Item	Average 218 Farms		Average Top 10% Farms ²⁶	
	Total Expenses	Per Tillable Acre	Total Expenses	Per Tillable Acre
Fuel, oil & grease	\$93,544	\$103.04	\$165,422	\$112.50
Machinery repairs & vehicle expense	89,518	98.61	149,096	101.40
Machine hire, rent & lease	37,346	41.14	59,221	40.28
Interest (5%)	32,631	35.94	58,001	39.45
Depreciation	<u>86,862</u>	<u>95.68</u>	<u>161,229</u>	<u>109.65</u>
Total	\$339,901	\$374.41	\$592,969	\$403.28

²⁶Average of 23 farms that grow forages with highest rates of return to all capital (without appreciation).

Table 23.

**CROP RELATED ACCRUAL EXPENSES FOR HAY CROP PRODUCTION PER ACRE
14 New York Dairy Farms, 2008**

Item	Tons of Hay Crop Dry Matter Per Acre		
	Less than 3	3.0 to 3.5	More than 3.5
Hay crop, tons DM per acre	2.8	3.0	4.2
Farms reporting crop expense breakdowns	5	4	5
Average number hay crop acres for farms reporting	365	419	408
<u>Accrual Hay Crop Expenses Per Acre</u>			
Fertilizer & lime	\$29.58	\$45.68	\$71.52
Seeds & plants	12.60	24.50	21.80
Spray & other crop expenses	<u>0.56</u>	<u>31.84</u>	<u>25.01</u>
Total	\$42.74	\$102.02	\$118.33
<u>Accrual Hay Crop Expenses Per Ton DM</u>			
Fertilizer & lime	\$12.85	\$14.57	\$18.14
Seeds & plants	4.77	7.98	5.54
Spray & other crop expenses	<u>0.19</u>	<u>10.12</u>	<u>6.14</u>
Total	\$17.81	\$32.67	\$29.82

Table 24.

**CROP RELATED ACCRUAL EXPENSES FOR CORN PRODUCTION PER ACRE
14 New York Dairy Farms, 2008**

Item	Tons Corn Silage Per Acre			Dry Shelled Bushels of Corn Grain Per Acre	
	<18	18-24	>24	<145	>145
Corn yield per acre	17.3	21.3	26.2	131	163
Farms reporting crop expense breakdowns	5	5	4	3	3
Average number corn acres for farms reporting	256	249	364	110	149
<u>Accrual Corn Crop Expenses Per Acre</u>					
Fertilizer & lime	\$108.96	\$85.22	\$60.15	\$79.51	\$125.11
Seeds & plants	59.97	71.18	52.56	67.04	57.58
Spray & other crop expenses	<u>37.25</u>	<u>47.94</u>	<u>59.96</u>	<u>35.62</u>	<u>73.44</u>
Total	\$206.18	\$204.34	\$172.67	\$182.17	\$256.13
<u>Accrual Corn Crop Expenses Per Ton DM or Bushel²⁷</u>					
	Per Ton DM of Corn Silage			Per Dry Shell Bushel of Corn Grain	
Fertilizer & lime	\$17.93	\$12.19	\$7.10	\$0.58	\$0.75
Seeds & plants	9.90	9.98	6.35	0.52	0.35
Spray & other crop expense	<u>6.28</u>	<u>6.65</u>	<u>7.26</u>	<u>0.28</u>	<u>0.46</u>
Total	\$34.11	\$28.82	\$20.71	\$1.38	\$1.56

²⁷Total corn expenses are allocated to corn silage and corn grain based on the proportion of acres in each crop.

It is important to observe that as hay crop yields per acre increased, crop related expenses per acre increased. Hay crop expenses per ton of dry matter varied as yields increased. However, the highest cost per ton of dry matter is reported for the yield of 3.0 to 3.5 tons per dry matter. For corn silage, crop expenses per ton of dry matter are lowest at the highest level of production. Corn grain shows the highest cost per acre for the higher yield, with the low yield category producing the lowest cost per bushel. A limited number of cooperators providing data by crop limits the strength of these conclusions.

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 25.

DAIRY HERD INVENTORY 224 New York Dairy Farms, 2008

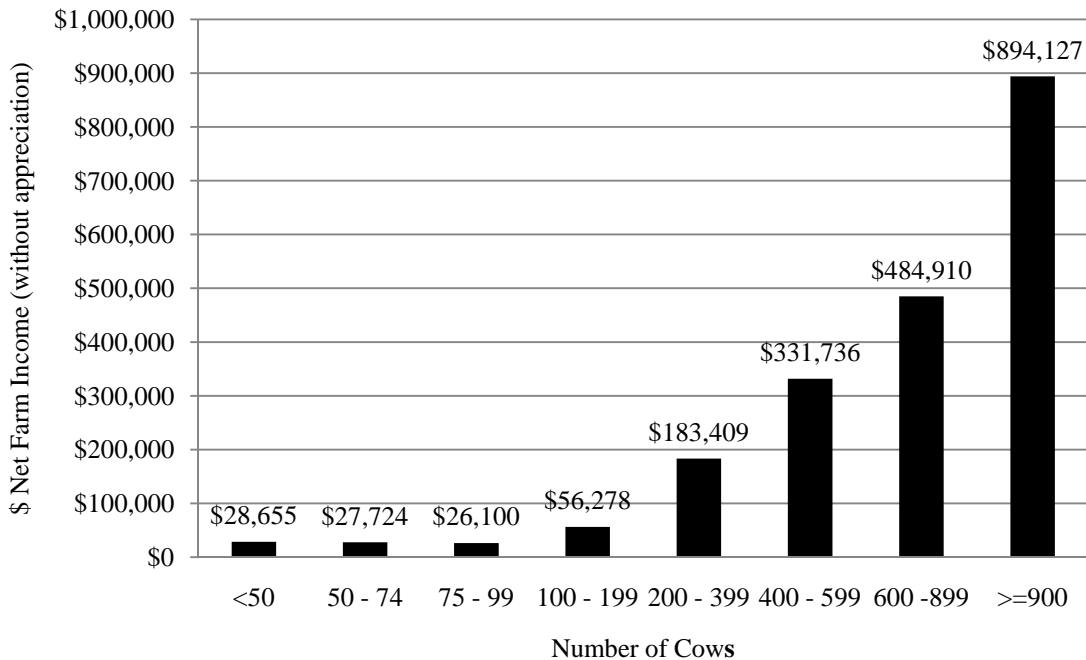
Item	Dairy Cows		Heifers					
	No.	Value	Bred		Open		Calves	
	No.	Value	No.	Value	No.	Value	No.	Value
Beg. year (owned)	403	\$613,929	124	\$188,657	118	\$113,817	95	\$57,825
+ Change w/o apprec.		23,536		12,933		10,382		1,071
+ Appreciation		<u>-26,763</u>		<u>-8,532</u>		<u>-6,926</u>		<u>-6,090</u>
End year (owned)	418	\$610,702	133	\$193,059	129	\$117,273	97	\$52,806
End including leased	422							
Average number	414		348	(all age groups)				
<u>Average Top 10% Farms:²⁸</u>								
Beg. year (owned)	779	\$1,126,183	255	\$361,659	227	\$203,918	192	\$114,293
+ Change w/o apprec.		50,274		32,518		31,132		15
+ Appreciation		<u>-6,867</u>		<u>-6,784</u>		<u>-5,601</u>		<u>-6,591</u>
End year (owned)	815	\$1,169,589	276	\$387,393	260	\$229,449	194	\$107,717
End including leased	823							
Average number	816		698	(all age groups)				

²⁸Average of 23 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. In 2008, there was a consistent increase in net farm incomes as herd size increased (Chart 5). For more information on herd size comparisons, see pages 48-57.

Chart 5.

NET FARM INCOME (WITHOUT APPRECIATION) BY HERD SIZE 224 New York Dairy Farms, 2008



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 175 farms that provided the data.

Table 26.

**MILK PRODUCTION
224 New York Dairy Farms, 2008**

Item	Average 224 Farms	Average Top 10% Farms ²⁹
Total milk sold, pounds	9,988,372	21,421,264
Milk sold per cow, pounds	24,115	26,265
Butterfat per cow, pounds	883	940
Protein per cow, pounds	741	795
Total butterfat and protein per cow, pounds	1,624	1,735
Other solids per cow, pounds	1,383	1,493
Total components per cow, pounds	3,006	3,228

²⁹Average of 23 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 2008, farms with higher milk production per cow and more cows did have higher labor and management incomes per operator.

Table 27.

**MILK SOLD PER COW AND FARM INCOME MEASURES
224 New York Dairy Farms, 2008**

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	25	120	\$36,215	\$303	\$-3,220
16,000 to 17,999	16	130	35,758	275	-11,259
18,000 to 19,999	27	113	66,072	582	8,383
20,000 to 21,999	40	249	133,261	535	21,864
22,000 to 23,999	38	477	181,618	381	32,202
24,000 to 25,999	51	646	487,751	756	145,346
26,000 & over	27	875	694,954	794	208,964

The relationship between milk output per cow and net farm income on all dairy farms is shown in Table 27 above and is diagrammed in Charts 6 and 7 on page 26. Each spot on each scatter diagram represents one of the 224 Farms.

Historically, net farm income per cow has increased as pounds of milk sold per cow increased. This relationship was generally true in 2008 (see Table 27 and Charts 6 and 7). As pounds of milk sold per cow increased, total net farm income and also net farm income per cow increased 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 8 and 9 indicate that there are little statistical relationship in the 2008 data.

Chart 6.

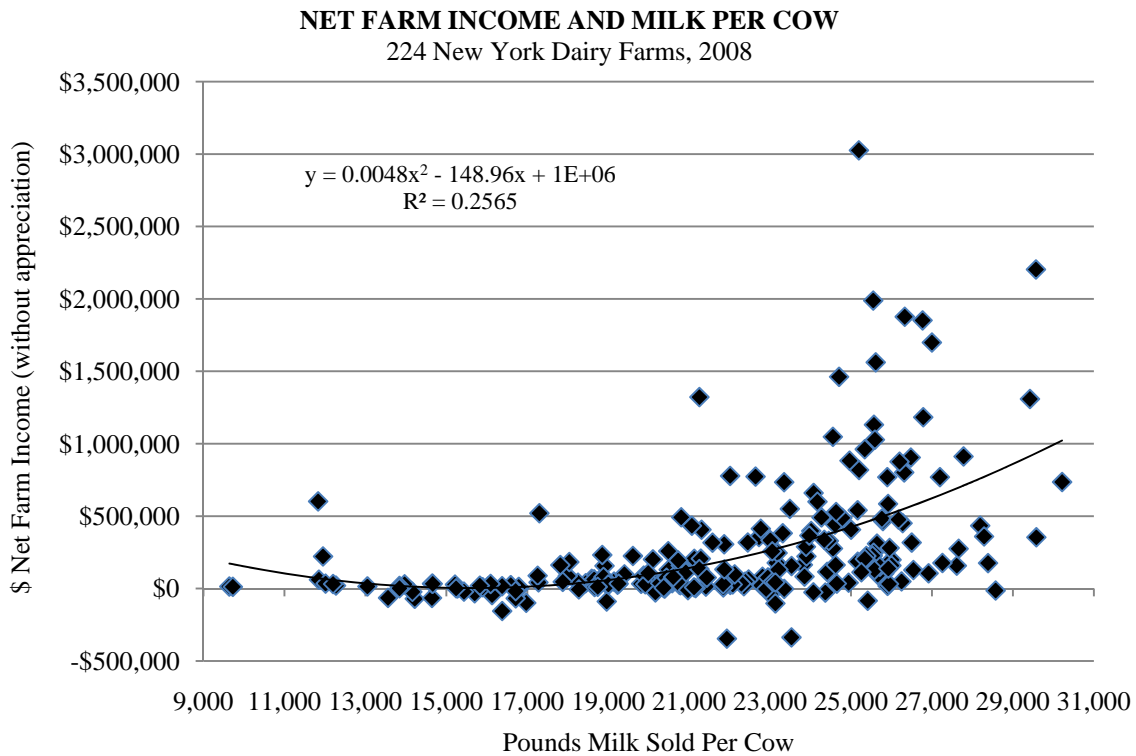
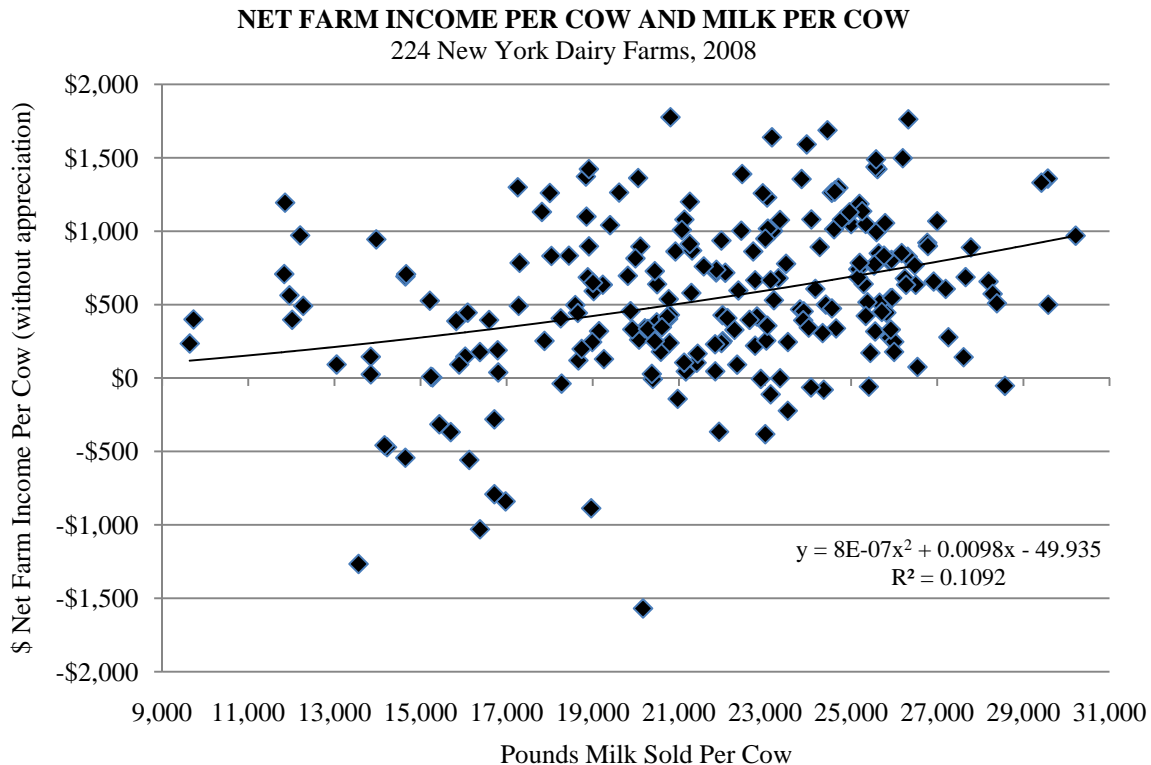


Chart 7.



Charts 8 and 9 show relationships between cull rates and milk production and net farm income per cow. For the 2008 year, supplementary information concerning dairy replacements was collected from 36 participating farms. The culling chart (Table 28) reports the decile range of reported factors for the different information that was collected. The average culling rate was 33 percent, sell rate was 26 percent, and death rate was 7 percent. The average number of cows sold for beef equaled 106, seven 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 8.

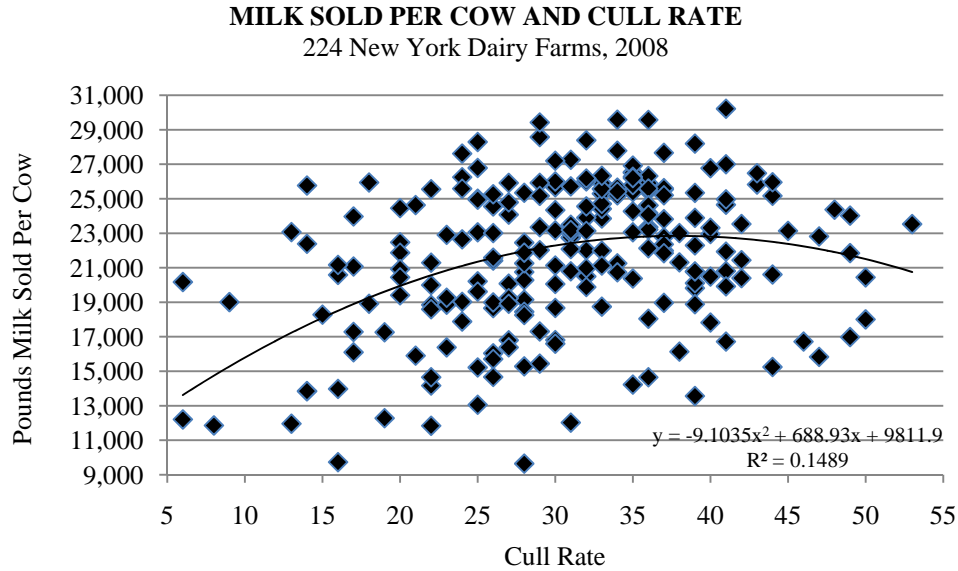


Chart 9.

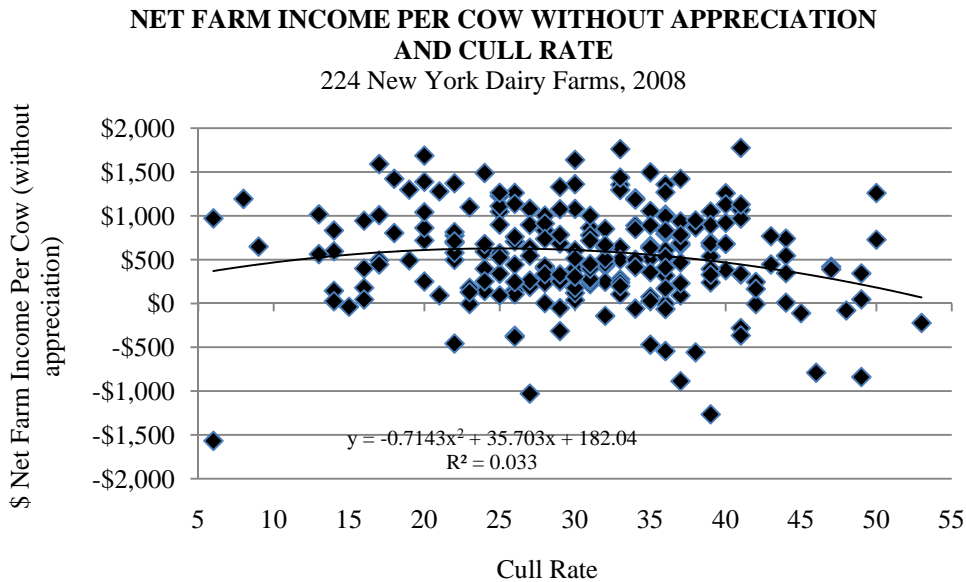


Table 28.

CULLING RATE AND DAIRY REPLACEMENT INFORMATION
New York Dairy Farms, 2008

Decile	Sell Rate	Death Rate	Cull Rate	Value of Cows Sold	Value of Animals Purchased	Percent of Replacements Purchased	Percent of Heifers Custom Raised
	-----224 Farms ³⁰ -----				\$/head (50 Farms)	-----36 Farms ³⁰ -----	
1	10%	1%	14%	\$259	\$1,114	0%	0%
2	16	3	22	406	1,399	0	0
3	19	4	25	486	1,486	0	0
4	22	5	28	529	1,682	0	0
5	24	6	30	590	1,920	0	0
6	26	6	33	641	2,134	0	0
7	27	8	35	706	2,339	0	9
8	29	9	37	783	2,565	0	39
9	32	11	40	1,001	3,904	9	59
10	39	15	46	1,939	5,124	32	98

³⁰224 DFBS farms provided culling information. Thirty-six 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 29.

**COST OF PRODUCING MILK, WHOLE FARM METHOD
224 New York Dairy Farms, 2008**

Item	Average 224 Farms	Average Top 10% Farms ³¹
Total Accrual Operating Expenses	\$1,775,305	\$3,432,519
Expansion Livestock, Accrual	+ 16,868	+ 12,125
1. Total Accrual Operating Expenses, Including Expansion Livestock	\$1,792,173	\$3,444,644
Total Accrual Receipts	\$2,194,958	\$4,657,215
Milk Sales, Accrual	<u>-1,921,753</u>	<u>- 4,092,378</u>
2. Total Accrual Nonmilk Receipts	<u>- \$273,205</u>	<u>-\$ 564,837</u>
3. Operating Cost of Producing Milk	\$1,518,968	\$2,879,808
Machinery Depreciation	+ 84,559	+ 161,229
Building Depreciation	+ 53,614	+ 93,828
Extraordinary Expense	<u>+ 627</u>	<u>+ 993</u>
4. Purchased Inputs Cost of Producing Milk	\$1,657,769	\$3,135,854
Family Labor Unpaid (\$2,500/month)	+ 4,115	+ 1,109
Real Interest on Equity Capital	+ 129,243	+ 248,357
Value of Operator's Labor & Management	<u>+ 79,856</u>	<u>+ 117,819</u>
5. Total Costs of Producing Milk	\$1,870,983	\$3,503,139
6. Costs Per Cwt.:		
Cwt. Milk Sold	99,884	214,213
Operating Cost Per Cwt.	\$15.21	\$13.44
Purchased Inputs Cost Per Cwt.	\$16.60	\$14.64
Total Cost Per Cwt.	\$18.73	\$16.35

³¹Average of 23 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 30. The whole farm method assumption that accrual nonmilk receipts represent nonmilk operating costs is used in computing net costs. A \$63,197 average increase in crop inventories per farm, (\$0.63 per hundredweight of milk), is included in crop sales on the 224 Farms. The top 10 percent farms had a \$163,643 average increase in crop inventories per farm (\$0.76 per hundredweight of milk).

Table 30.

