

July 1988

A.E. Rec. 88-8

DAIRY FARM MANAGEMENT

BUSINESS SUMMARY NEW YORK 1987

Stuart F. Smith
Wayne A. Knoblauch
Linda D. Putnam

Department of Agricultural Economics
Cornell University Agricultural Experiment Station
New York State College of Agriculture and Life Sciences
A Statutory College of the State University
Cornell University, Ithaca, New York 14853-7801

ABSTRACT

This summary and analysis of 426 New York dairy farm businesses uses up to date methods of cash and accrual accounting to measure cash flow, farm profitability, and financial growth. Traditional methods of analyzing dairy farm businesses are combined with new evaluation techniques to show the relationship between good management performance and financial success. A comparison of data from 242 farms participating in 1985, 1986, and 1987 shows net farm income jumped 52 percent from 1985 to 1987, farm net worth increased 16 percent, average cow numbers were up 8 percent, milk output per cow increased 4 percent, and milk sold per worker equivalent increased 9 percent from 1985 to 1987.

TABLE OF CONTENTS

	<u>Page</u>
INTRODUCTION	1
Farms Included	1
Features	1
Acknowledgement	1
1987 Regional Summary Publications	2
GROWTH AND PROGRESS ON NEW YORK DAIRY FARMS	3
SUMMARY AND ANALYSIS OF THE FARM BUSINESS	5
Business Characteristics and Resources Used	5
Accounting Procedures	6
Income Statement	6
Profitability Analysis	9
Returns Per Unit of Input	11
Farm and Family Financial Status	12
Cash Flow Summary and Analysis	14
Repayment Analysis	16
Cropping Program Analysis	17
Dairy Program Analysis	20
Capital and Labor Efficiency Analysis	26
Miscellaneous Costs	28
Combination of Factors	29
Farm Business Chart	30
Financial Analysis and Management	32
Financial Analysis Chart	33
SUPPLEMENTAL INFORMATION	34
Introduction	34
Herd Size Comparisons	36
Same 242 New York Dairy Farms, 1985, 1986, and 1987	44
Comparisons by Type of Barn and Herd Size	45
Comparisons by Business Organization	50
Comparison by Milking System	52
Comparison of Dairy Farm Business Data by Region	53
Ten Year Comparison of Selected Factors and Costs of Producing Milk, 1978-1987	54
Other Comparisons	56
APPENDIX: THE ECONOMIC ENVIRONMENT FACING NEW YORK DAIRY FARMERS	61
NOTES	66

LIST OF FIGURES AND CHARTS

	<u>Page</u>
Figure 1. Location of the 426 New York Dairy Farms in the 1987 Dairy Farm Business Summary	2
Chart 1. Distribution of Labor and Management Incomes Per Operator, 426 New York Dairy Farms, 1987	10
Chart 2. Variation in Average Milk Prices, 426 New York Dairy Farms, 1987	24
Chart A1. Prices Received by New York Dairy Farmers, 1975-1987	63
Chart A2. Ratio of Prices Received for Milk and Prices Paid by New York Dairy Farmers, 1977-1987	64
Chart A3. Annual Changes in Dairy Cow, Farm Machinery, and Farm Real Estate Values, New York Dairy Farms, 1977-1987	65