**ITEMIZED COSTS OF PRODUCING MILK PER HUNDREDWEIGHT
BASED ON WHOLE FARM DATA
224 New York Dairy Farms, 2008**

Item	Average 224 Farms	Average Top 10% Farms ³³
Dairy grain and concentrate	\$5.84	\$5.55
Dairy roughage	0.32	0.32
Nondairy feed	0.00	0.00
Professional nutritional services	<u>0.01</u>	<u>0.02</u>
Total feed expense	\$6.17	\$5.89
Crop expense	1.06	0.84
- Crop sales and government receipts ³²	<u>0.99</u>	<u>1.02</u>
Net Feed and Crop Expense	\$6.24	\$5.71
Hired labor	2.79	2.67
Operator's and family labor	<u>0.84</u>	<u>0.56</u>
Total Labor Expense	\$3.63	\$3.23
Machine repairs, fuel and hire	2.15	1.75
Machinery depreciation	0.85	0.75
- Gas tax refunds and custom work	<u>0.04</u>	<u>0.01</u>
Net Machinery Expense	\$2.96	\$2.49
Replacement and expansion cattle purchases	0.25	0.11
- Sales and inventory growth	<u>1.41</u>	<u>1.37</u>
Net Cattle Purchases	\$-1.16	\$-1.26
Milk marketing costs	0.85	0.79
All other livestock expense excluding purchases	<u>2.46</u>	<u>2.21</u>
Net Livestock Expense	\$3.31	\$3.00
Real estate repairs, rent and taxes	0.81	0.69
Building depreciation	<u>0.54</u>	<u>0.44</u>
Total Real Estate Expense	\$1.35	\$1.13
Interest paid	0.54	0.43
Interest on equity	<u>1.29</u>	<u>1.16</u>
Total Interest Expense	\$1.83	\$1.59
Other operating and miscellaneous expenses	0.84	0.69
- Miscellaneous income	<u>0.30</u>	<u>0.23</u>
Net Miscellaneous Expenses	<u>\$ 0.54</u>	<u>\$0.46</u>
Total Cost of Producing Milk	\$18.73	\$16.35
Purchased Inputs Cost	\$16.60	\$14.64
Total Operating Cost	\$15.21	\$13.44

³²Non-crop related government payments may bias the results.

³³Average of 23 farms with highest rates of return to all capital (without appreciation).

Costs of producing milk per hundredweight are presented in the table below for 202 farms that participated both in 2007 and 2008. Costs of production increased in nearly all expense categories except net cattle purchases and interest expense when 2008 data were compared to 2007.

Table 31.

**ITEMIZED COSTS OF PRODUCING MILK PER HUNDREDWEIGHT
BASED ON WHOLE FARM DATA
Same 202 New York Dairy Farms, 2007 & 2008**

Item	2007	2008	Percent Change
Dairy grain and concentrate	\$4.90	\$5.90	20.4%
Dairy roughage	0.29	0.34	17.2%
Nondairy feed	0.00	0.00	
Professional nutritional services	<u>0.00</u>	<u>0.00</u>	
Total feed expense	\$5.19	\$6.24	20.2%
Crop expense	0.90	1.05	
- Crop sales and government receipts ³⁴	<u>0.84</u>	<u>1.03</u>	
Net Feed and Crop Expense	\$5.25	\$6.26	19.2%
Hired labor	2.73	2.84	
Operator's and family labor	<u>0.84</u>	<u>0.84</u>	
Total Labor Expense	\$3.57	\$3.68	3.1%
Machine repairs, fuel and hire	1.89	2.19	
Machinery depreciation	0.80	0.84	
- Gas tax refunds and custom work	<u>0.04</u>	<u>0.04</u>	
Net Machinery Expense	\$2.65	\$2.99	12.8%
Replacement and expansion cattle purchases	0.18	0.29	
- Sales and inventory growth	<u>1.34</u>	<u>1.38</u>	
Net Cattle Purchases	-\$1.16	-\$1.09	-6.0%
Milk marketing costs	0.80	0.87	
All other livestock expense excluding purchases	<u>2.30</u>	<u>2.44</u>	
Net Livestock Expense	\$3.10	\$3.31	6.8%
Real estate repairs, rent and taxes	0.83	0.81	
Building depreciation	<u>0.49</u>	<u>0.53</u>	
Total Real Estate Expense	\$1.32	\$1.34	1.5%
Interest paid	0.79	0.56	
Interest on equity	<u>1.17</u>	<u>1.26</u>	
Total Interest Expense	\$1.96	\$1.82	-7.1%
Other operating and miscellaneous expenses	0.84	0.86	
- Miscellaneous income	<u>0.29</u>	<u>0.29</u>	
Net Miscellaneous Expenses	<u>\$0.55</u>	<u>\$0.57</u>	3.6%
Total Cost of Producing Milk	\$17.27	\$18.89	9.4%
Purchased Inputs Cost	\$15.26	\$16.79	10.1%
Total Operating Cost	\$13.96	\$15.41	10.4%
Average Price Received for Milk	\$20.39	\$19.29	-5.4%

³⁴Non-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 32.

Table 32.

**COST OF PRODUCING MILK, ACCRUAL RECEIPTS FROM DAIRY, AND PROFITABILITY
224 New York Dairy Farms, 2008**

Item	Average 224 Farms			Average Top 10% Farms ³⁵		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Cost of Producing Milk</u>						
Operating Cost	\$1,518,969	\$3,667	\$15.21	\$2,879,805	\$3,531	\$13.44
Purchased Inputs Cost	1,657,769	4,002	16.60	3,135,854	3,845	14.64
Total Cost	1,870,983	4,517	18.73	3,503,139	4,295	16.35
<u>Accrual Receipts from Milk</u>						
Net Milk Receipts	\$1,921,753	\$4,640	\$19.24	\$4,092,378	\$5,018	\$19.10
	1,836,728	3,987	18.39	3,923,834	4,634	18.32
<u>Profitability</u>						
Net Farm Income without Appreciation	\$263,984	\$637	\$2.64	\$956,523	\$1,173	\$4.47
Net Farm Income with Appreciation	\$301,076	\$727	\$3.01	\$1,012,925	\$1,242	\$4.73

³⁵Average of 23 farms with highest rates of return to all capital (without appreciation).

The operating cost of producing milk on all 224 dairy farms averaged \$15.21 per hundredweight, leaving \$4.03 to cover depreciation, unpaid labor and operator resources.

The total cost of producing milk on all 224 dairy farms averaged \$18.73 per hundredweight, \$0.51 less than the average price received for milk sold from these farms during 2008. The imputed costs or charge for the operator's labor, management and equity capital averaged \$2.09 per hundredweight in 2008; however, the farm operator received \$2.60 per hundredweight for these inputs. The 23 most profitable farms held their operating costs to \$13.44 per hundredweight and their total cost of producing milk averaged \$16.35 per hundredweight. This left a profit of \$2.75 per hundredweight of milk sold.

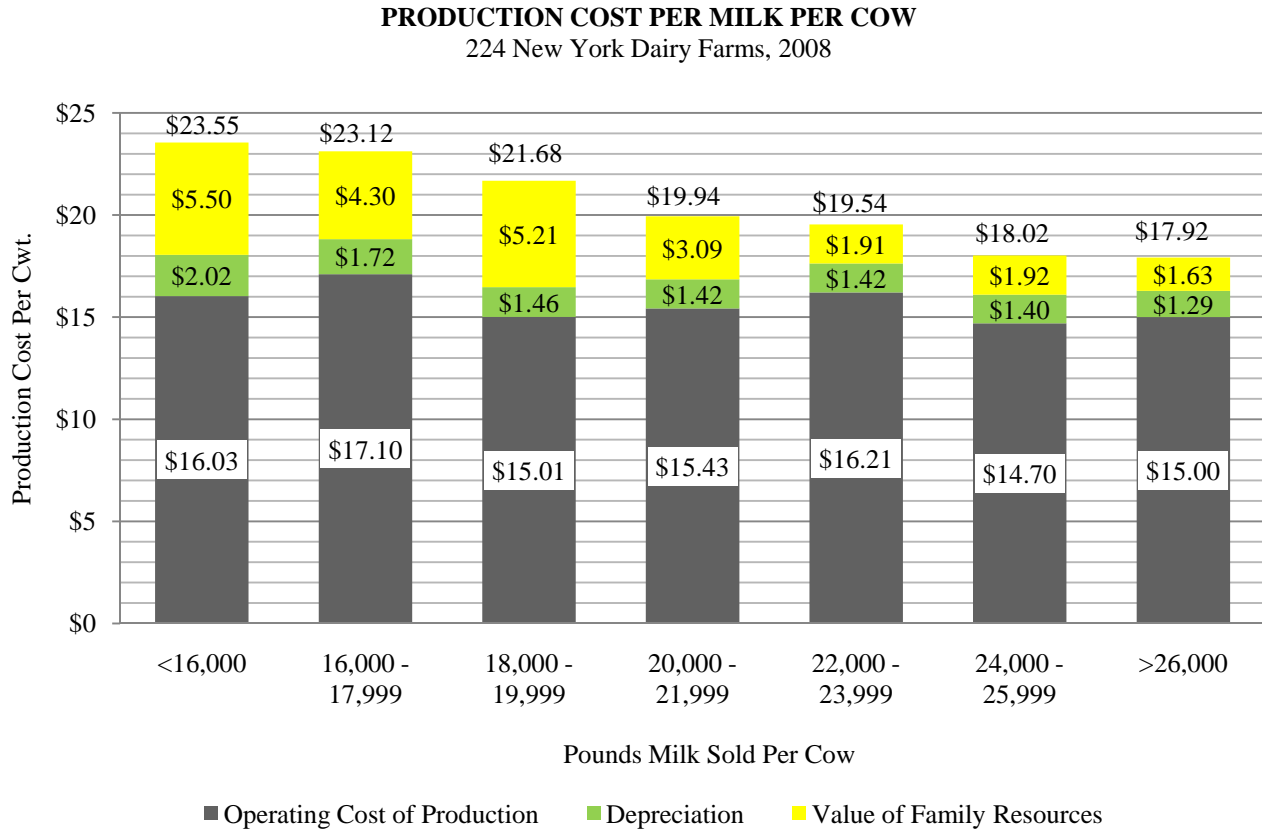
The strong relationship between milk output per cow and the total cost of producing milk is shown in Table 33 and Chart 10 on page 32. Farms selling less than 20,000 pounds of milk per cow had average total costs of production of \$22.78 per hundredweight while those selling 20,000 pounds and over averaged \$16.36 for a difference of \$6.43 per hundredweight.

Table 33.

**FARM COST OF PRODUCING MILK BY MILK SOLD PER COW
224 New York Dairy Farms, 2008**

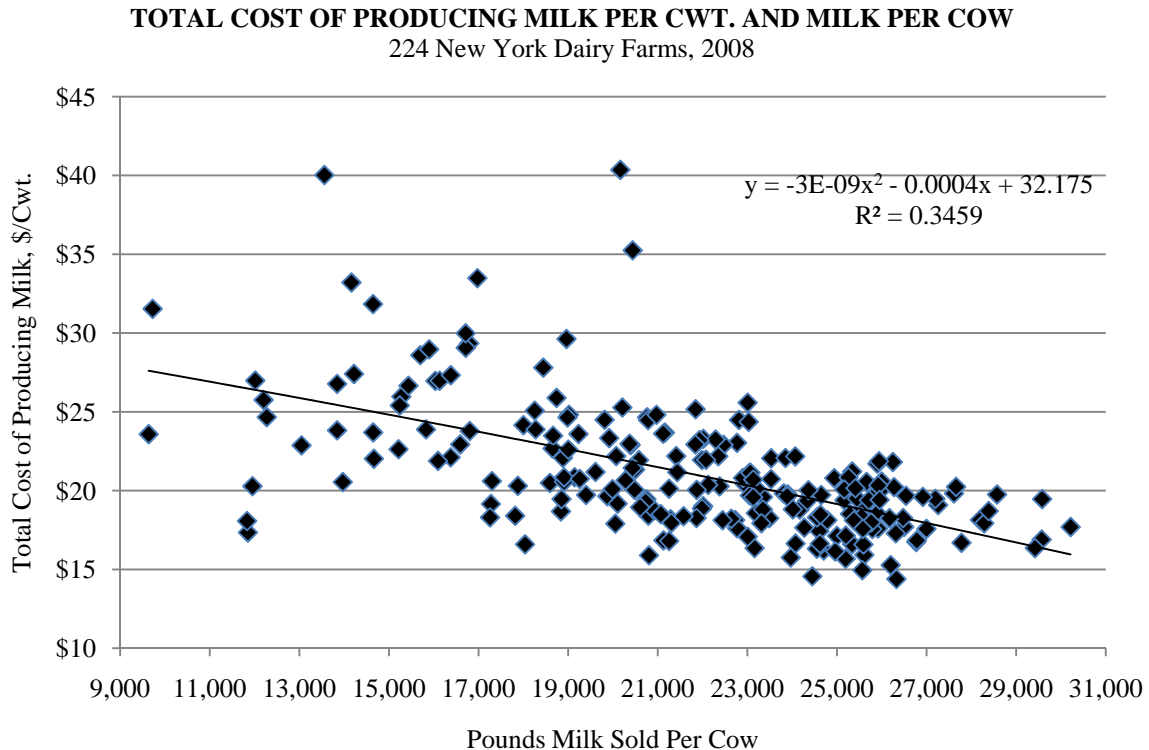
Pounds Milk Sold Per Cow	Costs per Hundredweight					Accrual Receipts From Milk Per Cwt.	Return Per Cwt. To Operator's Labor, Mgmt. & Capital
	Operating Costs		Costs of Producing Milk				
	Hired Labor	Dairy Grain & Concentrate	Total Operating	Purchased Inputs	Total		
Under 16,000	\$1.71	\$6.16	\$16.03	\$18.05	\$23.55	\$20.36	\$1.77
16,000-17,999	2.59	6.33	17.10	18.82	23.12	20.44	1.43
18,000-19,999	1.52	6.01	15.01	16.47	21.68	19.54	2.56
20,000-21,999	2.53	6.15	15.43	16.85	19.94	19.38	2.48
22,000-23,999	2.81	5.98	16.21	17.63	19.54	19.28	1.61
24,000-25,999	2.89	5.57	14.70	16.10	18.02	19.10	2.99
26,000 & over	2.93	5.94	15.00	16.29	17.92	19.19	2.90

Chart 10.



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

Chart 11.



Data in Table 34 and Chart 12 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 50 herd size group followed by the 900 and over herd size category. Hired labor cost generally increases with herd size, while purchased dairy grain and concentrate are not related to herd size.

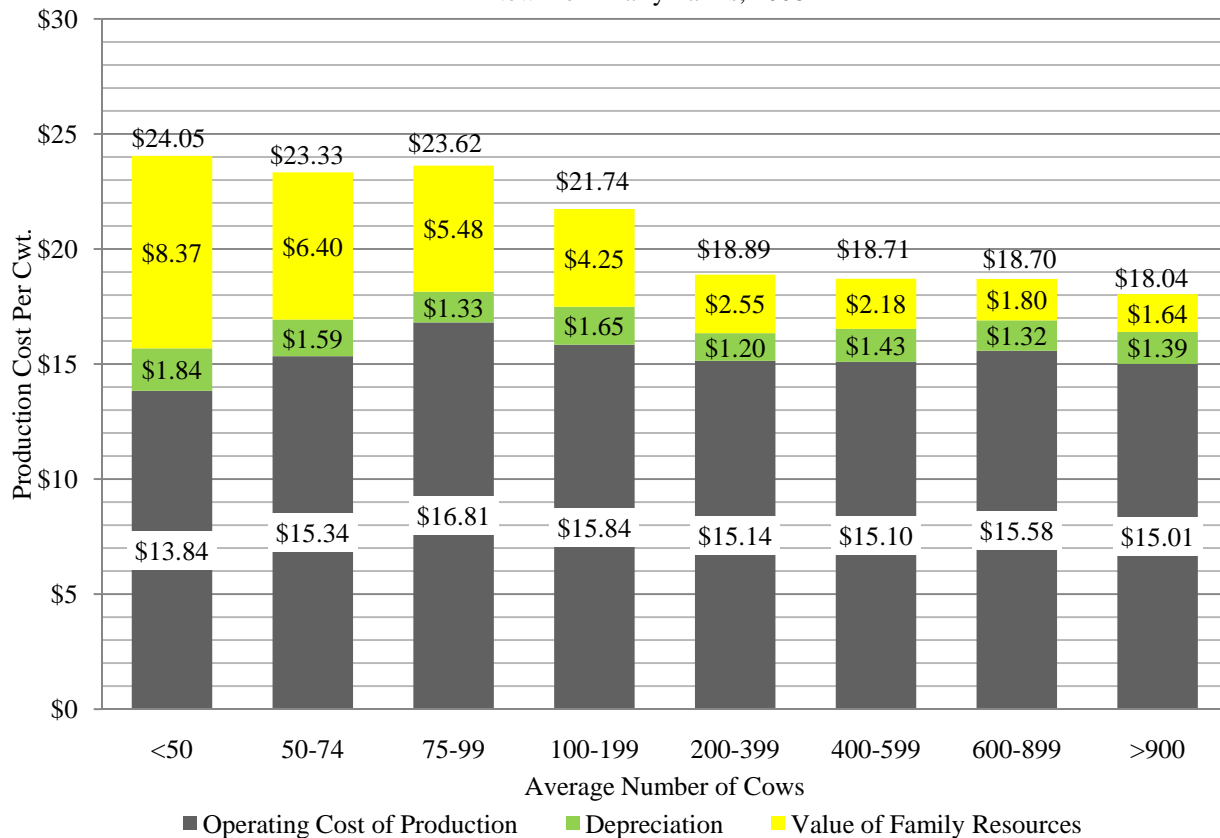
Table 34.

FARM COST OF PRODUCING MILK BY HERD SIZE
224 New York Dairy Farms, 2008

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 50	\$0.84	\$5.69	\$13.84	\$15.68	\$24.05	\$19.55	\$2.94
50 to 74	1.09	5.87	15.34	16.93	23.33	19.44	1.73
75 to 99	1.29	6.65	16.81	18.14	23.62	19.72	1.08
100 to 199	1.98	6.05	15.84	17.49	21.74	19.43	1.78
200 to 399	2.48	5.76	15.14	16.34	18.89	19.18	2.78
400 to 599	2.77	5.97	15.10	16.53	18.71	19.39	2.84
600 to 899	2.92	5.89	15.58	16.90	18.70	19.65	2.75
900 and over	3.02	5.75	15.01	16.40	18.04	19.02	2.62

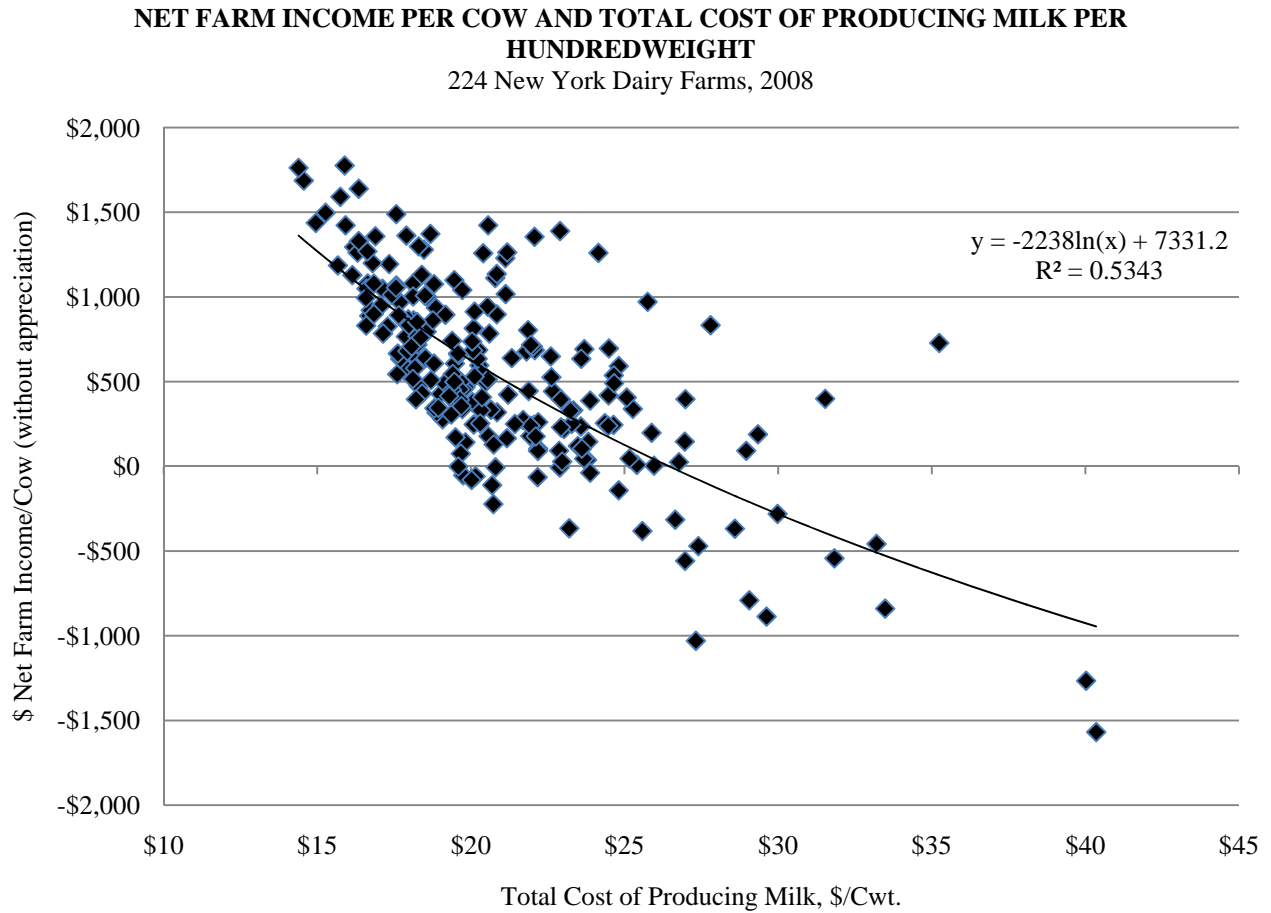
Chart 12.

PRODUCTION COST BY HERD SIZE
224 New York Dairy Farms, 2008



The importance of cost control and its impact on farm profitability are illustrated in Chart 13. As the total cost of producing milk per hundredweight increased, net farm income per cow fell. All farms had a positive net farm income per cow until the total cost of producing milk exceeded \$20 per hundredweight. The majority of the farms with costs greater than \$27 per hundredweight experienced negative net farm incomes per cow.

Chart 13.



Cost of Producing Milk (continued)

A ten-year comparison of the average costs and returns of producing milk per hundredweight is presented in Table 35 on page 36. Average individual operating and overhead expenses per hundredweight of milk sold are reported on all specialized dairy farms included in the New York State Summary from 1999 through 2008. In 2008, the average operating cost of producing milk increased 8.5 percent after increasing 16.1 percent from 2006 to 2007. The average return per hundredweight to operator labor, management, and capital was \$2.32 lower in 2008, 47 percent below 2007. 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 1999 to 2005, remained constant in 2005, decreased three percent in 2006, increased five percent in 2007, and increased three percent in 2008. Hired labor expense was \$2.14 in 1999 and has risen to \$2.79 in 2008. Thus, even as pounds of milk sold per worker have increased from 839,432 in 1999 to 1,024,799 in 2008, 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 30 percent increase in hired labor expense per hired worker equivalent from 1999 to 2008.

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 2008, 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.

Interest paid on debt per hundredweight of milk sold has fluctuated over this period. In 1999, interest expense was \$0.83 per hundredweight. In 2008, interest expense was at a ten-year low of \$0.54 per hundredweight. Property taxes per hundredweight of milk were fairly constant during this ten-year period. Property taxes were \$0.21 per hundredweight in 1999 and in 2008. 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 36 on page 37. The reader is reminded that the same farms are not in the survey each year. Average cow numbers are up 85 percent, tillable acres have increased 71 percent, and milk sold per farm has jumped 108 percent since 1999. Capital investment per cow has increased 44 percent over the last ten years. Labor and management income per operator decreased 60 percent in 2008 compared to 2007, farm net worth increased 20 percent, and percent equity remained constant in 2008 compared to 2007.

Hay crop yields were 2.9 tons dry matter per acre in 1999 and 3.5 tons dry matter per acre in 2008. Corn silage yields, as fed, have varied more widely and were at a ten-year high of 19.9 tons per acre in 2008. As yields increased, fertilizer and lime expense increased \$9 per tillable acre, from \$40 to \$49 per acre. Pounds of milk sold per cow increased by 12 percent, from 21,439 pounds in 1999 to 24,115 pounds in 2008.

Average number of workers per farm increased by 4.04 and operators/managers per farm were stable. Cows per worker equivalent increased from 39 in 1999 to 42 in 2008, but labor cost per cow increased from \$653 to \$823 over the same time period.

The asset turnover ratio ranged from a low of 0.52 in 2006 to a high of 0.67 in 2007. The 2008 asset turnover ratio was 0.59. Total accrual receipts as a proportion of total farm assets equals asset turnover ratio. Percent equity was 58 percent in 1999, was relatively constant over the next seven years, and increased to 68 percent in 2007 and 2008.

Table 35.

**TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1999 to 2008**

Item	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
<u>Operating Expenses</u>										
Hired labor	\$2.14	\$2.25	\$2.41	\$2.44	\$2.51	\$2.67	\$2.66	\$2.58	\$2.70	\$2.79
Purchased feed	3.96	3.91	4.25	4.10	4.29	4.88	4.37	4.30	5.21	6.17
Machinery repair, vehicle expense & rent	1.18	1.06	1.21	1.01	.91	1.09	1.07	1.04	1.27	1.24
Fuel, oil & grease	.24	.34	.32	.28	.33	.41	.53	.58	.67	.91
Replacement livestock	.24	.23	.20	.16	.15	.16	.11	.07	.07	.08
Breeding fees	.17	.17	.19	.21	.19	.21	.22	.23	.24	.26
Veterinary & medicine	.47	.51	.54	.56	.56	.59	.62	.65	.65	.68
Milk marketing	.49	.69	.63	.65	.69	.72	.76	.80	.80	.85
Other dairy expenses	1.13	1.16	1.26	1.25	1.30	1.27	1.32	1.29	1.41	1.52
Fertilizer & lime	.35	.29	.33	.27	.26	.30	.34	.31	.40	.47
Seeds & plants	.20	.19	.20	.20	.20	.24	.22	.23	.28	.33
Spray & other crop expense	.24	.22	.25	.22	.19	.20	.19	.19	.25	.26
Land, building & fence repair	.27	.21	.26	.19	.14	.21	.25	.22	.32	.34
Taxes	.21	.20	.21	.20	.21	.22	.23	.21	.23	.21
Insurance	.16	.16	.14	.16	.15	.16	.16	.17	.19	.18
Utilities (farm share)	.31	.32	.33	.34	.34	.36	.39	.41	.44	.43
Interest paid	.83	.95	.82	.61	.56	.57	.65	.78	.83	.54
Misc. (including rent)	.44	.45	.42	.44	.40	.43	.37	.45	.49	.49
Total Operating Expenses	\$13.02	\$13.31	\$13.98	\$13.27	\$13.39	\$14.67	\$14.54	\$14.51	\$16.46	\$17.77
<u>Less:</u> Nonmilk cash receipts	1.44	1.83	1.49	1.91	1.57	1.70	1.96	1.94	1.75	1.57
Increase in grown feed & supplies	.25	.11	.10	.12	.27	.17	.12	.22	.39	.66
Increase in livestock	.11	.06	.52	.23	.09	.22	.21	.27	.30	.33
OPERATING COST OF MILK PRODUCTION	\$11.22	\$11.31	\$11.87	\$11.01	\$11.46	\$12.58	\$12.25	\$12.08	\$14.02	\$15.21
<u>Overhead Expenses</u>										
Depreciation: machinery & buildings	\$1.14	\$1.20	\$1.30	\$1.39	\$1.23	\$1.32	\$1.32	\$1.26	\$1.32	\$1.38
Unpaid labor	.11	.10	.10	.08	.10	.07	.06	.07	.07	.04
Operator(s) labor ³⁶	.80	.79	.74	.74	.70	.67	.61	.63	.65	.58
Operator(s) management (5% of cash receipts)	.83	.76	.87	.75	.73	.90	.90	.79	1.07	1.10
Interest on farm equity capital (5%)	.86	.88	.91	.89	.85	.92	1.02	1.06	1.20	1.29
Total Overhead Expenses	\$3.74	\$3.73	\$3.92	\$3.85	\$3.61	\$3.88	\$3.91	\$3.81	\$4.31	\$4.39
TOTAL COST OF MILK PRODUCTION	\$14.96	\$15.04	\$15.79	\$14.86	\$15.07	\$16.46	\$16.16	\$15.89	\$18.33	\$19.60
AVERAGE FARM PRICE OF MILK	\$14.91	\$13.38	\$15.98	\$12.98	\$13.24	\$16.64	\$15.98	\$13.85	\$20.34	\$19.24
Return per cwt. to operator labor, capital & mgmt.	\$2.44	\$0.77	\$2.71	\$0.50	\$0.45	\$2.67	\$2.35	\$0.44	\$4.93	\$2.61
Rate of return on farm equity capital	4.7%	-4.4%	6.0%	-5.6%	-5.7%	6.0%	4.1%	-4.6%	13.4%	3.6%

³⁶1998 = \$1,600/month, 1999 = \$1,800/month, 2000 = \$1,900/month, 2001 = \$2,000/month, 2002 = \$2,100/month, 2003 through 2005 = \$2,200/month, 2006 = \$2,300/month, 2007 = \$2,400/month, and 2008 = \$2,500/month of operator labor.

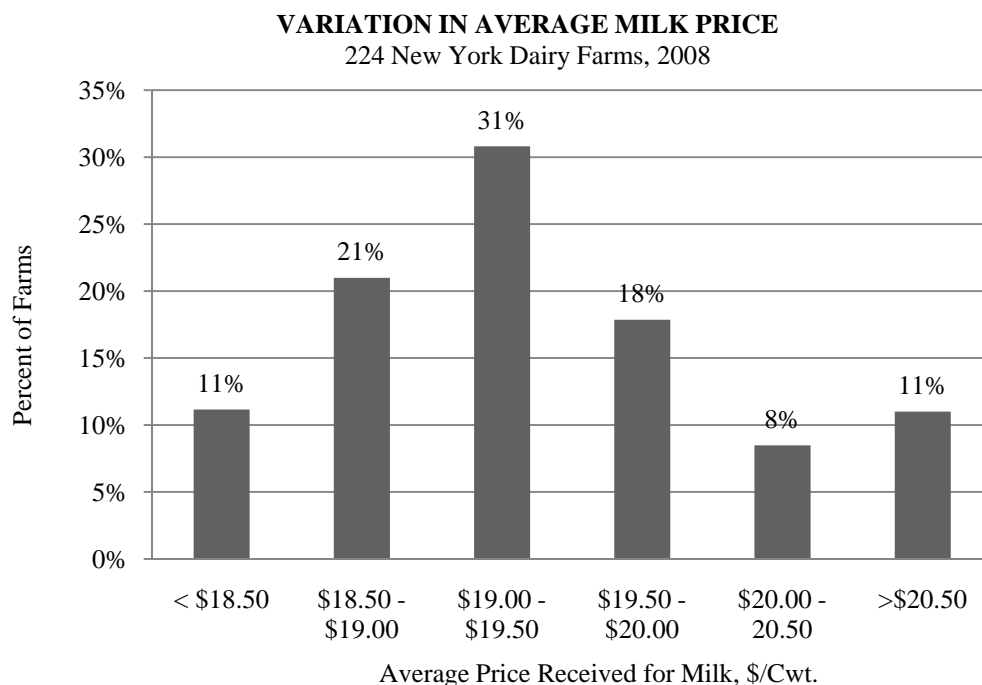
Table 36.

TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1999 to 2008

Item	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008
Number of farms	314	294	228	219	201	200	225	240	250	224
<u>Cropping Program</u>										
Total tillable acres	516	566	618	660	659	701	729	730	758	883
Tillable acres rented	234	262	290	337	323	345	365	360	385	446
Hay crop acres	248	274	302	323	321	339	361	366	364	421
Corn silage acres	186	192	210	232	233	245	246	249	258	297
Hay crop, tons DM/acre	2.9	3.3	2.8	3.1	3.2	3.5	3.2	3.2	3.0	3.5
Corn silage, tons/acre	16.3	15.1	16.5	15.4	17.2	17.7	18.8	18.4	18.9	19.9
Fertilizer & lime exp./tillable acre	\$32	\$27	\$32	\$27	\$28	\$31	\$33	\$30	\$40	\$49
Machinery cost/cow	\$502	\$513	\$554	\$520	\$497	\$565	\$624	\$618	\$708	\$800
<u>Dairy Analysis</u>										
Number of cows	224	246	277	297	314	334	340	350	358	414
Number of heifers	164	186	207	226	240	260	270	283	289	348
Milk sold, cwt.	47,932	52,871	60,290	66,177	70,105	73,767	78,250	80,862	82,315	99,884
Milk sold/cow, lbs.	21,439	21,516	21,762	22,312	22,302	22,070	22,998	23,083	22,983	24,115
Purchased dairy feed/cwt. milk	\$3.96	\$3.91	\$4.25	\$4.10	\$4.27	\$4.86	\$4.37	\$4.29	\$5.20	\$6.16
Purchased grain & concentrate as % of milk receipts	25%	27%	25%	30%	30%	27%	26%	29%	24%	31%
Purchased feed & crop exp/cwt.milk	\$4.75	\$4.61	\$5.03	\$4.79	\$4.92	\$5.60	\$5.12	\$5.02	\$6.13	\$7.23
<u>Capital Efficiency</u>										
Farm capital/cow	\$6,368	\$6,535	\$6,755	\$6,794	\$6,748	\$7,010	\$7,508	\$7,762	\$8,426	\$9,145
Real estate/cow	\$2,562	\$2,615	\$2,713	\$2,612	\$2,722	\$2,809	\$2,950	\$3,030	\$3,356	\$3,606
Machinery investment/cow	\$1,163	\$1,225	\$1,222	\$1,261	\$1,208	\$1,226	\$1,314	\$1,384	\$1,448	\$1,535
Asset turnover ratio	0.59	0.54	0.63	0.53	0.54	0.64	0.60	0.52	0.67	0.59
<u>Labor Efficiency</u>										
Worker equivalent	5.71	6.11	6.72	7.21	7.50	7.97	8.18	8.19	8.40	9.75
Operator/manager equivalent	1.76	1.83	1.94	1.82	1.86	1.64	1.60	1.63	1.62	1.72
Milk sold/worker, lbs.	839,432	865,325	897,167	917,854	934,733	925,553	956,698	987,530	980,234	1,024,799
Cows/worker	39	40	41	41	42	42	42	43	43	42
Labor cost/cow	\$653	\$674	\$706	\$725	\$738	\$752	\$765	\$757	\$784	\$823
Hired labor exp./hired worker equiv.	\$27,910	\$29,309	\$31,448	\$31,755	\$32,659	\$33,311	\$33,539	\$34,071	\$34,924	\$36,312
<u>Profitability & Financial Analysis</u>										
Labor & mgmt. income/operator	\$42,942	\$-2,908	\$45,479	\$-14,243	\$-15,360	\$78,061	\$64,745	\$-31,269	\$189,019	\$75,945
Farm net worth, end year	\$865,626	\$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
Percent equity	58%	57%	60%	57%	56%	60%	63%	62%	68%	68%

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 224 Farms was \$19.24 but there was considerable variation among the individual farms. The variation in average price received and the distribution of farms around the mean is shown below.

Chart 14.



Forty-nine percent of the farms received from \$19 to \$20 per hundredweight of milk sold. Nineteen percent of the farms received \$20 or more and 32 percent received less than \$19 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 37.

DAIRY RELATED ACCRUAL EXPENSES
224 New York Dairy Farms, 2008

Item	Average 224 Farms		Average Top 10% Farms ³⁷	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purchased dairy grain & concentrate	\$1,408	\$5.84	\$1,457	\$5.55
Purchased dairy roughage	78	.32	84	.32
Total Purchased Dairy Feed	\$1,486	\$6.16	\$1,541	\$5.87
Purchased grain & concentrate as % of milk receipts		31%		29%
Purchased feed & crop expense	\$1,743	\$7.23	\$1,762	\$6.71
Purchased feed & crop expense as % of milk receipts		39%		35%
Breeding	\$64	\$.26	\$61	\$.23
Veterinary & medicine	164	.68	163	.62
Milk marketing	205	.85	207	.79
Bedding	83	.34	72	.27
Milking Supplies	95	.39	93	.35
Cattle lease	2	.01	2	.01
Custom boarding	93	.39	85	.32
bST expense	57	.24	76	.29
Other livestock expense	35	.15	32	.12

³⁷Average of 23 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 0.84 animals in 2008).

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 \$8.00 reported below average profits. Net milk income over purchased concentrate per cow shows a similar relationship when compared to rate of return on assets without appreciation (Chart 15).

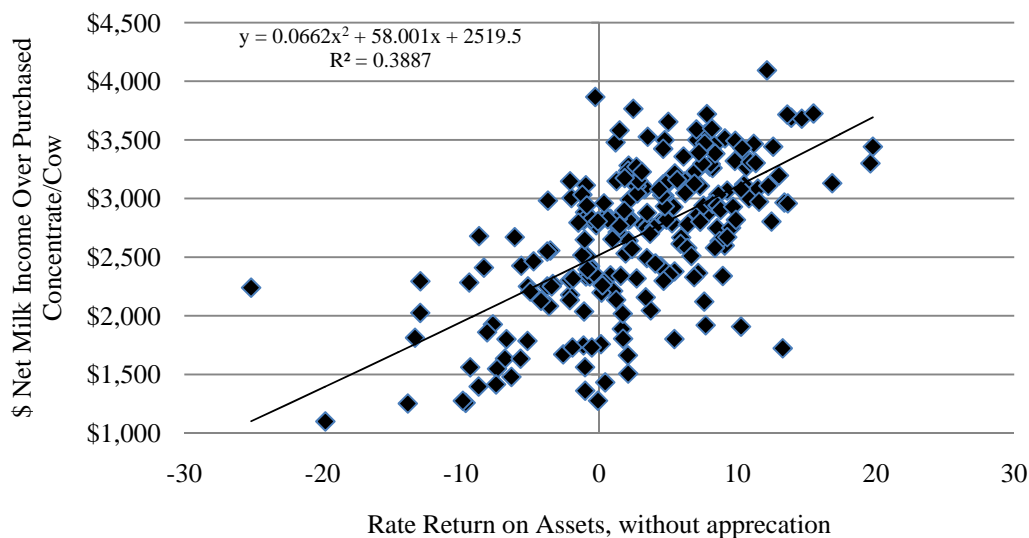
Table 38.

**PURCHASED FEED AND CROP EXPENSE PER HUNDREDWEIGHT
OF MILK AND FARM INCOME MEASURES
224 New York Dairy Farms, 2008**

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
\$8.50 or more	45	211	8.0	20,606	\$46,101	\$-13,304	\$63
8.00 to 8.49	28	427	8.3	23,947	206,888	42,283	99
7.50 to 7.99	30	478	8.7	24,866	272,153	72,724	152
7.00 to 7.49	40	520	8.3	24,803	291,750	74,990	144
6.50 to 6.99	24	486	8.8	24,646	357,121	122,718	253
6.00 to 6.49	27	550	8.3	24,263	475,503	172,235	313
Less than 6.00	30	322	9.1	24,303	334,035	120,297	374

Chart 15.

**NET MILK INCOME OVER PURCHASED CONCENTRATE PER
COW VERSUS RETURN ON ASSETS
224 New York Dairy Farms, 2008**



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, 173 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 39 reports the averages for the 143 farms providing the data. Table 40 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 39.

AVERAGE³⁸ MILK INCOME AND MARKETING REPORT 143 New York Dairy Farms, 2008

	Pounds	Percent	Price/Pound	Total	\$/Cwt of Milk
BASE FARM PRICE					
Butterfat	497,443	3.64%	\$1.57	\$781,080	\$5.72
Protein	417,967	3.06%	\$3.88	\$1,620,283	\$11.87
Solids	779,270	5.71%	\$0.06	\$44,053	\$0.32
Total Component Contribution					\$17.91
PPD	13,653,359			\$42,746	\$0.31
Base Farm Price					\$18.22
Premiums					
Quality				\$29,294	\$0.22
Volume				\$44,153	\$0.32
Market Premiums				\$61,596	\$0.45
Total Premiums					\$0.99
BASE FARM PRICE + PREMIUM					\$19.21
Deductions					
Promotion				\$20,588	\$0.15
Hauling & Stop Charges.				\$76,067	\$0.56
Market Fees & Coop Dues				\$19,436	\$0.14
Total Deductions					\$0.85
BASE FARM PRICE + PREMIUMS – DEDUCTIONS					\$18.36
Marketing Programs					
Futures Contracts, Forward Contracting, Etc.				\$-5,662	\$-0.04
Total Marketing Income					\$-0.04
Patronage Dividends				\$11,080	\$0.08
NET PRICE RECEIVED ON FARM, ALL SOURCES					\$18.40
PPD – Hauling, per cwt.					\$-0.24
PPD – Hauling + Market Premiums, per cwt.					\$0.21
Net Marketing Value, per cwt. (PPD + Total Premiums - Total Deductions)					\$0.45

³⁸Each 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 143 farms is 558 cows.

Table 40.

MILK PRICE INFORMATION BY QUINTILE³⁹
(Each Category Sorted Independently)
143 New York Dairy Farms, 2008

	Lowest Quintile	←—————→	—————→	Highest Quintile	
Butterfat, %	3.52	3.62	3.69	3.77	4.04
Protein, %	2.96	3.03	3.06	3.13	3.29
Other Solids, %	5.58	5.69	5.71	5.74	5.79
Butterfat, \$ per Cwt.	5.52	5.67	5.78	5.91	6.38
Protein, \$ per Cwt.	11.47	11.75	11.89	12.14	12.74
Other solids, \$ per Cwt.	0.26	0.32	0.32	0.33	0.38
Total Component Value per Cwt.	\$17.44	\$17.76	\$17.99	\$18.31	\$19.33
PPD, \$ per Cwt.	0.09	0.19	0.34	0.50	0.94
Base Farm Price per Cwt.	\$17.70	\$18.07	\$18.40	\$18.80	\$19.93
Quality, \$ per Cwt.	0.02	0.11	0.17	0.26	0.42
Volume, \$ per Cwt.	0.00	0.05	0.20	0.38	0.66
Market premium, \$ per Cwt.	-0.01	0.16	0.31	0.51	0.92
Total Premium, \$ per Cwt.	0.33	0.63	0.81	1.03	1.32
Base Farm Price + Premiums per Cwt.	\$18.41	\$18.94	\$19.28	\$19.63	\$20.74
Promotion, \$ per Cwt.	0.15	0.15	0.15	0.15	0.15
Hauling, \$ per Cwt.	0.30	0.46	0.56	0.74	1.22
Market fees & coop dues per Cwt.	0.04	0.10	0.15	0.17	0.22
Total Marketing Expenses per Cwt.	\$0.56	\$0.75	\$0.84	\$1.05	\$1.52
Base + Premiums – Deductions per Cwt.	\$17.60	\$18.05	\$18.42	\$18.69	\$19.53
Futures contract, forward contracting, \$ per Cwt.	-0.13	0.00	0.00	0.00	0.00
Total Marketing Income, \$ per Cwt.	-\$0.13	\$0.00	\$0.00	\$0.00	\$0.00
Patronage Dividends, \$ per Cwt.	\$0.00	\$0.00	\$0.00	\$0.02	\$0.40
Net Price Received From All Sources, \$ per Cwt.	\$17.64	\$18.13	\$18.44	\$18.78	\$19.59
PPD - Hauling, \$ per cwt.	-0.56	-0.38	-0.24	-0.13	0.11
PPD - Hauling + Market Premiums, \$ per cwt.	-0.37	-0.14	0.10	0.29	0.78
Net Marketing Value, \$ per cwt. (PPD + Total Premiums - Total Deductions)	-0.33	0.06	0.29	0.56	0.90

³⁹Data 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 41.