LIST OF TABLES

<u>Table No.</u>		<u>Page</u>
1	Comparison of Farm Business Summaries for 1983-1987, Same 165 New York Dairy Farms	4
2	Business Characteristics and Resources Used, 426 New York Dairy Farms, 1987	5
3	Cash and Accrual Farm Expenses, 426 New York Dairy Farms, 1987 ..	7
4	Cash and Accrual Farm Receipts, 426 New York Dairy Farms, 1987 ..	8
5	Net Farm Income, 426 New York Dairy Farms, 1987	9
6	Return to Operator(s') Labor, Management, and Equity, 426 New York Dairy Farms, 1987	9
7	Labor and Management Income, 426 New York Dairy Farms, 1987	10
8	Return on Equity Capital, 426 New York Dairy Farms, 1987	11
9	Returns to All Labor and Management, 426 New York Dairy Farms, 1987	11
10	1987 Farm Business and Nonfarm Balance Sheet, 426 New York Dairy Farms, 1987	12
11	Balance Sheet Analysis, 426 New York Dairy Farms, 1987	13
12	Farm Inventory Balance, 426 New York Dairy Farms, 1987	13
13	Annual Cash Flow Statement, 426 New York Dairy Farms, 1987	14
14	Annual Cash Flow Budgeting Data, 426 New York Dairy Farms, 1987 .	15
15	Farm Debt Payments Planned, New York Dairy Farms, 1987	16
16	Cash Flow Coverage Ratio, New York Dairy Farms, 1987	16
17	Land Resources and Crop Production, 426 New York Dairy Farms, 1987	17
18	Crop Management Factors, 426 New York Dairy Farms, 1987	17
19	Crop Related Accrual Expenses, New York Dairy Farms, 1987	18
20	Accrual Machinery Expenses, 426 New York Dairy Farms, 1987	18
21	Crop Related Accrual Expenses by Hay Crop Production Per Acre, 274 New York Dairy Farms, 1987	19
22	Crop Related Accrual Expenses by Corn Production Per Acre, 271 New York Dairy Farms, 1987	19
23	Dairy Herd Inventory, 426 New York Dairy Farms, 1987	20
24	Cows Per Farm and Farm Income Measures, 426 New York Dairy Farms, 1987	20
25	Milk Production, 426 New York Dairy Farms, 1987	21
26	Milk Sold Per Cow and Farm Income Measures, 426 New York Dairy Farms, 1987	21
27	Accrual Receipts from Dairy and Cost of Producing Milk, 426 New York Dairy Farms, 1987	21
28	Farm Cost of Producing Milk by Herd Size and Milk Sold Per Cow, 426 New York Dairy Farms, 1987	22
29	Total Cost of Producing Milk Based on Whole Farm Data, 426 New York Dairy Farms and Top 10 Percent of Farms, 1987	23
30	Dairy Related Accrual Expenses, 426 New York Dairy Farms, 1987 ..	24
31	Feed and Crop Expense per Hundredweight of Milk and Farm Income Measures, 426 New York Dairy Farms, 1987	25
32	Capital Efficiency, 426 New York Dairy Farms, 1987	26
33	Capital Turnover and Labor and Management Income, 426 New York Dairy Farms, 1987	26
34	Labor Efficiency, 426 New York Dairy Farms, 1987	26
35	Labor Force Inventory and Cost Analysis, 426 New York Dairy Farms, 1987	27
36	Milk Sold Per Worker and Net Farm Income, 426 New York Dairy Farms, 1987	27