**CAPITAL EFFICIENCY
224 New York Dairy Farms, 2008**

Item (Average for Year)	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	\$388,489	\$9,145	\$4,288	\$8,665
Real estate		\$3,606		\$3,417
Machinery & equipment	\$65,192	\$1,535	\$720	
<u>Ratios</u>				
Asset turnover	Operating Expense	Interest Expense		Depreciation Expense
0.59	0.79	0.02		0.06
<u>Average Top 10% Farms:⁴⁰</u>				
Farm capital	\$399,656	\$8,649	\$4,797	\$10,058
Real estate		\$3,071		\$3,571
Machinery & equipment	\$65,724	\$1,422	\$789	
<u>Ratios</u>				
Asset turnover ratio	Operating Expense	Interest Expense		Depreciation Expense
0.67	0.72	0.02		0.05

⁴⁰Average of 23 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 42.

**ASSET TURNOVER AND PROFITABILITY
224 New York Dairy Farms, 2008**

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		
≥ .70	34	793	\$7,323	\$329,977	\$146,215	\$458,238
.60 to .69	42	579	8,581	366,383	92,593	318,020
.50 to .59	46	452	9,524	399,800	95,435	347,705
.40 to .49	45	330	11,208	493,205	66,537	261,585
Less than .40	57	103	13,267	425,415	-14,886	42,627

Measures of labor efficiency are key indicators of the work accomplished by an average worker. The 23 farms with the highest rates of return on all capital (without appreciation) were above the average of all 224 farms in all measures of labor efficiency except tillable acres per worker. The top 10 percent averaged three more cows per worker and sold 18 percent more milk per worker than the average of all farms.

Table 43.

**LABOR EFFICIENCY
224 New York Dairy Farms, 2008**

Labor Efficiency	Average Farms		Average Top 10% Farms ⁴²	
	Total	Per Worker ⁴¹	Total	Per Worker ⁴¹
Cows, average number	414	43	816	46
Milk sold, pounds	9,988,372	1,024,799	21,421,264	1,213,497
Tillable acres	883	91	1,470	83

⁴¹The 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.

⁴²Average of 23 farms with highest rates of return to all capital (without appreciation).

The labor force averaged 9.75 full-time worker equivalents per farm (based on 230 hours per month). Twenty percent of the labor was supplied by the farm operator/managers. There were two operators on 142 farms, three on 47 farms, and 16 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 \$1,508 per cow and \$5.74 per hundredweight on the 23 farms in the top decile.

Table 44.

**LABOR FORCE INVENTORY AND COST ANALYSIS
224 New York Dairy Farms, 2008**

Labor Force	Months ⁴³	Age	Years of Education	Value of Labor & Management	
Operator number 1	13.2	52	14	\$44,339	
Operator number 2	7.0	47	14	24,733	
Operator number 3	2.1	45	14	8,088	
Operator number 4	0.8	47	15	<u>2,696</u>	
Family paid	4.4			Total \$79,856	
Family unpaid	1.7				
Hired	<u>87.8</u>				
Total	117.0	÷ 12 =	9.75 Worker Equivalent		
			1.72 Operator/Manager Equivalent		
<u>Average Top 10% Farms:</u> ⁴⁴					
Total	211.8	÷ 12 =	17.65 Worker Equivalent		
Operators'			1.92 Operator/Manager Equivalent		
				Average 224 Farms Avg. Top 10% Farms ⁴⁴	
Labor Costs	Total	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Value operators' labor (\$2,500/month)	\$57,723	\$139	\$0.58	\$77	\$0.29
Family unpaid (\$2,500/month)	4,121	10	0.04	1	0.01
Hired	<u>278,995</u>	<u>674</u>	<u>2.79</u>	<u>702</u>	<u>2.67</u>
Total Labor	\$340,840	\$823	\$3.41	\$781	\$2.97
Machinery Cost	<u>331,170</u>	<u>800</u>	<u>3.32</u>	<u>727</u>	<u>2.77</u>
Total Labor & Machinery	\$672,010	\$1,622	\$6.73	\$1,508	\$5.74
Hired labor exp. per hired worker equiv.	\$36,312			\$36,898	
Hired labor exp. as % of milk sales	14.5%			14.0%	

⁴³See footnote number 41 in Table 43.

⁴⁴Average of 23 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 positive over the range of efficiency levels. The higher outputs of milk sold per worker are partially attributable to higher producing cows. In 2008, increased labor efficiency resulted in larger net farm incomes.

Table 45.

**MILK SOLD PER WORKER AND NET FARM INCOME
224 New York Dairy Farms, 2008**

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	38	61	17,167	\$13,767	\$-20,329
500,000 to 699,999	42	120	19,997	41,910	-5,319
700,000 to 899,999	47	273	22,513	134,391	23,389
900,000 to 1,099,999	48	518	24,210	316,167	80,994
1,100,000 & over	49	974	25,271	721,565	210,853

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 224 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 46.

FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS 224 New York Dairy Farms, 2008

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
32.8	1,533	39,079,582	27,697	6.1	26	59	1,326,776
20.0	889	22,462,174	25,870	4.5	24	50	1,157,759
14.5	611	14,559,571	25,141	4.0	22	45	1,076,028
10.2	418	9,850,776	24,024	3.6	20	43	997,782
6.4	268	6,021,499	22,918	3.2	19	41	901,438

4.6	174	3,611,005	21,728	2.9	18	37	811,553
3.7	120	2,377,960	20,580	2.6	18	33	693,912
3.0	88	1,660,416	19,188	2.2	17	30	597,784
2.2	61	1,124,937	17,039	1.9	15	26	483,790
1.5	41	685,993	13,434	1.4	11	19	338,064

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		
\$634	19%	\$513	\$1,152	\$866	\$4.95		
959	24	622	1,380	1,201	6.06		
1,095	27	699	1,525	1,364	6.52		
1,203	29	745	1,601	1,501	6.97		
1,320	30	794	1,661	1,628	7.27		

1,369	32	854	1,735	1,719	7.60		
1,436	33	914	1,820	1,812	7.93		
1,531	35	975	1,958	1,914	8.29		
1,637	36	1,047	2,119	2,019	9.03		
1,825	44	1,279	2,502	2,227	10.86		

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 46. (continued)

**FARM BUSINESS CHART FOR
FARM MANAGEMENT COOPERATORS
224 New York Dairy Farms, 2008**

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.
\$5,365	\$21.41	\$1,884	\$11.32	\$3,081	\$16.12
5,015	20.29	2,583	13.04	3,768	17.60
4,821	19.82	2,899	13.89	3,987	18.32
4,624	19.58	3,166	14.44	4,214	19.16
4,431	19.39	3,291	15.10	4,454	19.83

4,233	19.22	3,457	15.72	4,604	20.50
3,978	19.05	3,641	16.39	4,761	21.63
3,756	18.87	3,841	16.92	4,960	23.00
3,294	18.64	4,132	17.66	5,192	24.67
2,654	18.09	4,549	20.42	5,734	30.18

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
\$1,346,592	\$1,434	0.28	\$1,458,571	\$1,591	\$920,860	\$468,664
572,148	1,115	0.22	668,588	1,204	345,048	182,305
343,548	918	0.19	426,417	1,022	192,506	104,268
210,965	762	0.15	252,603	870	98,620	56,724
139,296	637	0.13	138,473	726	48,388	29,921

79,180	489	0.10	81,064	575	16,947	12,975
40,234	378	0.08	48,498	444	-1,848	-1,568
25,534	243	0.05	32,757	318	-23,654	-17,104
7,719	76	0.02	18,529	141	-55,848	-42,482
-77,207	-474	-0.15	-61,730	-421	-198,298	-132,376

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 47.

A FARM FINANCE CHECKLIST 224 New York Dairy Farms, 2008

	Average 224 Farms		Average Top 10% Farms ⁴⁵	
<u>How farm assets are being used (average for the year):</u>				
Total assets (capital) per cow	\$9,145		\$8,649	
Farm assets in livestock	26%		26%	
Farm assets in farm real estate	39%		36%	
Farm assets in machinery	17%		16%	
<u>Measures of debt capacity & debt structure:</u>				
Equity in the business	68%		70%	
Farm debt per cow	\$3,009		\$2,632	
Long term debt/asset ratio ⁴⁶	0.32		0.26	
Intermediate & current term debt/asset ratio ⁴⁶	0.33		0.32	
Intermediate & current term debt as % of total	61%		69%	
<u>Debt repayment ability:⁴⁷</u>				
Cash flow coverage ratio	1.33		1.12	
Debt coverage ratio	1.43		1.46	
Debt payments made per cow	\$560		\$642	
Debt payments made as % of milk receipts	12%		13%	
<u>Indicators of annual financial progress:</u>				
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Annual change in farm assets	+\$246,537	+6.7%	+\$577,503	+8.5%
Annual change in farm debt	+\$135,923	+12.0%	+\$159,291	+7.9%
Annual change in farm net worth	+\$110,614	+4.4%	+\$418,213	+8.8%

⁴⁵Twenty-three farms with highest rates of return on all capital (without appreciation).

⁴⁶Long or intermediate and current term debt divided by long or intermediate and current term assets.

⁴⁷Average of 202 farms that participated in DFBS both in 2007 and 2008. Nineteen top 10 percent farms that participated both years.

The most profitable farms carried \$377 less debt per cow, the average equity in their businesses was two percent higher than that of the average of all 224 farms, and they had a slightly greater ability to make 2009 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 5.3 percentage points faster than assets during 2008 on the 224 dairy farms. Average farm net worth increased 4.4 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 48.

FINANCIAL ANALYSIS CHART
224 New York Dairy Farms, 2008

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
\$143	\$1,336	6.35	7.84	1%	\$148	50%	39.50
276	1,032	2.54	2.91	4	975	33	5.40
371	888	1.97	2.13	7	1,665	27	3.44
462	779	1.65	1.77	9	2,156	22	2.65
529	710	1.44	1.40	10	2,557	18	2.29

595	646	1.20	1.12	12	3,090	14	1.91
650	514	1.01	0.89	13	3,563	10	1.56
720	413	0.83	0.54	15	3,970	6	1.20
841	275	0.60	0.10	17	4,480	0	0.93
1,348	-175	-0.73	-1.26	25	6,127	-14	-0.10
Solvency				Operational Ratios			
Leverage Ratio ⁴⁸	Percent Equity	Debt/Asset Ratio		Operating Expense Ratio	Interest Expense Ratio	Depreciation Expense Ratio	
		Current & Intermediate	Long Term				
0.01	99%	0.01	0.00	0.64	0.00	0.02	
0.10	91	0.08	0.00	0.69	0.01	0.04	
0.20	84	0.16	0.01	0.73	0.02	0.04	
0.27	79	0.22	0.09	0.75	0.02	0.05	
0.36	75	0.26	0.19	0.78	0.02	0.06	

0.47	69	0.31	0.29	0.80	0.03	0.07	
0.58	64	0.37	0.39	0.82	0.03	0.07	
0.73	59	0.44	0.49	0.85	0.04	0.08	
0.94	52	0.53	0.61	0.89	0.05	0.10	
1.75	38	0.71	0.91	1.03	0.08	0.16	
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 ⁴⁹	
0.81	\$1,557	\$708	\$6,228	\$777,839	23%	15%	
0.70	2,522	1,006	7,389	355,241	14	11	
0.65	2,865	1,261	7,985	200,304	10	8	
0.60	3,170	1,451	8,546	98,920	8	7	
0.55	3,579	1,670	9,149	45,034	5	5	

0.50	4,002	1,895	9,774	19,198	2	3	
0.45	4,584	2,097	10,751	4,250	0	1	
0.40	5,364	2,331	11,819	-13,122	-2	0	
0.34	6,416	2,668	13,177	-48,343	-5	-2	
0.23	12,244	3,784	19,391	-296,970	-16	-9	

⁴⁸Dollars of debt per dollar of equity, computed by dividing total liabilities by total equity.

⁴⁹Return on all farm capital (no deduction for interest paid) divided by total farm assets.

Herd Size Comparisons

The 224 New York dairy farms have been sorted into eight herd size categories and averages for the farms in each category are presented in Tables 49 through 53. Note that after the less than 50 cow category, the herd size categories increase by 25 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.

As herd size increases, the net farm income increases (Table 49). Net farm income without appreciation averaged \$28,655 per farm for the less than 50 cow farms and \$894,127 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 \$662 net farm income per cow while 50 cow dairy farms averaged \$735 net farm income per cow. The under 50 herd size category had the highest net farm income per cow while the 400 to 599 herd size category had the second highest net farm income per cow at \$692. Other factors that affect profitability and their relationship to the size classifications are shown in Table 50.

Table 49.

COWS PER FARM AND FARM FAMILY INCOME MEASURES 224 New York Dairy Farms, 2008

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 50	20	39	\$28,655	\$735	\$-1,675	-0.6%
50 to 74	27	60	27,724	460	-6,484	-1.2%
75 to 99	21	88	26,100	295	-10,759	-1.8%
100 to 199	44	143	56,278	393	-2,279	0.4%
200 to 399	30	285	183,409	644	55,224	5.6%
400 to 599	26	479	331,736	692	85,859	6.6%
600 to 899	23	725	484,910	669	158,932	7.5%
900 & over	33	1,350	894,127	662	203,189	7.6%

This year, net farm income per cow did not exhibit the usual increase as herd size increased. All herd size categories saw an increase in operating cost of producing milk from a year earlier (Table 50). 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 50). With 25,338 pounds of milk sold per cow, farms in the largest herd size group averaged 10.2 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 3 times per day have been successful. Only three percent of the 68 DFBS farms with less than 100 cows used a milking frequency greater than 2 times per day. As herd size increased, the percent of herds using a higher milking frequency increased. Farms with 100 to 200 cows reported 11 percent of the herds milking more often than 2 times per day, the 200-399 cow herds reported 53 percent, 400-599 cow herds reported 69 percent, 600-899 cow herds reported 78 percent, and the 900 cow and larger herds reported 88 percent exceeding the 2 times per day milking frequency.

Table 50.

COWS PER FARM AND RELATED FARM FACTORS
224 New York Dairy Farms, 2008

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 50	39	18,989	4,386	4.1	7.5	\$14,735	\$13.84	\$24.05
50 to 74	60	18,296	4,725	3.5	7.9	11,580	15.34	23.33
75 to 99	88	18,638	5,734	2.8	9.2	10,661	16.81	23.62
100 to 199	143	20,313	7,151	2.9	9.2	10,178	15.84	21.74
200 to 399	285	22,672	9,529	2.3	8.1	8,752	15.14	18.89
400 to 599	479	24,219	9,487	2.4	9.5	9,289	15.10	18.71
600 to 899	725	24,361	10,800	2.0	8.0	8,939	15.58	18.70
900 & over	1,350	25,338	11,879	1.9	8.4	8,861	15.01	18.04

Bovine somatotropin (bST), was used to a greater extent on the large herd farms. bST was reported to be used consistently during 2008 on 7 percent of the herds with less than 100 cows, 11 percent of the farms with 100 to 399 cows and on 39 percent of the farms with 400 cows and more.

Milk output per worker has always shown a strong correlation with net farm income. The farms with 100 cows or more averaged over 976,920 pounds of milk sold per worker while the farms with less than 100 cows averaged less than 494,840 pounds per worker.

In achieving the highest productivity per cow and per worker, the largest farms had the fewest crop acres per cow and below average forage dry matter harvested per cow. However, the larger farms generally purchased more roughage per cow. The largest farms had the more efficient use of farm capital with an average investment of \$8,861 per cow.

The 33 farms with more than 900 cows had the lowest total cost of producing milk at \$18.04 per hundredweight. This is \$1.39 below the \$19.43 average for the remaining 191 dairy farms.

Tables 51 through 53 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 54, on pages 53 and 54 for the eight 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 55 on pages 55-58. Most herd size categories saw an increase in net worth during 2008. The largest herd size category experienced an increase in net worth of \$325,434. However, percent equity went down as assets increased. The largest herds had the lowest percent equity; while the smaller herds averaged 82 percent.

Selected business factors by herd size group are presented in Table 56 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, 2008. For analysis of smaller herds, see Dairy Farm Business Summary, New York Small Herd Farms, 80 Cows or Fewer, 2008. 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 Department of Applied Economics and Management website <http://aem.cornell.edu> for a list of all department publications and a publication order form.

Table 51.

PROGRESS OF FARM BUSINESSES WITH LESS THAN 100 COWS
Same 38 New York Dairy Farms, 2004 - 2008

Selected Factors	2004	2005	2006	2007	2008
Milk receipts per cwt. milk	\$16.97	\$15.93	\$13.91	\$20.64	\$19.65
<u>Size of Business</u>					
Average number of cows	58	58	58	60	59
Average number of heifers	44	48	49	50	52
Milk sold, cwt.	10,580	11,040	11,048	11,149	11,162
Worker equivalent	2.21	2.22	2.18	2.18	2.22
Total tillable acres	183	182	182	181	184
<u>Rates of Production</u>					
Milk sold per cow, lbs.	18,232	18,922	18,945	18,721	18,867
Hay DM per acre, tons	2.3	2.0	2.2	2.0	2.2
Corn silage per acre, tons	16	16	13	16	17
<u>Labor Efficiency</u>					
Cows per worker	26	26	27	27	27
Milk sold per worker, lbs.	479,809	497,280	506,795	511,420	502,772
<u>Cost Control</u>					
Grain & concn. purchased as % of milk sales	28%	28%	32%	24%	32%
Dairy feed & crop expense per cwt. milk	\$6.12	\$5.75	\$5.91	\$6.56	\$8.35
Operating cost of producing cwt. milk	\$12.32	\$11.17	\$11.63	\$13.67	\$15.42
Total cost of producing cwt. milk	\$19.43	\$18.06	\$18.88	\$21.01	\$23.10
Hired labor cost per cwt.	\$0.76	\$0.83	\$0.72	\$0.87	\$0.89
Interest paid per cwt.	\$0.61	\$0.65	\$0.82	\$0.83	\$0.71
Labor & machinery costs per cow	\$1,617	\$1,593	\$1,652	\$1,728	\$1,844
Replacement livestock expense	\$4,236	\$2,341	\$1,626	\$1,815	\$1,293
Expansion livestock expense	\$0	\$1,305	\$74	\$47	\$696
<u>Capital Efficiency</u>					
Farm capital per cow	\$8,857	\$9,490	\$10,196	\$10,595	\$11,202
Machinery & equipment per cow	\$1,790	\$1,942	\$2,060	\$2,128	\$2,350
Real estate per cow	\$4,176	\$4,400	\$4,745	\$5,039	\$5,199
Livestock investment per cow	\$1,923	\$2,099	\$2,234	\$2,279	\$2,366
Asset turnover ratio	0.44	0.43	0.33	0.44	0.38
<u>Profitability</u>					
Net farm income without appreciation	\$34,900	\$38,592	\$10,605	\$64,191	\$32,722
Net farm income with appreciation	\$53,484	\$62,700	\$18,281	\$82,846	\$36,010
Labor & management income per operator/manager	\$6,063	\$7,226	\$-17,717	\$25,299	\$-1,965
Rate return on:					
Equity capital with appreciation	3.0%	5.2%	-5.5%	8.0%	-1.8%
All capital with appreciation	3.5%	5.2%	-2.7%	7.6%	-0.2%
All capital without appreciation	-0.1%	0.9%	-4.0%	4.7%	-0.7%
<u>Financial Summary, End Year</u>					
Farm net worth	\$400,710	\$445,704	\$450,405	\$515,902	\$520,637
Change in net worth with appreciation	\$37,333	\$45,986	\$-2,727	\$53,163	\$5,237
Debt to asset ratio	0.25	0.23	0.24	0.21	0.23
Farm debt per cow	\$2,200	\$2,201	\$2,492	\$2,276	\$2,542

Table 52.

PROGRESS OF FARM BUSINESSES WITH 100-499 COWS
Same 57 New York Dairy Farms, 2004 - 2008

Selected Factors	2004	2005	2006	2007	2008
Milk receipts per cwt. milk	\$16.96	\$16.14	\$13.92	\$20.53	\$19.39
<u>Size of Business</u>					
Average number of cows	232	238	247	259	270
Average number of heifers	173	188	202	208	223
Milk sold, cwt.	49,067	51,902	54,084	57,227	61,153
Worker equivalent	6.04	6.18	6.32	6.37	6.77
Total tillable acres	537	557	565	583	642
<u>Rates of Production</u>					
Milk sold per cow, lbs.	21,116	21,780	21,899	22,094	22,608
Hay DM per acre, tons	3.4	3.1	3.2	3.2	3.5
Corn silage per acre, tons	18	19	17	19	19
<u>Labor Efficiency</u>					
Cows per worker	38	39	39	41	40
Milk sold per worker, lbs.	812,365	839,845	855,755	898,382	903,290
<u>Cost Control</u>					
Grain & concn. purchased as % of milk sales	27%	26%	30%	24%	31%
Dairy feed & crop expense per cwt. milk	\$5.58	\$5.18	\$5.11	\$6.24	\$7.45
Operating cost of producing cwt. milk	\$12.34	\$12.10	\$11.96	\$13.76	\$15.40
Total cost of producing cwt. milk	\$16.24	\$16.00	\$15.69	\$17.58	\$19.34
Hired labor cost per cwt.	\$2.41	\$2.41	\$2.44	\$2.47	\$2.64
Interest paid per cwt.	\$0.51	\$0.61	\$0.73	\$0.69	\$0.51
Labor & machinery costs per cow	\$1,358	\$1,413	\$1,391	\$1,499	\$1,650
Replacement livestock expense	\$8,980	\$10,498	\$7,347	\$6,122	\$7,296
Expansion livestock expense	\$8,032	\$4,807	\$2,217	\$6,951	\$11,294
<u>Capital Efficiency</u>					
Farm capital per cow	\$7,369	\$7,844	\$7,967	\$8,340	\$8,996
Machinery & equipment per cow	\$1,414	\$1,478	\$1,500	\$1,521	\$1,631
Real estate per cow	\$2,973	\$3,168	\$3,237	\$3,310	\$3,581
Livestock investment per cow	\$1,841	\$1,976	\$2,046	\$2,143	\$2,212
Asset turnover ratio	0.59	0.56	0.48	0.66	0.57
<u>Profitability</u>					
Net farm income without appreciation	\$155,315	\$135,722	\$40,076	\$314,164	\$163,873
Net farm income with appreciation	\$212,695	\$205,674	\$96,162	\$414,099	\$194,696
Labor & management income per operator/manager	\$63,896	\$41,486	\$-19,313	\$144,030	\$42,825
Rate return on:					
Equity capital with appreciation	13.2%	11.0%	2.1%	22.5%	6.9%
All capital with appreciation	10.2%	9.3%	3.4%	17.8%	6.3%
All capital without appreciation	6.9%	5.5%	0.6%	13.2%	5.0%
<u>Financial Summary, End Year</u>					
Farm net worth	\$1,209,499	\$1,342,428	\$1,364,634	\$1,701,511	\$1,792,387
Change in net worth with appreciation	\$146,859	\$116,506	\$23,023	\$329,103	\$77,489
Debt to asset ratio	0.32	0.31	0.32	0.26	0.29
Farm debt per cow	\$2,413	\$2,493	\$2,500	\$2,331	\$2,676

Table 53.

PROGRESS OF FARM BUSINESSES WITH MORE THAN 500 COWS
Same 45 New York Dairy Farms, 2004 - 2008

Selected Factors	2004	2005	2006	2007	2008
Milk receipts per cwt. milk	\$16.52	\$15.93	\$13.85	\$20.37	\$19.25
<u>Size of Business</u>					
Average number of cows	876	909	961	955	975
Average number of heifers	690	734	777	768	818
Milk sold, cwt.	203,573	219,653	232,226	231,414	244,125
Worker equivalent	19.35	19.79	20.48	20.89	21.67
Total tillable acres	1,636	1,711	1,773	1,803	1,934
<u>Rates of Production</u>					
Milk sold per cow, lbs.	23,250	24,171	24,160	24,225	25,034
Hay DM per acre, tons	3.9	3.7	3.4	3.2	4.0
Corn silage per acre, tons	18	19	19	19	20
<u>Labor Efficiency</u>					
Cows per worker	45	46	47	46	45
Milk sold per worker, lbs.	1,052,057	1,109,917	1,133,916	1,107,776	1,126,559
<u>Cost Control</u>					
Grain & concn. purchased as % of milk sales	28%	26%	29%	24%	31%
Dairy feed & crop expense per cwt. milk	\$5.56	\$5.05	\$4.98	\$6.05	\$7.33
Operating cost of producing cwt. milk	\$12.52	\$12.27	\$12.28	\$14.07	\$15.51
Total cost of producing cwt. milk	\$15.01	\$14.92	\$14.90	\$16.90	\$18.53
Hired labor cost per cwt.	\$2.96	\$2.89	\$2.85	\$2.98	\$3.09
Interest paid per cwt.	\$0.50	\$0.59	\$0.77	\$0.80	\$0.59
Labor & machinery costs per cow	\$1,281	\$1,342	\$1,343	\$1,458	\$1,632
Replacement livestock expense	\$23,364	\$22,312	\$10,708	\$13,181	\$23,669
Expansion livestock expense	\$54,669	\$32,016	\$63,934	\$23,686	\$45,242
<u>Capital Efficiency</u>					
Farm capital per cow	\$6,417	\$6,918	\$7,209	\$7,885	\$8,734
Machinery & equipment per cow	\$1,037	\$1,127	\$1,165	\$1,289	\$1,462
Real estate per cow	\$2,414	\$2,519	\$2,686	\$2,886	\$3,196
Livestock investment per cow	\$1,860	\$2,020	\$2,117	\$2,264	\$2,370
Asset turnover ratio	0.72	0.68	0.59	0.75	0.65
<u>Profitability</u>					
Net farm income without appreciation	\$567,424	\$519,199	\$78,394	\$1,155,107	\$573,433
Net farm income with appreciation	\$766,642	\$822,332	\$320,192	\$1,523,158	\$730,320
Labor & management income per operator/manager	\$216,193	\$170,331	\$-62,808	\$456,652	\$147,495
Rate return on:					
Equity capital with appreciation	21.5%	19.3%	4.9%	30.3%	11.2%
All capital with appreciation	13.5%	13.3%	5.4%	21.1%	8.8%
All capital without appreciation	10.0%	8.5%	2.0%	16.2%	6.9%
<u>Financial Summary, End Year</u>					
Farm net worth	\$3,359,279	\$3,986,471	\$4,087,293	\$5,238,987	\$5,513,324
Change in net worth with appreciation	\$603,091	\$620,740	\$59,022	\$1,227,742	\$247,754
Debt to asset ratio	0.43	0.40	0.43	0.36	0.38
Farm debt per cow	\$2,857	\$2,853	\$3,100	\$3,044	\$3,350

Table 54.

FARM BUSINESS SUMMARY BY HERD SIZE
224 New York Dairy Farms, 2008

Item	Farm Size:	Less than 50 Cows	50 to 74 Cows	75 to 99 Cows	100 to 199 Cows
Number of farms		20	27	21	44
<u>ACCRUAL EXPENSES</u>					
Hired labor		\$6,211	\$11,986	\$21,226	\$57,459
Dairy grain & concentrate		42,109	64,769	109,517	175,965
Dairy roughage		3,207	7,381	9,983	10,434
Nondairy feed		27	187	205	78
Professional nutritional services		0	0	89	175
Machine hire, rent & lease		1,689	4,508	8,843	17,037
Machine repairs & farm vehicle expense		9,420	13,955	25,255	30,407
Fuel, oil & grease		7,525	11,387	18,565	32,875
Replacement livestock		1,350	544	1,805	3,272
Breeding		2,979	2,815	4,109	7,087
Veterinary & medicine		3,630	6,239	8,412	17,278
Milk marketing		10,252	12,667	19,040	29,468
Bedding		1,699	2,085	3,481	7,539
Milking supplies		2,538	5,424	6,855	12,225
Cattle lease & rent		0	0	0	541
Custom boarding		0	1,864	1,282	6,413
bST expense		301	731	993	3,388
Livestock professional fees		716	885	848	1,582
Other livestock expense		2,611	3,344	3,229	7,087
Fertilizer & lime		3,294	5,915	9,602	19,245
Seeds & plants		1,579	2,754	4,639	9,171
Spray & other crop expense		1,634	1,432	4,588	7,437
Crop professional fees		28	68	206	1,035
Land, building & fence repair		2,102	3,774	4,591	10,992
Taxes & rent		5,046	8,700	9,783	18,735
Utilities		4,999	8,054	10,449	15,731
Interest paid		6,118	7,447	13,915	17,202
Other professional fees		645	1,080	822	1,973
Misc. (including insurance)		<u>3,555</u>	<u>5,127</u>	<u>7,356</u>	<u>12,231</u>
Total Operating Expenses		\$125,263	\$195,119	\$309,686	\$534,061
Expansion livestock		30	1,035	1,326	715
Extraordinary expense		425	113	0	172
Machinery depreciation		8,703	13,082	13,997	31,918
Building depreciation		<u>4,496</u>	<u>4,299</u>	<u>7,890</u>	<u>15,937</u>
Total Accrual Expenses		\$138,918	\$213,648	\$332,899	\$582,802
<u>ACCRUAL RECEIPTS</u>					
Milk sales		\$144,793	\$214,356	\$324,713	\$564,981
Dairy cattle		12,306	12,151	12,173	24,050
Dairy calves		894	1,568	1,531	2,136
Other livestock		1,250	1,689	1,370	656
Crops		1,958	3,088	7,878	29,717
Miscellaneous receipts		<u>6,370</u>	<u>8,521</u>	<u>11,334</u>	<u>17,540</u>
Total Accrual Receipts		\$167,572	\$255,983	\$358,999	\$639,080
<u>PROFITABILITY ANALYSIS</u>					
Net farm income (without appreciation)		\$28,655	\$27,724	\$26,100	\$56,278
Net farm income (with appreciation)		\$31,395	\$32,353	\$31,104	\$76,363
Labor & management income		\$-1,826	\$-8,105	\$-15,386	\$-3,965
Number of operators		1.09	1.25	1.43	1.74
Labor & management income/operator		\$-1,675	\$-6,484	\$-10,759	\$-2,279
Rates of return on: Equity capital w/o apprec.		-2.1%	-2.9%	-4.7%	-1.1%
Equity capital with appreciation		-1.5%	-2.0%	-3.9%	0.8%
All capital without appreciation		-0.6%	-1.2%	-1.8%	0.4%
All capital with appreciation		-0.2%	-0.5%	-1.3%	1.8%

Table 54. (continued)

FARM BUSINESS SUMMARY BY HERD SIZE
224 New York Dairy Farms, 2008

Item	Farm Size:	200 to 399 Cows	400 to 599 Cows	600 to 899 Cows	900 or More Cows
Number of farms		30	26	23	33
<u>ACCRUAL EXPENSES</u>					
Hired labor		\$159,885	\$320,985	\$515,771	\$1,032,370
Dairy grain & concentrate		371,577	693,460	1,039,970	1,967,931
Dairy roughage		23,174	22,636	86,037	91,576
Nondairy feed		0	36	145	0
Professional nutritional services		223	162	1,087	3,315
Machine hire, rent & lease		43,324	50,981	71,409	85,555
Machine repairs & farm vehicle expense		57,187	115,065	146,221	273,571
Fuel, oil & grease		59,736	115,070	160,169	292,313
Replacement livestock		10,047	1,813	28,257	20,501
Breeding		17,312	32,155	49,990	86,874
Veterinary & medicine		41,100	78,121	122,216	242,156
Milk marketing		59,609	99,180	171,814	257,075
Bedding		23,084	40,114	70,458	116,730
Milking supplies		24,857	54,119	58,973	133,059
Cattle lease & rent		724	1,037	266	4,638
Custom boarding		21,246	28,279	77,870	155,464
bST expense		10,532	12,766	38,555	107,476
Livestock professional services		3,899	6,066	8,311	16,466
Other livestock expense		7,743	8,533	29,056	16,086
Fertilizer & lime		43,363	55,700	86,546	139,541
Seeds & plants		19,965	42,247	58,118	114,027
Spray & other crop expense		15,013	28,494	41,505	63,733
Crop professional fees		1,335	3,408	8,434	20,070
Land, building & fence repair		17,394	40,029	69,677	114,141
Taxes & rent		29,796	55,858	75,357	158,723
Utilities		30,980	47,083	70,660	137,225
Interest paid		33,680	62,272	103,421	175,301
Other professional fees		6,338	11,413	12,770	37,832
Misc. (including insurance)		<u>20,972</u>	<u>35,344</u>	<u>56,357</u>	<u>96,259</u>
Total Operating Expenses		\$1,154,095	\$2,062,426	\$3,259,419	\$5,960,009
Expansion livestock		15,067	26,942	19,285	63,474
Extraordinary expense		229	1,602	619	1,777
Machinery depreciation		49,666	95,412	146,089	284,393
Building depreciation		<u>27,645</u>	<u>69,735</u>	<u>87,957</u>	<u>190,032</u>
Total Accrual Expenses		\$1,246,702	\$2,256,117	\$3,513,368	\$6,499,685
<u>ACCRUAL RECEIPTS</u>					
Milk sales		\$1,237,687	\$2,250,971	\$3,469,072	\$6,505,048
Dairy cattle		81,499	141,894	242,052	437,346
Dairy calves		12,807	19,603	8,433	33,950
Other livestock		3,044	10,473	20,438	2,126
Crops		65,012	110,440	184,774	232,841
Misc. receipts		<u>30,062</u>	<u>54,472</u>	<u>73,510</u>	<u>182,501</u>
Total Accrual Receipts		\$1,430,111	\$2,587,853	\$3,998,278	\$7,393,812
<u>PROFITABILITY ANALYSIS</u>					
Net farm income (without appreciation)		\$183,409	\$331,736	\$484,910	\$894,127
Net farm income (with appreciation)		\$187,743	\$386,613	\$568,316	\$1,005,180
Labor & management income		\$91,672	\$177,728	\$270,184	\$497,812
Number of operators		1.66	2.07	1.70	2.45
Labor & management income/operator		\$55,224	\$85,859	\$158,932	\$203,189
Rates of return on: Equity capital w/o apprec.		6.1%	7.6%	8.9%	9.2%
Equity capital with appreciation		6.3%	9.4%	10.9%	10.6%
All capital without appreciation		5.6%	6.6%	7.5%	7.6%
All capital with appreciation		5.8%	7.8%	8.8%	8.5%

Table 55.

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
224 New York Dairy Farms, 2008

Item	Farms with:		50 to 74 Cows	
	Less than 50 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash, checking & savings	\$4,802	\$3,143	\$7,041	\$6,183
Accounts receivable	11,359	9,798	18,383	12,751
Prepaid expenses	209	128	118	156
Feed & supplies	25,985	25,790	44,523	47,028
Livestock ⁵⁰	99,318	101,773	150,121	147,239
Machinery & equipment ⁵⁰	92,313	97,395	131,869	142,616
Farm Credit stock	285	285	580	598
Other stock & certificates	1,123	1,322	6,481	7,152
Land & buildings ⁵⁰	<u>336,729</u>	<u>337,461</u>	<u>333,780</u>	<u>339,002</u>
Total Farm Assets	\$572,212	\$577,095	\$692,895	\$702,724
Personal cash, checking & savings	\$20,929	\$22,636	\$8,277	\$6,824
Cash value of life insurance	10,699	10,540	14,526	15,485
Nonfarm real estate	36,111	36,111	31,077	31,077
Auto (personal share)	5,967	8,911	7,436	7,321
Stocks & bonds	14,628	17,935	41,600	26,336
Household furnishings	12,444	12,444	12,846	12,615
All other	<u>1,556</u>	<u>350</u>	<u>1,538</u>	<u>2,308</u>
Nonfarm Assets ⁵¹	\$102,334	\$108,927	\$117,301	\$101,966
Farm & Nonfarm Assets	\$674,546	\$686,022	\$810,196	\$804,690
LIABILITIES				
Accounts payable	\$3,334	\$3,786	\$10,594	\$14,366
Operating debt	2,929	2,289	6,914	7,783
Short term	1,200	0	1,931	2,407
Advanced government receipt	0	0	0	0
Current Portion:				
Intermediate	7,038	8,920	11,904	13,898
Long Term	2,526	3,238	5,282	5,234
Intermediate ⁵²	44,215	44,817	57,301	49,570
Long term ⁵⁰	<u>42,581</u>	<u>38,217</u>	<u>60,441</u>	<u>60,413</u>
Total Farm Liabilities	\$103,823	\$101,267	\$154,366	\$153,671
Nonfarm Liabilities ⁵¹	0	2,122	965	505
Farm & Nonfarm Liabilities	\$103,823	\$103,389	\$155,331	\$154,176
Farm Net Worth (Equity Capital)	\$468,389	\$475,828	\$538,529	\$549,053
Farm & Nonfarm Net Worth	\$570,723	\$582,633	\$654,865	\$650,514
FINANCIAL MEASURES				
Percent Equity	82%		78%	
Debt/asset ratio-long term	0.11		0.18	
Debt/asset ratio-intermediate & current	0.26		0.26	
Change in net worth with appreciation	\$7,439		\$10,524	
Total farm debt per cow	\$2,570		\$2,553	
Debt payments made per cow	\$634		\$525	
Debt payments as % of milk sales	17%		15%	
Amount available for debt service	\$20,331		\$32,631	
Cash flow coverage ratio for 2008	1.16		1.33	
Debt coverage ratio for 2008	1.10		1.04	

⁵⁰Includes discounted lease payments.

⁵¹Average of farms reporting nonfarm assets and liabilities for 2008.

⁵²Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 55. (cont'd)

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
224 New York Dairy Farms, 2008

Item	Farms with:		100 to 199 Cows	
	75 to 99 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash, checking & savings	\$8,290	\$3,871	\$15,027	\$9,912
Accounts receivable	28,063	21,390	51,818	41,659
Prepaid expenses	142	138	344	250
Feed & supplies	68,507	79,852	115,805	133,105
Livestock ⁵³	220,486	216,671	337,589	330,092
Machinery & equipment ⁵³	176,074	195,120	272,237	296,374
Farm Credit stock	949	900	1,179	1,102
Other stock & certificates	9,005	9,621	21,112	23,640
Land & buildings ⁵³	<u>414,566</u>	<u>429,798</u>	<u>611,755</u>	<u>651,161</u>
Total Farm Assets	\$926,083	\$957,360	\$1,426,866	\$1,487,295
Personal cash, checking & savings	\$946	\$4,206	\$14,434	\$12,501
Cash value of life insurance	23,098	24,107	13,229	13,045
Nonfarm real estate	52,556	73,103	85,417	84,167
Auto (personal share)	5,633	6,967	6,008	9,436
Stocks & bonds	23,848	24,482	43,710	39,676
Household furnishings	9,889	9,889	14,083	14,083
All other	<u>16,709</u>	<u>10,951</u>	<u>20,961</u>	<u>17,250</u>
Nonfarm Assets ⁵⁴	\$132,678	\$153,705	\$197,842	\$190,157
Farm & Nonfarm Assets	\$1,058,761	\$1,111,065	\$1,624,708	\$1,677,452
LIABILITIES				
Accounts payable	\$7,931	\$21,907	\$10,842	\$22,331
Operating debt	10,406	13,452	18,500	21,853
Short term	609	1,040	4,318	4,110
Advanced government receipt	0	0	110	0
Current Portion:				
Intermediate	19,833	23,905	19,746	29,689
Long Term	7,423	7,891	11,952	15,063
Intermediate ⁵⁵	85,066	89,255	148,918	144,088
Long term ⁵³	<u>126,512</u>	<u>137,464</u>	<u>117,245</u>	<u>124,095</u>
Total Farm Liabilities	\$257,779	\$294,914	\$331,631	\$361,229
Nonfarm Liabilities ⁵⁴	<u>0</u>	<u>1,422</u>	<u>0</u>	<u>2,167</u>
Farm & Nonfarm Liabilities	\$257,779	\$296,336	\$331,631	\$363,396
Farm Net Worth (Equity Capital)	\$668,304	\$662,447	\$1,095,235	\$1,126,065
Farm & Nonfarm Net Worth	\$800,982	\$814,729	\$1,293,077	\$1,314,056
FINANCIAL MEASURES				
	75 to 99 Cows		100 to 199 Cows	
Percent equity	69%		76%	
Debt/asset ratio-long term	0.32		0.19	
Debt/asset ratio-intermediate & current	0.30		0.28	
Change in net worth with appreciation	\$-5,858		\$30,830	
Total farm debt per cow	\$3,323		\$2,500	
Debt payments made per cow	\$501		\$550	
Debt payments as % of milk sales	14%		14%	
Amount available for debt service	\$38,574		\$81,903	
Cash flow coverage ratio for 2008	0.94		1.20	
Debt coverage ratio for 2008	0.66		1.10	

⁵³Includes discounted lease payments.⁵⁴Average of farms reporting nonfarm assets and liabilities for 2008.⁵⁵Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 55. (cont'd)

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
224 New York Dairy Farms, 2008

Item	Farms with:		400 to 599 Cows	
	200 to 399 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash, checking & savings	\$19,240	\$13,854	\$16,766	\$41,709
Accounts receivable	123,823	93,562	205,120	161,057
Prepaid expenses	2,869	2,358	5,836	2,502
Feed & supplies	262,561	306,799	457,946	492,444
Livestock ⁵⁶	630,909	648,078	1,073,955	1,125,578
Machinery & equipment ⁵⁶	440,681	493,432	697,313	806,633
Farm Credit stock	961	994	846	885
Other stock & certificates	57,411	55,381	72,618	83,358
Land & buildings ⁵⁶	<u>880,114</u>	<u>948,392</u>	<u>1,698,573</u>	<u>1,961,767</u>
Total Farm Assets	\$2,418,569	\$2,562,852	\$4,228,972	\$4,675,931
Personal cash, checking & savings	\$8,090	\$7,973	\$0	\$0
Cash value of life insurance	29,884	32,612	7,188	7,500
Nonfarm real estate	531,154	531,154	153,438	153,438
Auto (personal share)	23,833	24,167	3,750	2,875
Stocks & bonds	250,499	152,030	78,837	61,472
Household furnishings	6,583	7,667	2,500	3,750
All other	<u>3,072</u>	<u>1,892</u>	<u>0</u>	<u>0</u>
Nonfarm Assets ⁵⁷	\$853,115	\$757,495	\$245,712	\$229,035
Farm & Nonfarm Assets	\$3,271,684	\$3,320,347	\$4,474,684	\$4,904,966
LIABILITIES				
Accounts payable	\$24,199	\$39,544	\$16,084	\$28,902
Operating debt	54,816	64,046	80,274	79,681
Short term	6,083	11,147	1,882	765
Advanced government receipt	0	0	0	0
Current Portion:				
Intermediate	39,359	58,462	117,377	122,319
Long Term	17,659	21,694	52,019	51,508
Intermediate ⁵⁸	258,729	265,698	482,973	532,784
Long term ⁵⁶	<u>288,780</u>	<u>317,060</u>	<u>514,159</u>	<u>743,485</u>
Total Farm Liabilities	\$689,624	\$777,651	\$1,264,768	\$1,559,444
Nonfarm Liabilities ⁵⁷	<u>6,463</u>	<u>7,242</u>	<u>0</u>	<u>0</u>
Farm & Nonfarm Liabilities	\$696,087	\$784,893	\$1,264,768	\$1,559,444
Farm Net Worth (Equity Capital)	\$1,728,945	\$1,785,201	\$2,964,204	\$3,116,487
Farm & Nonfarm Net Worth	\$2,575,597	\$2,535,454	\$3,209,916	\$3,345,522
FINANCIAL MEASURES				
Percent equity	70%		67%	
Debt/asset ratio-long term	0.33		0.38	
Debt/asset ratio-intermediate & current	0.29		0.30	
Change in net worth with appreciation	\$56,256		\$152,283	
Total farm debt per cow	\$2,691		\$3,144	
Debt payments made per cow	\$495		\$547	
Debt payments as % of milk sales	11%		12%	
Amount available for debt service	\$169,861		\$397,971	
Cash flow coverage ratio for 2008	1.36		1.70	
Debt coverage ratio for 2008	1.52		1.76	