<u>Table No.</u>		<u>Page</u>
37	Miscellaneous Cost Control Measures, 426 New York Dairy Farms, 1987	28
38	Combination of Factors Above Average and Net Farm Income, 426 New York Dairy Farms, 1987	29
39	Farm Business Chart for Farm Management Cooperators, 426 New York Dairy Farms, 1987	30
40	A Farm Finance Checklist, 426 New York Dairy Farms, 1987	32
41	Financial Analysis Chart, 426 New York Dairy Farms, 1987	33
42	Farm Business Summary by Herd Size, 426 New York Dairy Farms, 1987	36
43	Farm Family Financial Situation by Herd Size, 426 New York Dairy Farms, 1987	38
44	Selected Business Factors by Herd Size, 426 New York Dairy Farms, 1987	42
45	Comparison of Farm Business Summaries for 1985, 1986, and 1987 Same 242 New York Dairy Farms	44
46	Selected Business Factors by Type of Barn and Herd Size, 426 New York Dairy Farms, 1987	45
47	Farm Business Chart for Small Conventional Stall Dairy Farms, 117 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1987	46
48	Farm Business Chart for Large Conventional Stall Dairy Farms, 151 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1987	47
49	Farm Business Chart for Small Freestall Dairy Farms, 72 Freestall Barn Dairy Farms With 120 or Less Cows, New York, 1987	48
50	Farm Business Chart for Large Freestall Dairy Farms, 86 Freestall Barn Dairy Farms With More Than 120 Cows, New York, 1987	49
51	Farm Business Summaries for Single Proprietorships, Partnerships, and Corporations, 426 New York Dairy Farms, 1987	50
52	Farm Family Financial Situation for Single Proprietorships, Partnerships, and Corporations, 426 New York Dairy Farms, 1987	51
53	Selected Business Factors by Milking Systems, 423 New York Dairy Farms, 1987	52
54	Comparison of Regional Dairy Farm Business Summaries, 426 New York Dairy Farms, 1987	53
55	Ten Year Comparison: Selected Business Factors, New York Dairy Farms, 1978 to 1987	54
56	Ten Year Comparison: Average Cost of Producing Milk Per Hundredweight, New York Dairy Farms, 1978 to 1987	55
57	Farm Business Summary and Farm Family Financial Situation, 14 New York Dairy-Cash Crop Farms, 1987	56
58	Farm Business Summary and Farm Family Financial Situation, 50 New York Dairy-Renter Farms, 1987	57
59	Farm Business Summary and Farm Family Financial Situation, Top 10 Percent of the Farms by Net Farm Income (without appreciation), 42 New York Dairy Farms, 1987	58
60	Farm Business Summary and Farm Family Financial Situation, Average of 426 New York Dairy Farms, 1987	59
61	Farm Business Summary and Farm Family Financial Situation, Average Per Cow, 426 New York Dairy Farms, 1987	60
A1	Prices Received by New York Dairy Farmers, 1975-1987	63
A2	Prices Paid by New York Farmers for Selected Items, 1977-1987 ...	64
A3	Values of New York Dairy Farm Inventory Items, 1977-1987	65

INTRODUCTION

Dairy farm business summary (DFBS) projects are an integral part of Cornell Cooperative Extension's agriculture program in New York State. The Department of Agricultural Economics of the New York State College of Agriculture and Life Sciences, and County Extension staff, cooperate in sponsoring DFBS projects. In 1987, more than 500 dairy farmers participated. Business records submitted by dairy farmers from 47 counties in the State provide the basis for continued Extension educational programs, data for applied research studies, and for use in the classroom. Regardless of the use of the data, confidentiality of individual farm data is maintained.

Cooperative Extension agents and specialists enroll the cooperators and collect the records. Each cooperator receives a detailed summary and analysis of his or her business. More than 70 percent of the agents and specialists are using a micro computer in their offices and/or on the farm to process and return the individual farm business reports for immediate use. Regional reports are prepared by Cornell faculty and used by DFBS cooperators and other farmers to compare their farm with regional averages. The DFBS program helps farmers develop managerial skills and solve business management problems.

Records from the nine regions of the State have been combined and the total data set analyzed as an applied research study of the effects of changes in price, technology, and management on dairy farm incomes (Figure 1, page 2). This research provides current farm business information for use by dairy farmers, Cooperative Extension staff, teachers, and others concerned with the New York dairy industry.

Farms Included

Data from 426 specialized dairy farms are included in the main body of this report. These farms do NOT represent the "average" for all dairy farms in the State. Participation was on a voluntary basis, therefore, not all areas or types of operations were equally represented (Figure 1, page 2). The 426 specialized dairy farms represent a cross section of better than average commercial dairy farm owner-operators in the State. Dairy farm renters, dairy-cash crop farmers with crop sales exceeding 10 percent of milk sales, and part-time dairy operators have been excluded from the main body of this report and summarized separately in the supplemental information section of the publication.

Features

Accrual accounting 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 6. Four measures of farm profits are calculated on pages 9 through 11. The balance sheet and cash flow statement are featured on pages 12 through 16.