⁵⁶Includes discounted lease payments.⁵⁷Average of farms reporting nonfarm assets and liabilities for 2008.⁵⁸Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 55. (cont'd)

FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
224 New York Dairy Farms, 2008

Item	Farms with:		More than 900 Cows	
	600 to 899 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash, checking & savings	\$34,557	\$26,680	\$60,650	\$36,903
Accounts receivable	307,743	235,286	606,573	509,185
Prepaid expenses	6,886	5,720	25,081	35,398
Feed & supplies	717,797	809,051	1,304,280	1,488,895
Livestock ⁵⁹	1,784,804	1,764,903	3,215,022	3,187,926
Machinery & equipment ⁵⁹	1,004,234	1,167,549	1,741,492	2,005,796
Farm Credit stock	2,955	3,241	1,471	1,488
Other stock & certificates	119,536	133,243	241,568	281,973
Land & buildings ⁵⁹	<u>2,270,354</u>	<u>2,560,264</u>	<u>4,386,662</u>	<u>4,795,342</u>
Total Farm Assets	\$6,248,865	\$6,705,937	\$11,582,799	\$12,342,906
Personal cash, checking & savings	\$25,302	\$4,576	\$2,909	\$7,853
Cash value of life insurance	70,733	50,951	124,057	172,641
Nonfarm real estate	287,500	287,500	50,000	50,000
Auto (personal share)	10,625	10,000	4,857	4,857
Stocks & bonds	16,519	12,813	316,974	243,315
Household furnishings	6,125	6,125	0	0
All other	<u>28,717</u>	<u>66,894</u>	<u>4,286</u>	<u>5,612</u>
Nonfarm Assets ⁶⁰	\$445,521	\$438,859	\$503,083	\$484,278
Farm & Nonfarm Assets	\$6,694,386	\$7,144,796	\$12,085,882	\$12,827,184
LIABILITIES				
Accounts payable	\$66,411	\$92,698	\$127,439	\$150,962
Operating debt	126,595	162,770	267,812	382,352
Short term	5,916	13,621	18,040	1,244
Advanced government receipts	0	0	0	0
Current Portion:				
Intermediate	170,459	209,321	207,786	321,022
Long Term	67,995	76,043	104,549	108,014
Intermediate ⁶¹	921,431	953,065	1,495,357	1,634,462
Long term ⁵⁹	<u>741,739</u>	<u>757,719</u>	<u>1,600,051</u>	<u>1,657,650</u>
Total Farm Liabilities	\$2,100,547	\$2,265,237	\$3,821,034	\$4,255,708
Nonfarm Liabilities ⁶⁰	<u>5,898</u>	<u>3,431</u>	<u>0</u>	<u>0</u>
Farm & Nonfarm Liabilities	\$2,106,445	\$2,268,668	\$3,821,034	\$4,255,708
Farm Net Worth (Equity Capital)	4,148,319	4,440,700	7,761,764	8,087,198
Farm & Nonfarm Net Worth	\$4,587,941	\$4,876,128	\$8,264,848	\$8,571,476
FINANCIAL MEASURES				
Percent equity	66%		66%	
Debt/asset ratio-long term	0.30		0.35	
Debt/asset ratio-intermediate & current	0.36		0.34	
Change in net worth with appreciation	\$292,382		\$325,434	
Total farm debt per cow	\$3,136		\$3,067	
Debt payments made per cow	\$605		\$562	
Debt payments as % of milk sales	13%		12%	
Amount available for debt service	\$608,728		\$762,216	
Cash flow coverage ratio for 2008	1.56		1.14	
Debt coverage ratio for 2008	1.67		1.30	

⁵⁹Includes discounted lease payments.⁶⁰Average of farms reporting nonfarm assets and liabilities for 2008.⁶¹Includes Farm Credit stock & discounted lease payments for cattle & machinery.

Table 56.

SELECTED BUSINESS FACTORS BY HERD SIZE
224 New York Dairy Farms, 2008

Item	Farms with:	Less than 50 Cows	50 to 74 Cows	75 to 99 Cows	100 to 199 Cows
Number of farms		20	27	21	44
<u>Cropping Program Analysis</u>					
Total Tillable acres		148	197	233	411
Tillable acres rented ⁶²		76	78	95	192
Hay crop acres ⁶²		112	134	158	239
Corn silage acres ⁶²		11	27	60	94
Hay crop, tons DM/acre		1.9	2.1	2.5	2.8
Corn silage, tons/acre		15	17	16	18
Oats, bushels/acre		0	61	0	63
Forage DM per cow, tons		7.5	7.9	9.2	9.2
Tillable acres/cow		4.1	3.5	2.8	2.9
Fertilizer & lime expense/tillable acre		\$24.15	\$36.32	\$43.39	\$48.39
Total machinery costs		\$32,162	\$50,746	\$73,901	\$129,457
Machinery cost/tillable acre		\$206	\$240	\$300	\$312
<u>Dairy Analysis</u>					
Number of cows		39	60	88	143
Number of heifers		33	50	78	116
Milk sold, lbs.		740,579	1,102,541	1,646,255	2,907,993
Milk sold/cow, lbs.		18,989	18,296	18,638	20,313
Operating cost of producing milk/cwt.		\$13.84	\$15.34	\$16.81	\$15.84
Total cost of producing milk/cwt.		\$24.05	\$23.33	\$23.62	\$21.74
Price/cwt. milk sold		\$19.55	\$19.44	\$19.72	\$19.43
Purchased dairy feed/cow		\$1,162	\$1,197	\$1,353	\$1,302
Purchased dairy feed/cwt. milk		\$6.12	\$6.54	\$7.26	\$6.41
Purchased grain & concentrate as % of milk receipts		30%	30%	34%	32%
Purchased feed & crop expense/cwt. milk		\$7.00	\$7.47	\$8.42	\$7.68
Cull rate		23%	29%	28%	31%
<u>Capital Efficiency</u>					
Farm capital/worker		\$340,032	\$299,489	\$328,126	\$358,005
Farm capital/cow		\$14,735	\$11,580	\$10,661	\$10,178
Farm capital/tillable acre owned		\$7,954	\$5,866	\$6,817	\$6,650
Real estate/cow		\$8,643	\$5,582	\$4,780	\$4,411
Machinery investment/cow		\$2,432	\$2,277	\$2,101	\$1,986
Asset turnover ratio		0.30	0.35	0.39	0.45
<u>Labor Efficiency</u>					
Worker equivalent		1.69	2.33	2.87	4.07
Operator/manager equivalent		1.09	1.25	1.43	1.74
Milk sold/worker, lbs.		438,645	472,517	573,441	715,080
Cows/worker		23	26	31	35
Labor cost/cow		\$1,263	\$1,021	\$901	\$848
Labor cost/tillable acre		\$332	\$313	\$342	\$295

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

Table 56. (cont'd)

SELECTED BUSINESS FACTORS BY HERD SIZE
224 New York Dairy Farms, 2008

Item	Farms with:	200 to 399 Cows	400 to 599 Cows	600 to 899 Cows	900 or More Cows
Number of farms		30	26	23	33
<u>Cropping Program Analysis</u>					
Total Tillable acres		658	1,159	1,438	2,536
Tillable acres rented ⁶³		379	620	820	1,199
Hay crop acres ⁶³		313	522	635	1,123
Corn silage acres ⁶³		198	407	518	963
Hay crop, tons DM/acre		3.3	3.7	3.5	4.0
Corn silage, tons/acre		19	19	21	21
Oats, bushels/acre		54	78	56	0
Forage DM per cow, tons		8.1	9.5	8.0	8.4
Tillable acres/cow		2.3	2.4	2.0	1.9
Fertilizer & lime exp./tillable acre		\$66.36	\$49.05	\$63.66	\$52.53
Total machinery costs		\$233,267	\$414,127	\$578,182	\$1,029,514
Machinery cost/tillable acre		\$355	\$357	\$402	\$406
<u>Dairy Analysis</u>					
Number of cows		285	479	725	1,350
Number of heifers		230	410	622	1,132
Milk sold, lbs.		6,452,499	11,608,575	17,652,992	34,208,347
Milk sold/cow, lbs.		22,672	24,219	24,361	25,338
Operating cost of producing milk/cwt.		\$15.14	\$15.10	\$15.58	\$15.01
Total cost of producing milk/cwt.		\$18.89	\$18.71	\$18.70	\$18.04
Price/cwt. milk sold		\$19.18	\$19.39	\$19.65	\$19.02
Purchased dairy feed/cow		\$1,387	\$1,494	\$1,554	\$1,525
Purchased dairy feed/cwt. milk		\$6.12	\$6.17	\$6.38	\$6.02
Purchased grain & concentrate as % of milk receipts		30%	31%	30%	30%
Purchased feed & crop expense/cwt. milk		\$7.35	\$7.29	\$7.48	\$7.01
Cull rate		32%	31%	33%	35%
<u>Capital Efficiency</u>					
Farm capital/worker		\$367,904	\$363,762	\$396,171	\$415,377
Farm capital/cow		\$8,752	\$9,289	\$8,939	\$8,861
Farm capital/tillable acre owned		\$8,930	\$8,253	\$10,478	\$8,952
Real estate/cow		\$3,212	\$3,818	\$3,333	\$3,401
Machinery investment/cow		\$1,641	\$1,569	\$1,499	\$1,388
Asset turnover ratio		0.58	0.59	0.63	0.63
<u>Labor Efficiency</u>					
Worker equivalent		6.77	12.24	16.35	28.80
Operator/manager equivalent		1.66	2.07	1.70	2.45
Milk sold/worker, lbs.		952,867	948,736	1,080,024	1,187,893
Cows/worker		42	39	44	47
Labor cost/cow		\$775	\$819	\$792	\$823
Labor cost/tillable acre		\$335	\$339	\$399	\$438

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

SUPPLEMENTAL INFORMATION

Comparisons of business performance by farms buying or growing forages, types of housing and herd size, 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 2008, 11 participating farms, including owners and renters, purchased the majority of their feed, including all forages. Only 16 acres of crops were harvested by the average farm. Table 57 highlights the income and expenses for these 11 farms compared to the income and expenses for 149 farms of similar size that grew their forages. Table 58 compares selected business factors for the two groups of farms. In 2008, the 11 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 \$0.90 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 59 on page 65 includes the average values for the resulting five groups of dairy farms. The average size in the five groups ranges from 44 cows on the small conventional farms to 839 cows on the largest freestall farms. The largest freestall farms averaged the highest milk output per cow and per worker, the lowest total cost of production and investment per cow, and the greatest returns to labor, management and capital.

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 2008, 31 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 65. The control group is a selection of non-grazing dairy farms of similar size. In 2008, average profitability was higher on intensive grazing farms. Operating costs of producing milk were \$0.90 per hundredweight lower while total costs were \$0.06 per hundredweight lower 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 Department of Applied Economics and Management. An order form is included in the department website: <http://aem.cornell.edu/order/index.htm> or contact Linda Putnam (e-mail: ldp2@cornell.edu, phone: 607-255-8429).

Comparison of Data, Same Farms, 1999 - 2008

Follow ten years of growth, change and progress made by 52 New York DFBS farms in Table 66, pages 72 and 73. Milk receipts per hundredweight are higher by \$4.20 in 2008 when compared to 1999. Profitability is significantly higher in 2008 but not as high as 2007 levels. 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 41 dairy farms selling less than 18,000 pounds of milk per cow, 67 farms with 18,000 to 21,999 pounds of milk sold per cow, and 116 dairy farms selling 22,000 pounds and more in Table 67 on page 74. Table 68 on page 75 provides the same list of average accrual receipts and expenses for 50 farms averaging less than 80 cows per farm, 55 farms with 80 to 180 cows and 119 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 69 and 70. The Central Valleys 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 22.1 percent from 1998-2008 and they produced milk for an average total cost of \$18.54 per hundredweight in 2008. Total milk production has declined 3.4 percent from 1998-2008 in the Central Valleys Region (Figure 2). However, this is the region with the highest return per hundredweight to labor, management and capital with \$3.46. Western and Central Plateau Region had the second highest return per hundredweight to labor, management and capital with \$3.40.

Comparison of Farms by Milking Frequency

Thirty-three percent of the 224 DFBS farms utilized three times per day (3X) milking in 2008. 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 71.

In 2008, the 3X farms averaged 92 more cows per farm, sold 3.76 percent more milk per cow, but showed an average \$298,647 decrease in net farm income and an increase in total cost of producing milk by 6.8 percent compared to the 3X farm averages for 2007. The 2X farms increased milk output per cow 3.3 percent, but average net farm income decreased by \$101,444 and total production costs increased by \$1.85 per hundredweight in 2008 compared to 2007.

The 3X farms averaged 21.6 percent more milk per cow and 37.2 percent additional milk per worker in 2008 compared with the 2X farms. Similar differences were found in 2007. In 2008, the average total cost of producing milk was 9 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 and received higher returns for their labor, management and capital than the average dairy farmer milking 2X. However, milking frequency was not the only, and probably not the most important, factor that contributed to financial success on these dairy farms. Comparison of herd size, crop yields, labor and capital efficiency indicates there are other important management differences contributing to higher profits.

Other Comparisons

Eighteen dairy renter farms were smaller, on average, and averaged lower labor and management incomes than the average for 224 owned dairy farms (Table 72). A forthcoming publication contains detailed information on New York dairy renters (see <http://aem.cornell.edu/order/index.htm>). Data for the top 10 percent of farms by rate of return on all capital without appreciation is presented in Table 73. 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 224 specialized dairy farms are presented in Table 74.

Table 57.

INCOME & EXPENSE COMPARISON FOR

FARMS BUYING MAJORITY OF FORAGES VERSUS SIMILAR SIZE FARMS GROWING FORAGES, 2008

Item	11 Farms Buying Majority of Forages		149 Similar Size Farms Growing Forages	
Number of cows per farm	134		134	
Pounds of milk sold	3,137,038		2,796,740	
<u>Income</u>	<u>Per Cow</u>	<u>Per Cwt.</u>	<u>Per Cow</u>	<u>Per Cwt.</u>
Milk sold	\$4,472	\$19.16	\$4,042	\$19.36
Dairy cattle	449	1.93	222	1.06
Dairy calves	35	0.15	31	0.15
Other livestock	3	0.01	14	0.07
Crops	-41	-0.18	192	0.92
Miscellaneous	<u>23</u>	<u>0.10</u>	<u>120</u>	<u>0.58</u>
Total Accrual Receipts	\$4,940	\$21.17	\$4,622	\$22.13
<u>Expenses</u>				
Hired labor	\$ 251	\$ 1.08	\$ 436	\$ 2.09
Dairy grain & concentrate	1,287	5.52	1,246	5.97
Dairy roughage	772	3.31	65	0.31
Nondairy	3	0.01	0	0.00
Professional nutritional services	3	0.01	1	0.00
Machinery hire, rent/lease	79	0.34	120	0.57
Machinery repairs/vehicle expense.	117	0.50	222	1.06
Fuel, oil & grease	123	0.53	218	1.04
Replacement livestock	334	1.43	29	0.14
Breeding	45	0.19	58	0.28
Veterinary & medicine	176	0.75	127	0.61
Milk marketing	185	0.79	211	1.01
Bedding	90	0.39	61	0.29
Milking supplies	70	0.30	87	0.42
Cattle lease/rent	0	0.00	2	0.01
Custom boarding	87	0.37	48	0.23
bST expense	75	0.32	27	0.13
Livestock professional fees	8	0.03	12	0.06
Other livestock expenses	24	0.10	41	0.19
Fertilizer & lime	3	0.01	139	0.67
Seeds & plants	3	0.01	65	0.31
Spray, other crop expenses	1	0.00	51	0.25
Crop professional fees	0	0.00	5	0.03
Land/bldg/fence repair	13	0.06	65	0.31
Taxes	24	0.10	65	0.31
Rent & lease	45	0.19	63	0.30
Insurance	59	0.25	50	0.24
Utilities	142	0.61	116	0.55
Interest paid	56	0.24	121	0.58
Other professional fees	21	0.09	19	0.09
Miscellaneous	<u>10</u>	<u>0.04</u>	<u>30</u>	<u>0.14</u>
Total Operating Expenses	\$4,107	\$17.60	\$3,800	\$18.21
Expansion livestock	204	0.87	28	0.13
Extraordinary expense	2	0.01	1	0.01
Machinery depreciation	54	0.23	193	0.92
Building depreciation	<u>72</u>	<u>0.31</u>	<u>91</u>	<u>0.44</u>
Total Accrual Expenses	\$4,439	\$19.02	\$4,113	\$19.71
Net Farm Income (without appreciation)	\$501	\$ 2.15	\$509	\$ 2.42

Table 58.

**SELECTED BUSINESS FACTORS FOR FARMS BUYING MAJORITY OF FORAGES
VERSUS SIMILAR SIZE FARMS GROWING FORAGES, 2008**

Selected Factors	11 Farms Buying Majority of Forages	149 Similar Size Farms Growing Forages
<u>Size of Business</u>		
Average number of cows	134	134
Average number of heifers	96	109
Milk sold, lbs.	3,137,038	2,796,740
Worker equivalent	3.07	3.83
Total tillable acres	73	368
Tillable acres harvested	16	364
<u>Rates of Production</u>		
Milk sold per cow, lbs.	23,332	20,885
Hay DM per acre, tons	4.3	2.7
Corn silage per acre, tons	16.2	18.1
<u>Labor Efficiency & Costs</u>		
Cows per worker	44	35
Milk sold/worker, lbs.	1,022,391	730,061
Hired labor cost/cwt.	\$1.08	\$2.09
Hired labor cost/worker	\$25,810	\$30,182
Hired labor cost as % of milk sales	5.6%	10.8%
<u>Cost Control</u>		
Grain & concentrate purchased as % of milk sales	31%	32%
Grain & concentrate per cwt. milk	\$5.52	\$5.97
Dairy feed & crop expense per cwt. milk	\$8.85	\$7.53
Labor & machinery costs/cow	\$1,042	\$1,707
Total farm operating costs per cwt. sold	\$17.60	\$18.21
Interest costs per cwt. milk	\$0.24	\$0.58
Milk marketing costs per cwt. milk sold	\$0.79	\$1.01
Operating cost of producing cwt. of milk	\$16.47	\$15.57
<u>Capital Efficiency(average for the year)</u>		
Farm capital per cow	\$4,568	\$9,627
Machinery & equipment per cow	\$515	\$1,874
Asset turnover ratio	1.08	0.49
<u>Income Generation</u>		
Gross milk sales per cow	\$4,472	\$4,042
Gross milk sales per cwt.	\$19.16	\$19.36
Net milk sales per cwt.	\$18.37	\$18.34
Dairy cattle sales per cow	\$449	\$222
Dairy calf sales per cow	\$35	\$31
<u>Profitability</u>		
Net farm income without appreciation	\$67,374	\$67,753
Net farm income with appreciation	\$69,412	\$76,884
Labor & management income per operator/manager	\$27,307	\$9,465
Rate of return on equity capital without appreciation	2.2%	1.0%
Rate of return on all capital without appreciation	2.7%	2.0%
<u>Cash flow</u>		
Principal & interest payments per cow, 2008	\$391	\$520
Net cash flow	\$98,236	\$124,010
<u>Financial Summary</u>		
Farm net worth, end year	\$431,169	\$960,840
Farm net worth change from last year, %	5%	2%
Debt to asset ratio	0.34	0.27
Farm debt per cow	\$1,598	\$2,624

Table 59.

SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE
209 New York Dairy Farms, 2008

Item	Farms with:	Conventional		Freestall		
		<= 60 Cows	>60 Cows	<=150 Cows	151-300 Cows	≥300 Cows
Number of farms		28	25	32	33	91
<u>Cropping Program Analysis</u>						
Total Tillable acres		148	275	260	575	1,677
Tillable acres rented ⁶⁴		70	113	127	295	862
Hay crop acres ⁶⁴		112	177	168	276	753
Corn silage acres ⁶⁴		14	54	59	158	621
Hay crop, tons DM/acre		2.0	2.3	2.8	3.1	3.8
Corn silage, tons/acre		16	16.3	18.3	18.2	20.3
Oats, bushels/acre		56	65	65	57	67
Forage DM per cow, tons		7.2	8.9	9.4	9.0	8.5
Tillable acres/cow		3.5	3.3	2.9	2.8	2.0
Fertilizer & lime expense/tillable acre		\$35.17	\$38.96	\$43.94	\$67.91	\$52.35
Total machinery costs		\$36,614	\$74,760	\$87,600	\$188,402	\$661,071
Machinery cost/tillable acre		\$239	\$269	\$297	\$328	\$394
<u>Dairy Analysis</u>						
Number of cows		44	85	98	207	839
Number of heifers		36	75	82	170	708
Milk sold, lbs.		810,642	1,667,050	1,874,904	4,495,717	20,976,580
Milk sold/cow, lbs.		18,576	19,511	19,071	21,759	25,011
Operating cost of producing milk/cwt.		\$14.17	\$16.74	\$15.70	\$15.15	\$15.18
Total cost of producing milk/cwt.		\$23.61	\$23.52	\$22.57	\$19.94	\$18.31
Price/cwt. milk sold		\$19.26	\$19.75	\$19.72	\$19.17	\$19.20
Purchased dairy feed/cow		\$1,142	\$1,250	\$1,405	\$1,306	\$1,532
Purchased dairy feed/cwt. milk		\$6.15	\$6.41	\$7.37	\$6.00	\$6.12
Purchased grain & concentrate as % of milk receipts		30%	32%	33%	30%	30%
Purchased feed & crop expense/cwt milk		\$7.15	\$7.50	\$8.53	\$7.48	\$7.15
<u>Capital Efficiency</u>						
Farm capital/worker		\$325,442	\$325,868	\$328,683	\$405,246	\$396,365
Farm capital/cow		\$13,423	\$11,328	\$10,197	\$9,885	\$8,918
Farm capital/tillable acre owned		\$7,569	\$5,958	\$7,550	\$7,273	\$9,177
Real estate/cow		\$7,270	\$5,256	\$4,468	\$4,018	\$3,424
Machinery investment/cow		\$2,451	\$2,213	\$1,940	\$1,844	\$1,453
Asset turnover ratio		0.31	0.37	0.44	0.49	0.62
<u>Labor Efficiency</u>						
Worker equivalent		1.80	2.97	3.05	5.04	18.86
Operator/manager equivalent		1.09	1.33	1.56	1.75	2.07
Milk sold/worker, lbs.		450,148	560,510	614,387	892,007	1,111,980
Cows/worker		24	29	32	41	44
Labor cost/cow		\$1,159	951	\$916	\$777	\$818
Labor cost/tillable acre		\$342	\$296	\$346	\$279	\$409
<u>Profitability & Balance Sheet Analysis</u>						
Net farm income (without appreciation)		\$29,002	\$24,437	\$42,268	\$117,777	\$558,256
Labor & management income/operator		\$-3,900	\$-16,583	\$-1,300	\$21,991	\$148,631
Rate return on all capital with appreciation		-0.6%	-1.2%	1.21%	3.4%	8.4%
Farm debt/cow		\$2,295	\$2,300	\$2,434	\$2,773	\$3,062
Percent equity		83%	80%	77%	72%	66%

⁶⁴Average of all farms, not only those reporting data.