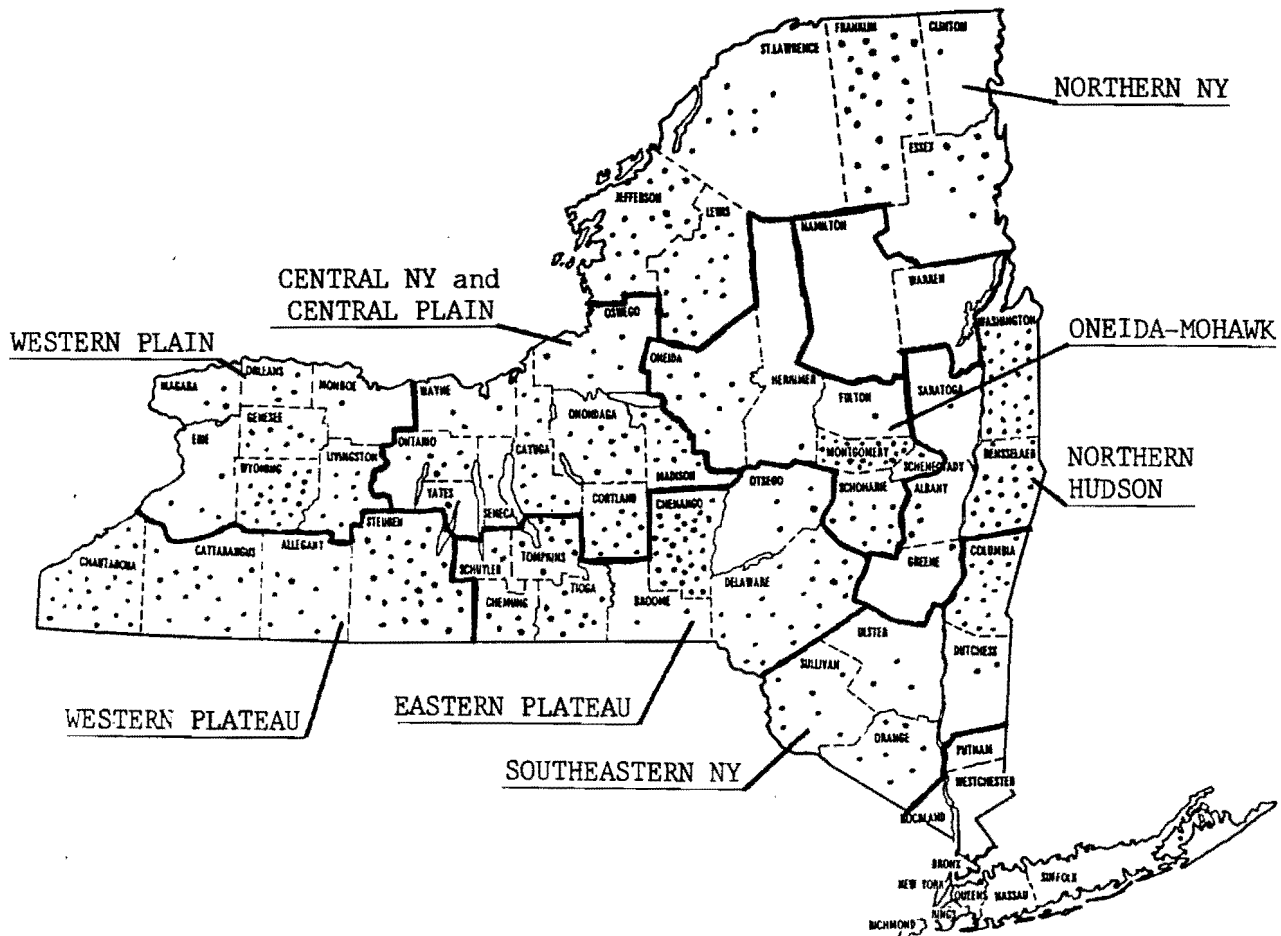
The dairy program analysis includes data on the costs of producing milk (pages 20-24) and separate farm business charts using data from freestall farms versus conventional stall dairy farms (pages 45-49).