Table 60.

FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARMS
28 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 2008

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
2.88	60	1,133,862	25,439	3.6	25	45	819,641
2.67	54	1,050,363	23,057	2.6	22	35	771,282
2.39	52	1,016,316	22,177	2.2	20	32	655,772
2.04	50	1,000,533	20,471	2.1	17	29	553,922
1.82	47	936,226	20,011	2.0	16	26	474,086

1.58	45	856,797	19,031	2.0	15	24	432,346
1.47	42	796,058	17,997	2.0	14	22	377,183
1.42	39	700,175	15,491	1.8	13	20	344,999
1.30	33	462,020	14,261	1.7	12	18	315,972
1.08	23	341,718	11,402	1.5	10	15	224,700

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		
\$494	18%	\$504	\$1,320	\$572	\$4.15		
714	21	590	1,567	904	5.33		
819	24	617	1,799	1,038	5.87		
927	28	710	1,902	1,148	6.27		
1,035	29	839	2,037	1,229	6.74		

1,105	30	930	2,161	1,377	7.07		
1,231	32	1,019	2,273	1,528	7.58		
1,368	34	1,065	2,402	1,728	8.59		
1,464	42	1,161	2,556	1,935	10.00		
1,929	53	1,245	3,105	2,254	11.54		

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			
\$4,892	\$10.94	\$18.48	\$73,153	\$1,381	\$36,723	\$41,598	
4,577	12.28	20.82	58,303	1,296	25,217	28,550	
4,406	12.97	21.65	44,824	1,033	17,904	24,793	
4,070	13.49	22.51	34,422	904	8,753	18,716	
3,752	13.73	23.40	31,646	750	4,598	13,386	

3,654	14.17	24.31	29,137	698	-3,198	4,726	
3,413	15.13	24.91	26,562	588	-4,764	-939	
2,903	16.30	26.48	19,822	472	-14,948	-4,994	
2,685	17.20	32.37	12,464	311	-28,034	-15,179	
2,241	17.74	37.80	-15,834	-663	-58,592	-47,298	

Table 61.

FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
25 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 2008

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
4.30	132	2,565,738	26,074	4.4	26	52	952,241
3.92	109	2,300,217	24,714	4.0	25	43	833,627
3.62	102	2,211,757	23,018	3.2	22	42	724,289
3.51	99	1,848,498	22,665	2.8	20	36	671,010
3.42	86	1,762,869	21,206	2.7	18	32	631,629

3.12	85	1,634,115	19,199	2.6	17	29	623,430
2.89	77	1,459,410	17,845	2.5	16	28	580,964
2.44	70	1,357,649	16,895	2.1	15	26	491,001
2.11	67	1,227,908	16,088	1.9	15	21	437,037
1.72	68	1,086,954	15,121	1.4	11	17	279,205

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		
\$613	15%	\$522	\$1,174	\$944	\$4.60		
942	25	624	1,462	1,085	5.83		
1,069	30	742	1,647	1,233	6.74		
1,126	31	825	1,765	1,316	7.19		
1,229	33	919	1,914	1,440	7.55		

1,389	34	969	2,005	1,587	7.78		
1,452	36	1,036	2,120	1,707	7.86		
1,564	37	1,082	2,244	1,831	9.07		
1,647	43	1,196	2,448	1,928	9.39		
1,774	55	1,392	2,553	2,047	12.32		

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			
\$5,090	\$12.41	\$18.34	\$108,180	\$1,422	\$71,675	\$73,056	
4,826	13.82	20.44	84,803	1,280	19,669	46,508	
4,563	14.95	21.80	69,998	968	10,703	34,745	
4,305	15.67	22.54	47,961	544	7,011	33,104	
4,080	16.56	23.64	41,232	444	3,032	21,650	

3,897	17.61	24.72	31,889	338	-7,800	6,171	
3,681	18.43	25.77	19,292	217	-30,012	-6,608	
3,303	19.32	26.81	3,397	39	-49,045	-20,877	
3,156	21.16	28.02	-26,252	-326	-54,247	-46,718	
2,965	23.41	30.91	-59,464	-631	-86,937	-74,973	

Table 62.

FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
32 Freestall Barn Dairy Farms with 150 or Less Cows, New York, 2008

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
4.72	142	3,038,165	24,143	5.3	25	54	985,482
4.27	128	2,621,967	22,730	4.7	22	45	867,912
3.78	122	2,500,310	21,502	4.0	20	39	736,455
3.48	114	2,318,454	20,972	3.3	20	35	667,616
3.26	104	2,026,110	19,797	3.0	18	33	599,694

3.09	96	1,770,963	18,935	2.6	18	30	568,110
2.75	91	1,648,134	18,431	2.4	17	29	537,099
2.39	85	1,491,443	16,715	2.0	16	28	505,801
2.11	70	1,223,254	14,822	1.7	14	27	484,630
1.51	56	714,322	11,768	1.2	10	25	382,187

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		
\$605	23%	\$409	\$1,076	\$840	\$5.76		
887	27	599	1,346	1,212	6.87		
1,092	31	650	1,558	1,421	7.61		
1,260	33	720	1,642	1,501	8.19		
1,335	34	783	1,687	1,618	8.46		

1,353	35	854	1,772	1,740	9.07		
1,371	36	896	1,955	1,822	9.34		
1,397	37	1,000	2,049	1,940	9.87		
1,511	38	1,167	2,237	2,056	10.74		
1,659	42	1,466	2,535	2,271	12.12		

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			
\$4,590	\$10.77	\$17.18	\$167,055	\$1,444	\$97,341	\$174,828	
4,446	14.25	19.79	129,532	1,122	42,953	88,112	
4,362	15.01	20.63	72,508	832	23,772	50,653	
4,020	15.20	22.13	45,653	520	10,569	20,785	
3,910	15.98	22.72	33,327	332	-1,772	12,980	

3,835	16.43	23.38	28,293	248	-6,683	9,679	
3,525	16.78	23.99	20,979	228	-14,067	5,207	
3,281	17.07	25.41	14,526	170	-22,855	-2,639	
2,955	18.22	28.18	6,298	67	-36,296	-25,570	
2,466	22.65	34.28	-52,058	-654	-57,882	-57,421	

Table 63.

FARM BUSINESS CHART FOR MEDIUM FREESTALL DAIRY FARMS
33 Freestall Barn Dairy Farms with 151-300 Cows, New York, 2008

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
7.36	278	7,176,719	27,103	7.0	29	60	1,247,970
6.59	254	5,820,432	25,495	4.7	25	55	1,114,505
6.17	239	5,602,646	24,277	4.0	23	52	1,054,051
5.42	230	5,029,286	23,068	3.6	21	48	997,473
5.09	219	4,663,184	22,155	3.2	19	42	967,149

4.88	202	4,345,222	21,258	3.0	18	40	929,109
4.70	191	4,102,740	20,560	2.5	17	38	846,682
4.43	180	3,843,664	19,837	2.3	16	36	754,320
3.80	162	3,243,073	18,578	2.1	14	34	696,412
3.21	153	2,447,759	15,638	1.2	10	31	606,982

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		
\$623	17%	\$593	\$1,151	\$821	\$4.48		
938	24	720	1,389	1,240	6.13		
1,055	27	790	1,523	1,391	6.55		
1,187	29	833	1,611	1,599	7.28		
1,266	30	886	1,665	1,717	8.00		

1,343	32	927	1,784	1,769	8.18		
1,379	34	971	1,823	1,864	8.28		
1,422	36	1,007	1,896	1,932	8.51		
1,532	38	1,052	2,005	2,013	8.91		
1,908	40	1,344	2,183	2,201	10.34		

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			
\$5,135	\$10.29	\$15.70	\$395,626	\$1,685	\$176,178	\$260,998	
4,977	12.59	17.95	234,334	1,147	81,267	166,236	
4,654	14.27	19.29	210,396	909	58,981	110,196	
4,502	15.13	19.69	160,334	688	45,943	96,181	
4,302	15.73	20.26	116,567	561	24,543	59,925	

4,069	16.36	20.71	98,847	455	17,437	25,814	
3,969	16.93	21.48	69,667	358	4,006	13,372	
3,825	17.60	22.33	40,423	200	-13,082	-2,327	
3,518	18.16	23.78	10,482	64	-30,256	-80,452	
2,916	20.41	25.96	-43,569	-278	-119,823	-267,334	

Table 64.

FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
91 Freestall Barn Dairy Farms with 300 or More Cows, New York, 2008

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
40.30	2,019	51,009,186	28,787	6.8	26	56	1,443,325
28.93	1,245	32,113,692	26,903	4.9	24	51	1,244,520
23.56	1,052	27,010,448	26,129	4.3	22	48	1,191,250
20.82	915	22,767,153	25,703	4.0	21	46	1,145,727
17.27	752	19,505,571	25,335	3.8	20	44	1,109,855

15.69	657	15,987,491	24,684	3.6	20	43	1,058,967
13.68	569	13,699,103	24,059	3.3	19	42	1,024,107
11.86	466	11,295,704	23,305	3.1	18	41	970,167
10.26	418	9,740,588	22,319	2.9	18	37	894,884
7.55	349	8,070,836	20,610	2.2	15	32	800,062

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		
\$1,067	23%	\$574	\$1,235	\$1,375	\$5.66		
1,193	26	671	1,385	1,491	6.25		
1,314	28	710	1,491	1,592	6.69		
1,355	29	739	1,552	1,669	6.95		
1,420	30	767	1,602	1,729	7.16		

1,507	31	807	1,646	1,841	7.37		
1,559	32	858	1,695	1,897	7.63		
1,625	33	912	1,753	1,973	7.85		
1,698	35	974	1,861	2,097	8.17		
1,840	37	1,088	2,082	2,265	8.86		

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			
\$5,629	\$12.22	\$15.78	\$1,887,971	\$1,405	\$692,856	\$1,135,029	
5,196	13.45	16.82	1,039,969	1,102	329,736	558,075	
5,063	14.04	17.51	783,841	978	250,878	429,314	
4,950	14.41	17.97	551,204	852	167,602	352,923	
4,834	15.03	18.22	444,975	749	134,288	291,503	

4,728	15.59	18.55	360,114	627	108,639	186,631	
4,606	16.15	19.20	291,916	493	67,941	109,671	
4,455	16.72	19.72	214,414	385	31,966	221	
4,301	17.26	20.26	156,958	240	-31,395	-76,560	
4,050	18.19	21.49	-78,095	-69	-187,505	-483,862	

Table 65.

INTENSIVE GRAZING FARMS VS. NON-GRAZING FARMS
New York State Dairy Farms, 2008

Item	All Intensive Grazing Farms ³	Non-Grazing Farms ⁴
Number of farms	31	104
<u>Business Size & Production</u>		
Number of cows	127	128
Number of heifers	97	105
Milk sold, pounds	2,111,138	2,707,218
Milk sold per cow, pounds	16,593	21,134
Milk plant test, % butterfat ⁵	3.9%	3.8%
Cull rate	22%	32%
Tillable acres, total	317	349
Hay crop, tons DM per acre	2.3	2.7
Corn silage, tons per acre	16.9	18.3
Forage dry matter per cow, tons ⁶	5.4	9.0
<u>Labor & Capital Efficiency</u>		
Worker equivalent	2.91	3.88
Milk sold per worker, pounds	726,309	697,287
Cows per worker	44	33
Farm capital per worker	\$360,429	\$331,372
Farm capital per cow	\$8,244	\$10,037
Farm capital per cwt. milk	\$50	\$47
Machinery and equipment per cow	\$1,504	\$1,875
<u>Milk Production Costs & Returns</u>		
Selected costs per cwt.:		
Hired labor	\$1.84	\$2.05
Grain & concentrate	\$5.99	\$5.98
Purchased roughage	\$0.78	\$0.42
Replacements purchased	\$0.05	\$0.10
Vet & medicine	\$0.53	\$0.59
Milk marketing	\$1.09	\$0.98
Other dairy expenses	\$1.06	\$1.70
Operating cost of producing milk per cwt.	\$14.84	\$15.74
Total labor cost per cwt.	\$4.28	\$4.19
Owner and operator resources per cwt.	\$4.03	\$3.69
Total cost of producing milk per cwt.	\$20.97	\$21.03
Average farm price per cwt.	\$19.99	\$19.28
<u>Related Cost Factors</u>		
Hired labor/cow	\$306	\$434
Total labor/cow	\$711	\$886
Purchased dairy feed/cow	\$1,123	\$1,355
Purchased grain & concentrate as % of milk receipts	31%	32%
Veterinary & medicine/cow	\$88	\$124
Machinery costs/cow	\$739	\$844
Feed & crop expenses/cwt.	\$8.14	\$7.71
<u>Profitability Analysis</u>		
Net farm income (with appreciation)	\$72,137	\$68,748
Net farm income (without appreciation)	\$72,236	\$59,064
Net farm income per cow (without appreciation)	\$568	\$461
Net farm income per cwt. (without appreciation)	\$3.42	\$2.18
Labor & management income per operator	\$19,786	\$3,147
Labor & management income per operator per cow	\$156	\$25
Rates of return on:		
Equity capital with appreciation	2.2%	1.1%
All capital with appreciation	2.9%	2.0%

⁶⁵Farms 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.

⁶⁶Farms with similar herd size as the 31 rotational grazing farms.

⁶⁷Average of farms reporting this data.

⁶⁸Average of farms that grow forages.

Table 66.

COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 52 New York Dairy Farms, 1999 - 2008

Selected Factors	1999	2000	2001	2002
Milk receipts per cwt. milk	\$15.17	\$13.46	\$15.94	\$13.00
<u>Size of Business</u>				
Average number of cows	310	328	350	370
Average number of heifers	235	244	265	287
Milk sold, cwt.	69,130	73,798	78,784	85,852
Worker equivalent	7.58	7.78	8.28	8.66
Total tillable acres	675	697	728	763
<u>Rates of Production</u>				
Milk sold per cow, lbs.	22,329	22,517	22,495	23,185
Hay DM per acre, tons	3.3	3.7	3.1	3.5
Corn silage per acre, tons	17	16	17	16
<u>Labor Efficiency</u>				
Cows per worker	41	42	42	43
Milk sold per worker, lbs.	912,007	948,565	951,498	991,359
<u>Cost Control</u>				
Grain & concentrate purchased as % of milk sales	24%	27%	24%	29%
Dairy feed & crop expense per cwt. milk	\$4.64	\$4.47	\$4.83	\$4.71
Operating cost of producing cwt. milk	\$11.09	\$11.22	\$12.13	\$11.03
Total cost of producing cwt. milk	\$14.09	\$14.20	\$15.22	\$14.04
Hired labor cost per cwt.	\$2.34	\$2.40	\$2.58	\$2.65
Interest paid per cwt.	\$0.73	\$0.85	\$0.74	\$0.57
Labor & machinery costs per cow	\$1,193	\$1,220	\$1,295	\$1,297
Replacement livestock expense	\$14,995	\$19,643	\$14,273	\$10,387
Expansion livestock expense	\$21,497	\$27,627	\$33,532	\$15,492
<u>Capital Efficiency</u>				
Farm capital per cow	\$6,540	\$6,623	\$6,693	\$6,795
Machinery & equipment per cow	\$1,265	\$1,310	\$1,315	\$1,326
Real estate per cow	\$2,504	\$2,464	\$2,465	\$2,490
Livestock investment per cow	\$1,530	\$1,582	\$1,690	\$1,787
Asset turnover ratio	0.61	0.56	0.65	0.55
<u>Profitability</u>				
Net farm income without appreciation	\$199,324	\$75,607	\$195,161	\$48,425
Net farm income with appreciation	\$240,013	\$123,792	\$303,145	\$98,533
Labor & management income per operator/manager	\$83,500	\$3,705	\$70,497	\$-16,956
Rate return on:				
Equity capital with appreciation	14.3%	4.5%	16.5%	2.2%
All capital with appreciation	11.2%	5.6%	12.6%	3.2%
All capital without appreciation	9.2%	3.4%	8.0%	1.2%
<u>Financial Summary, End Year</u>				
Farm net worth	\$1,304,501	\$1,325,663	\$1,527,260	\$1,512,518
Change in net worth with appreciation	\$127,953	\$23,307	\$198,470	\$-18,088
Debt to asset ratio	0.38	0.40	0.38	0.41
Farm debt per cow	\$2,576	\$2,585	\$2,607	\$2,720

Table 66. (continued)

COMPARISON OF FARM BUSINESS SUMMARY DATA
Same 52 New York Dairy Farms, 1999 - 2008

2003	2004	2005	2006	2007	2008
\$13.30	\$16.65	\$16.09	\$13.94	\$20.52	\$19.37
394	404	415	431	436	442
305	316	338	354	358	376
90,629	91,908	98,421	100,912	102,700	107,747
9.27	9.60	9.78	9.82	10.09	10.45
790	839	865	895	898	940
22,984	22,734	23,707	23,430	23,576	24,367
3.2	3.4	3.4	3.2	3.1	3.8
18	19	19	19	19	20
43	42	42	44	43	42
977,654	957,372	1,006,347	1,027,613	1,017,839	1,031,074
31%	27%	26%	29%	25%	31%
\$5.00	\$5.50	\$5.17	\$5.04	\$6.18	\$7.46
\$11.49	\$12.42	\$12.13	\$12.28	\$14.08	\$15.67
\$14.25	\$15.31	\$15.19	\$15.28	\$17.35	\$19.04
\$2.67	\$2.79	\$2.68	\$2.75	\$2.90	\$3.02
\$0.50	\$0.53	\$0.58	\$0.77	\$0.77	\$0.54
\$1,252	\$1,327	\$1,385	\$1,403	\$1,533	\$1,688
\$16,908	\$14,690	\$15,180	\$10,025	\$13,334	\$15,663
\$15,846	\$19,361	\$14,368	\$33,089	\$6,351	\$13,560
\$6,627	\$6,944	\$7,385	\$7,607	\$8,265	\$9,086
\$1,266	\$1,308	\$1,381	\$1,399	\$1,521	\$1,692
\$2,464	\$2,555	\$2,652	\$2,771	\$2,936	\$3,245
\$1,772	\$1,858	\$1,987	\$2,086	\$2,255	\$2,358
0.56	0.66	0.63	0.54	0.70	0.61
\$55,116	\$275,380	\$258,233	\$42,327	\$523,076	\$254,388
\$113,736	\$381,088	\$381,969	\$126,887	\$698,484	\$323,888
\$-16,641	\$120,682	\$97,277	\$-40,281	\$245,622	\$66,401
3.2%	18.6%	15.9%	2.5%	26.2%	8.9%
3.6%	12.9%	12.0%	4.0%	19.4%	7.5%
1.5%	9.2%	8.0%	1.4%	14.5%	5.7%
\$1,556,0514	\$1,828,276	\$2,087,319	\$2,086,926	\$2,633,327	\$2,823,518
\$39,407	\$279,865	\$266,149	\$2,914	\$530,566	\$167,553
0.42	0.38	0.35	0.38	0.32	0.32
\$2,865	\$2,692	\$2,653	\$2,883	\$2,833	\$2,904

Table 67.

**FARM RECEIPTS AND EXPENSES PER COW AND PER
HUNDREDWEIGHT FOR THREE LEVELS OF MILK PRODUCTION
224 New York Dairy Farms, 2008**

Item	41 Dairy Farms Milk/Cow <18,000#		67 Dairy Farms Milk/Cow 18,000-21,999#		116 Dairy Farms Milk/Cow ≥22,000#	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<u>ACCRUAL RECEIPTS</u>						
Milk sales	\$3,005	\$20.40	\$4,003	\$19.41	\$4,856	\$19.17
Dairy cattle	183	1.24	245	1.19	319	1.26
Dairy calves	1	0.00	21	0.10	28	0.11
Other livestock	38	0.26	16	0.08	8	0.03
Crops	128	0.87	247	1.20	192	0.76
Government receipts	58	0.39	35	0.17	42	0.17
All other	<u>76</u>	<u>0.52</u>	<u>59</u>	<u>0.29</u>	<u>85</u>	<u>0.33</u>
TOTAL ACCRUAL RECEIPTS	\$3,489	\$23.68	\$4,627	\$22.44	\$5,531	\$21.83
<u>ACCRUAL EXPENSES</u>						
<u>Labor:</u> Hired	\$ 314	\$ 2.13	\$ 477	\$ 2.31	\$ 730	\$ 2.88
<u>Feed:</u> Dairy grain & concentrate	919	6.24	1,262	6.12	1,464	5.78
Dairy roughage	104	0.71	66	0.32	82	0.32
Nondairy	2	0.01	0	0.00	0	0.00
Professional nutritional services	1	0.01	0	0.00	2	0.01
<u>Machinery:</u> Mach. hire, rent & lease	110	0.75	103	0.50	84	0.33
Machinery repairs & vehicle expense	173	1.18	214	1.04	211	0.83
Fuel, oil & grease	160	1.09	228	1.11	220	0.87
<u>Livestock:</u> Replacement livestock	27	0.18	9	0.04	25	0.10
Breeding	29	0.19	58	0.28	67	0.26
Vet & medicine	79	0.54	155	0.75	170	0.67
Milk marketing	164	1.11	185	0.90	211	0.83
Bedding	32	0.22	64	0.31	89	0.35
Milking supplies	55	0.38	91	0.44	99	0.39
Cattle lease & rent	1	0.01	1	0.01	3	0.01
Custom boarding	23	0.15	33	0.16	107	0.42
bST expense	6	0.04	9	0.04	68	0.27
Livestock professional fees	10	0.07	12	0.06	12	0.05
Other livestock expense	32	0.22	31	0.15	21	0.08
<u>Crops:</u> Fertilizer & lime	129	0.87	135	0.65	109	0.43
Seeds & plants	42	0.29	77	0.37	82	0.32
Spray & other crop expense	28	0.19	60	0.29	50	0.20
Crop professional fees	1	0.01	5	0.03	13	0.05
<u>Real Estate:</u> Land, building & fence repair	54	0.37	54	0.26	89	0.35
Taxes	74	0.50	65	0.32	47	0.19
Rent & lease	31	0.21	63	0.31	65	0.26
<u>Other:</u> Insurance	48	0.32	49	0.24	42	0.17
Utilities (farm share)	86	0.58	108	0.53	103	0.41
Interest paid	120	0.82	118	0.57	134	0.53
Other professional fees	12	0.08	15	0.07	26	0.10
Miscellaneous	<u>29</u>	<u>0.20</u>	<u>27</u>	<u>0.13</u>	<u>31</u>	<u>0.12</u>
TOTAL OPERATING EXPENSES	\$2,896	\$19.66	\$3,778	\$18.32	\$4,457	\$17.59
Expansion livestock	23	0.16	9	0.04	48	0.19
Extraordinary expense	0	0.00	4	0.02	1	0.00
Machinery depreciation	185	1.26	188	0.91	207	0.82
Building depreciation	<u>92</u>	<u>0.62</u>	<u>101</u>	<u>0.49</u>	<u>139</u>	<u>0.55</u>
TOTAL ACCRUAL EXPENSES	\$3,196	\$21.70	\$4,081	\$19.79	\$4,853	\$19.15

Table 68.

**FARM RECEIPTS AND EXPENSES PER COW AND PER
HUNDREDWEIGHT FOR THREE HERD SIZE CATEGORIES
224 New York Dairy Farms, 2008**

Item	50 Dairy Farms with <80 Cows		55 Dairy Farms with 80-180 Cows		119 Dairy Farms with ≥ 180 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<u>ACCRUAL RECEIPTS</u>						
Milk sales	\$3,641	\$19.45	\$3,815	\$9.58	\$4,733	\$19.21
Dairy cattle	248	1.32	127	0.65	317	1.29
Dairy calves	16	0.09	15	0.07	27	0.11
Other livestock	31	0.16	7	0.04	11	0.04
Crops	59	0.32	186	0.96	201	0.82
Government receipts	59	0.32	55	0.28	41	0.17
All other	<u>84</u>	<u>0.45</u>	<u>71</u>	<u>0.36</u>	<u>81</u>	<u>0.33</u>
TOTAL ACCRUAL RECEIPTS	\$4,139	\$22.11	\$4,276	\$21.94	\$5,410	\$21.96
<u>ACCRUAL EXPENSES</u>						
Labor: Hired	\$ 185	\$ 0.99	\$ 358	\$ 1.84	\$ 712	\$ 2.89
Feed: Dairy grain & concentrate	1,107	5.91	1,243	6.38	1,429	5.80
Dairy roughage	115	0.62	86	0.44	79	0.32
Nondairy	2	0.01	1	0.01	0	0.00
Professional nutritional services	0	0.00	1	0.00	2	0.01
Machinery: Mach. hire, rent & lease	66	0.35	89	0.46	89	0.36
Mach. repairs & vehicle expense	247	1.32	238	1.22	206	0.84
Fuel, oil & grease	194	1.03	227	1.17	218	0.89
Livestock: Replacement livestock	16	0.08	27	0.14	23	0.09
Breeding	54	0.29	48	0.25	65	0.26
Vet & medicine	102	0.55	113	0.58	169	0.69
Milk marketing	221	1.18	220	1.13	203	0.82
Bedding	35	0.19	49	0.25	86	0.35
Milking supplies	79	0.42	83	0.42	97	0.39
Cattle lease & rent	0	0.00	3	0.01	3	0.01
Custom boarding	19	0.10	44	0.23	98	0.40
bST expense	10	0.05	18	0.09	61	0.25
Livestock professional fees	15	0.08	11	0.06	12	0.05
Other livestock expense	59	0.32	45	0.23	21	0.08
Crops: Fertilizer & lime	107	0.57	114	0.58	113	0.46
Seeds & plants	45	0.24	59	0.31	82	0.33
Spray & other crop expense	32	0.17	52	0.27	51	0.21
Crop professional fees	1	0.01	4	0.02	12	0.05
Real Estate: Land, building & fence repair	57	0.31	64	0.33	84	0.34
Taxes	99	0.53	80	0.41	47	0.19
Rent & lease	38	0.20	44	0.22	66	0.27
Other: Insurance	64	0.34	58	0.30	42	0.17
Utilities (farm share)	130	0.69	112	0.57	101	0.41
Interest paid	138	0.74	125	0.64	132	0.53
Other professional fees	16	0.09	12	0.06	24	0.10
Miscellaneous	<u>23</u>	<u>0.12</u>	<u>28</u>	<u>0.14</u>	<u>31</u>	<u>0.13</u>
TOTAL OPERATING EXPENSES	\$3,279	\$17.51	\$3,654	\$18.75	\$4,358	\$17.69
Expansion livestock	16	0.08	2	0.01	45	0.18
Extraordinary expense	4	0.02	0	0.00	1	0.01
Machinery depreciation	205	1.09	226	1.16	202	0.82
Building depreciation	<u>87</u>	<u>0.47</u>	<u>89</u>	<u>0.46</u>	<u>136</u>	<u>0.55</u>
TOTAL ACCRUAL EXPENSES	\$3,591	\$19.18	\$3,971	\$20.38	\$4,743	\$19.25

Table 69.

COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
224 New York Dairy Farms, 2008

Item	West. & Cent. Plateau Region	Western & Central Plain Region	Northern New York	Central Valleys	North. Hudson & Southeastern NY
Number of farms	38	55	34	28	69
<u>ACCRUAL EXPENSES</u>					
Hired labor	\$166,226	\$526,783	\$249,418	\$307,393	\$146,637
Feed	436,645	1,050,321	593,541	675,379	356,660
Machinery	141,783	338,371	234,792	256,169	129,972
Livestock	211,488	572,513	325,707	405,329	204,359
Crops	56,394	171,001	101,232	157,385	63,868
Real estate	57,131	136,493	75,382	110,040	43,716
Other	80,747	240,096	144,620	158,411	74,981
Total Operating Expenses	<u>\$1,150,415</u>	<u>\$3,035,579</u>	<u>\$1,724,692</u>	<u>\$2,070,105</u>	<u>\$1,020,193</u>
Expansion livestock	920	11,795	49,036	33,939	6,917
Extraordinary expense	415	53	339	2,039	771
Machinery depreciation	62,903	141,993	87,356	107,918	39,849
Building depreciation	32,070	94,437	71,194	68,978	18,040
Total Accrual Expenses	<u>\$1,246,723</u>	<u>\$3,283,856</u>	<u>\$1,932,617</u>	<u>\$2,282,979</u>	<u>\$1,085,771</u>
<u>ACCRUAL RECEIPTS</u>					
Milk sales	\$1,327,066	\$3,210,717	\$1,915,177	\$2,348,806	\$1,051,771
Livestock	98,188	205,605	159,471	198,680	78,609
Crops	35,831	155,691	60,703	101,907	50,854
Government Receipts	11,515	30,971	11,198	17,775	12,728
All other	16,547	68,216	30,898	37,766	14,672
Total Accrual Receipts	<u>\$1,489,146</u>	<u>\$3,671,200</u>	<u>\$2,177,447</u>	<u>\$2,704,734</u>	<u>\$1,208,634</u>
<u>PROFITABILITY ANALYSIS</u>					
Net farm income(w/o appreciation)	\$242,423	\$387,344	\$244,829	\$421,955	\$122,863
Net farm income (w/ appreciation)	\$257,555	\$511,234	\$318,618	\$369,941	\$120,937
Labor & management income	\$134,502	\$192,500	\$122,616	\$255,837	\$32,309
Number of operators	1.63	1.90	1.80	2.03	1.47
Labor & mgmt. income/operator	\$82,516	\$101,316	\$68,120	\$126,028	\$21,979
<u>BUSINESS FACTORS</u>					
Worker equivalent	6.84	15.17	9.87	11.06	6.43
Number of cows	288	691	416	499	227
Number of heifers	247	572	347	415	199
Acres of hay crops ⁶⁹	332	556	523	475	290
Acres of corn silage ⁶⁹	187	465	318	366	186
Total tillable acres	610	1,339	984	1,071	545
Pounds of milk sold	6,963,142	16,826,769	10,096,042	12,075,720	5,303,451
Pounds of milk sold/cow	24,156	24,352	24,249	24,182	23,330
Tons hay crop dry matter/acre	3.1	4.3	3.4	3.1	2.8
Tons corn silage/acre	21.3	20.8	18.0	20.1	18.7
Cows/worker	42	46	42	45	35
Pounds of milk sold/worker	1,018,003	1,109,092	1,022,557	1,091,508	824,691
% grain & conc. of milk receipts	32%	30%	30%	26%	33%
Feed & crop expense/cwt. milk	\$7.08	\$7.25	\$6.88	\$6.87	\$7.93
Fertilizer & lime/crop acre ⁶⁹	\$43.59	\$60.06	\$42.74	\$52.72	\$46.00
Machinery cost/tillable acre ⁶⁹	\$371	\$397	\$360	\$373	\$347

⁶⁹Excludes farms that do not harvest forages.

Figure 2.

**Percent Change in Milk Production, Five Regions in New York,
1998-2008**

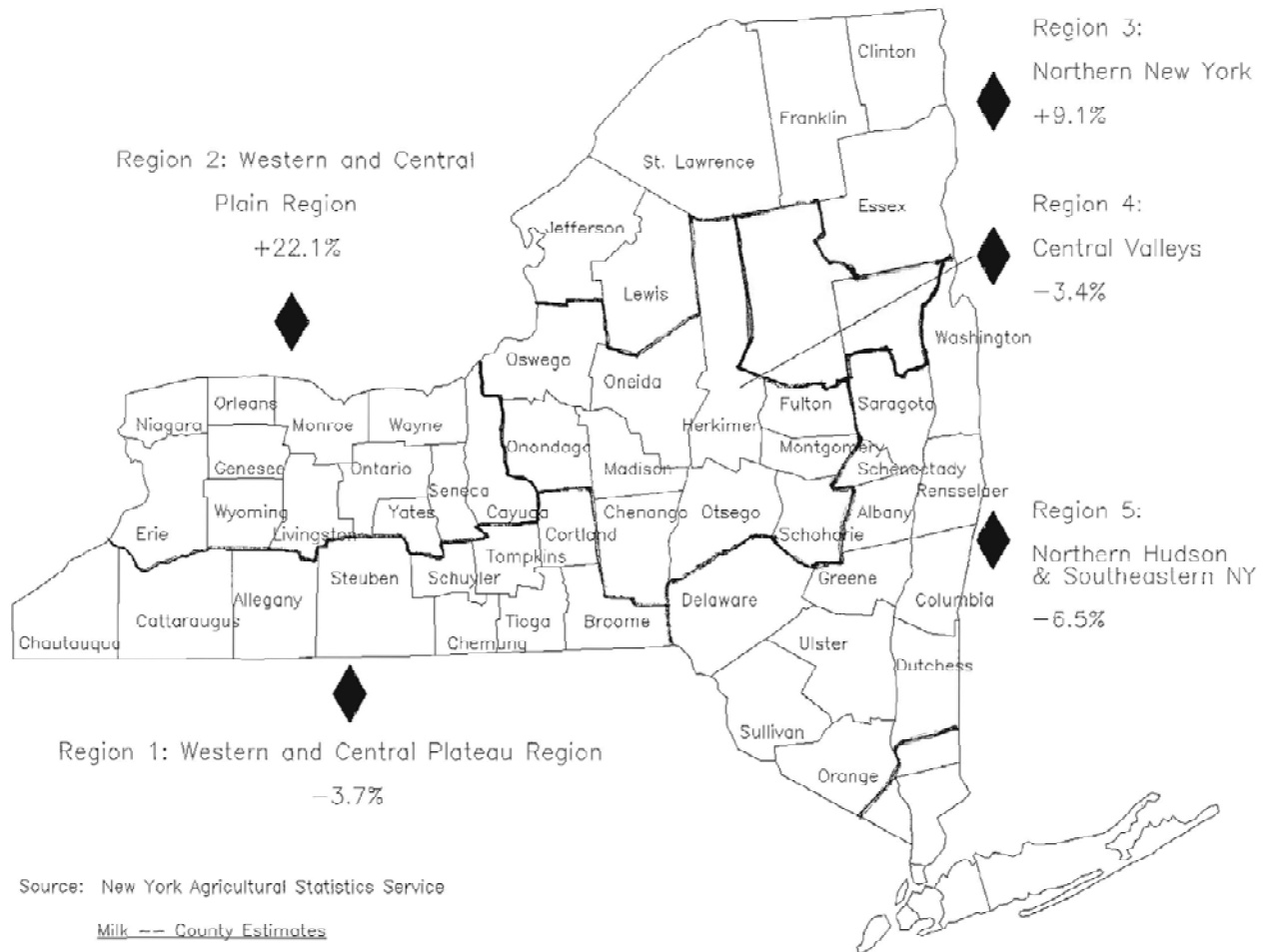


Table 70.

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

Item	Region ⁷⁰				
	1	2	3	4	5
<u>Milk Production</u> ⁷¹	(million pounds)				
1998	2,078.7	3,343.6	2,255.4	2,643.3	1,429.0
2008	2,001.5	4,081.0	2,460.5	2,552.5	1,336.5
Percent change	-3.7%	+22.1%	+9.1%	-3.4%	-6.5%
<u>2008 Cost of Producing Milk</u> ⁷²	(\$ per hundredweight milk)				
Operating cost	\$14.21	\$15.37	\$14.97	\$14.47	\$16.41
Total cost	18.20	18.54	18.64	18.14	20.23
Average price received	19.06	19.08	18.97	19.45	19.83
Return per cwt. to operator labor, management & capital	\$3.40	\$2.29	\$2.41	\$3.46	\$2.19

⁷⁰See Figure 2 for region descriptions.

⁷¹Source: New York Agricultural Statistics Service, Milk-County Estimates.

⁷²From Dairy Farm Business Summary data.

Table 71.

SELECTED BUSINESS FACTORS BY MILKING FREQUENCY
New York State Dairy Farms, 2007 & 2008

Item	2x/Day Milking		3x/Day Milking	
	2007	2008	2007	2008
Number of farms	167	136	73	74
<u>Business Size & Production</u>				
Number of cows	188	188	720	812
Number of heifers	153	159	576	680
Milk sold, lbs.	3,813,897	3,940,395	17,717,548	20,736,050
Milk sold/cow, lbs.	20,312	20,992	24,618	25,529
Milk plant test, % butterfat	3.68%	3.76%	3.56%	3.606%
Tillable acres, total	460	468	1,380	1,605
Hay crop, tons DM/acre	2.8	3.1	3.3	3.7
Corn silage, tons/acre	18.7	20.1	19.0	19.9
Forage DM/cow, tons	8.2	8.7	7.7	8.3
<u>Labor & Capital Efficiency</u>				
Worker equivalent	4.69	4.80	16.28	18.43
Milk sold/worker, lbs.	813,776	820,204	1,088,190	1,125,125
Cows/worker	40	39	44	44
Farm capital/worker	\$354,620	\$372,218	\$362,773	\$398,398
Farm capital/cow	\$8,857	\$9,538	\$8,206	\$9,039
Farm capital/cwt. milk	\$43.61	\$45.44	\$33.33	\$35.41
<u>Milk Production Costs & Returns</u>				
Selected costs/cwt.:				
Hired labor	\$2.35	\$2.55	\$2.87	\$2.87
Grain & concentrate	\$4.76	\$5.91	\$4.87	\$5.78
Purchased roughage	\$0.28	\$0.39	\$0.37	\$0.31
Replacements purchased	\$0.07	\$0.05	\$0.08	\$0.09
Veterinary & medicine	\$0.65	\$0.70	\$0.65	\$0.68
Milk marketing	\$0.84	\$0.96	\$0.78	\$0.81
Other dairy expenses	\$1.56	\$1.53	\$1.70	\$1.84
Operating cost of milk production/cwt.	\$13.69	\$15.33	\$14.16	\$15.12
Total labor costs/cwt.	\$3.80	\$4.01	\$3.23	\$3.19
Owner/operator resources/cwt.	\$2.93	\$3.11	\$1.61	\$1.73
Total cost of milk production/cwt.	\$18.21	\$20.06	\$17.08	\$18.24
Average farm price/cwt.	\$20.65	\$19.59	\$20.21	\$19.12
Return over total costs/cwt.	\$2.44	-\$0.47	\$3.13	\$0.88
<u>Related Cost Factors</u>				
Hired labor/cow	\$478	\$535	\$707	\$733
Total labor/cow	\$772	\$842	\$794	\$814
Purchased dairy feed/cow	\$1,023	\$1,321	\$1,289	\$1,554
Purchased grain & concentrate as % of milk receipts	24%	31%	24%	30%
Veterinary & medicine/cow	\$133	\$147	\$161	\$173
Machinery costs/cow	\$733	\$799	\$698	\$799
<u>Profitability Analysis</u>				
Net farm income (without appreciation)	\$211,430	\$109,986	\$841,626	\$542,979
Labor & management income/operator	\$101,233	\$26,410	\$345,423	\$149,881
Rates of return on:				
Equity capital with appreciation	19.4%	4.9%	27.6%	10.3%
All capital with appreciation	15.4%	4.9%	19.9%	8.4%

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, 1994-2008**

Year	Mixed Dairy Feed 16% Protein ⁸³ (\$/ton)	Fertilizer, Urea 45-46%N ⁸³ (\$/ton)	Seed Corn, Hybrid ⁸⁴ (\$/80,000 kernels)	Diesel Fuel ⁸³ (\$/gal)	Tractor 50-59 PTO ⁸⁴ (\$)	Wage Rate All Hired Farm Workers ⁸⁵ (\$/hr)
1994	181	233	73.40	0.853	19,800	6.96
1995	175	316	77.10	0.850	20,100	6.92
1996	226	328	77.70	1.020	20,600	7.19
1997	216	287	83.50	0.960	21,200	7.63
1998	199	221	86.90	0.810	21,800	7.63
1999	175	180	88.10	0.750	21,900	8.12
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	2.018	23,400	9.88
2006	207	403	118.00	2.349	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

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

⁸³Northeast region average. ⁸⁴United States average. ⁸⁵New 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, 1992-2008**

Year	Dairy Cows		Machinery ⁸⁶	Farm Real Estate ⁸⁷	
	Value/Head	1977=100	1977=100	Value/Acre	1977=100
1992	1,090	220	226	1,139	194
1993	1,100	222	235	1,237	211
1994	1,100	222	249	1,260	215
1995	1,010	204	258	1,280	218
1996	1,030	208	268	1,260	215
1997	980	198	276	1,250	213
1998	1,050	212	286	1,280	218
1999	1,250	253	294	1,340	228
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

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

⁸⁶United States average; 1995 - 2008 are estimated due to discontinuation of 1977=100 series.

⁸⁷New York average for 2000-2008 excludes Native American Reservation land.

Table A3.

NUMBER OF DAIRY FARMS AND MILK COWS BY SIZE OF HERD
New York State, 2008⁸⁸

Size of Herd (Number of Cows)	Farms		Milk Cows	
	(Number)	(Percent of Total)	(Number)	(Percent of Total)
1 - 29	1,150	21.0%	11,500	1.8%
30-49	1,050	19.0%	40,000	6.4%
50-99	1,850	33.6%	130,000	20.8%
100-199	860	15.6%	114,000	18.2%
200-499	368	6.7%	120,000	19.2%
500-749	109	2.0%	65,000	10.4%
750-999	43	0.8%	35,000	5.6%
1000-1499	42	0.8%	46,500	7.4%
1500 - 1999	13	0.23%	22,000	3.5%
2000 or more	15	0.27%	42,000	6.7%
Total	5,500	100.0%	626,000	100.0%

⁸⁸This 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 2008.
- CAFO (Concentrated Animal Feeding Operations) permit reports for 2008. 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.

⁸⁹The author wishes to thank everyone who provided some data as well as providing valuable advice and perspectives: Jacqueline Lendrum and B. F. Stanton. However, any errors, omissions or misstatements are solely the responsibility of the author, Professor George Conneman, e-mail GJC4@cornell.edu

In 2008, there were 5,500 dairy farms in New York State, and 626,000 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.

Ninety percent of the farms (less than 200 cows per farm) had 47 percent of the milk cows. The remaining ten 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 40 percent of all farms but kept only 8 percent of the cows.

Farms with 1,000 or more cows represent about 1.3 percent of the farms but kept nearly 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 23 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).

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

Tillable Acres: All acres that are normally cropped including 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)
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
2008-01	The New York State Agricultural Immigration and Human Resource Management Issues Study		Maloney, T. and N. Bills
2007-01	Dairy Farm Management Business Summary, New York State, 2006	(\$20.00)	Knoblauch, W., Putnam, L. and J. Karszes
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
2006-05	Measuring the impacts of generic fluid milk in dairy marketing		Kaiser, H. and D. Dong
2006-04	2007 Farm Bill: Policy Options and Consequences for Northeast Specialty Crops Industries, Small Farms, and Sustainability Programs		Bills, N., Gloy, B., Uva, W., White, G. and M. Cheng
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