Acknowledgements

The authors appreciate the outstanding assistance provided by the following staff members: Gregory Bogardo - programming, Joe Baldwin - artwork, Cindy Farrell - wordprocessing, and Beverly Carcelli - proofreading and distribution.

Figure 1.

LOCATION OF THE 426 NEW YORK DAIRY FARMS
IN THE 1987 DAIRY FARM BUSINESS SUMMARY



1987 Regional Summary Publications

<u>Region</u>	<u>Publications</u>	<u>Author(s)</u>
Western Plain Region	A.E. Ext. 88-4	Stuart F. Smith
Oneida-Mohawk Region	A.E. Ext. 88-5	Eddy L. LaDue
Western Plateau Region	A.E. Ext. 88-7	George L. Casler
Northern Hudson Region	A.E. Ext. 88-8	Stuart F. Smith
Northern New York	A.E. Ext. 88-9	Stuart F. Smith & Linda D. Putnam
Eastern Plateau Region	A.E. Ext. 88-11	Robert A. Milligan & Linda D. Putnam
Central New York & Central Plain	A.E. Ext. 88-12	Wayne A. Knoblauch, Robert A. Milligan & Linda D. Putnam
Southeastern New York	A.E. Ext. 88-13	Stuart F. Smith

GROWTH AND PROGRESS ON NEW YORK DAIRY FARMS

One hundred and sixty-five farmers have participated in the dairy farm business summary for each of the years 1983 through 1987. Over this five year period, average herd size increased by 15 cows, or about 15 percent. Milk sold per farm increased by over 330,000 pounds or 22 percent. Milk per cow increased by six percent over this period and thus when combined with the increased herd size accounted for the increase in total milk output.

Cow numbers, milk sold per cow, and milk sold per farm grew at an increasing rate during the period. From 1983 to 1985 average cow numbers were up six percent, milk output per cow increased two percent, and milk sold per farm rose nine percent. From 1985 to 1987 cow numbers increased nine percent, milk per cow increased 3.4 percent, and milk output per farm jumped 12 percent.

Hay yields have been constant over the last five years on these farms. Corn silage yields, however, have shown a steady upward trend. Corn silage yields averaged 16.5 tons in 1987, up 21 percent from 1983 and 16 percent above the previous four year average.

These farms have shown steady improvement in labor efficiency since 1984. Milk output per worker increased 13 percent over the last three years following a slight decline in 1984. 1984 was the transition year between relatively high and stable milk prices of the early 1980's and falling milk prices and uncertainty that characterized the mid-1980's.

Purchased feed and crop expenses per hundredweight of milk have fluctuated due to input costs and purchased feed prices from a low of \$4.07 in 1985 to a high of \$4.62 in 1983.

The average operating costs of producing milk declined 10 percent and total costs per hundredweight dropped nine percent on these farms from 1983 to 1987. The average price received per hundredweight of milk sold fell from \$13.64 to \$12.93 or five percent over the same time period. The margin or difference between the total costs of producing milk and the average price received improved from \$-0.92 per hundredweight in 1983 to \$-0.38 per hundredweight in 1987.

Capital investments per cow have increased by almost 10 percent between 1983 and 1985 and flattened out in the last two years. Machinery and equipment investments per cow have edged slightly lower and real estate investments per cow have increased in 1987 following a decrease from 1984 to 1986. Capital turnover at 2.17 years in 1987 was at its lowest and healthiest point during this five year period.

Average profitability on these farms was the highest in 1987. Profitability was stable from 1983 to 1986, but increased significantly in 1987. Net farm income was about 60 percent higher in 1987 than the average of the previous four years.

Over this period net worth has exhibited a steady increase from \$323,857 in 1983 to \$448,028 in 1987. The debt to asset ratio has improved from 0.40 in 1983 to 0.34 in 1987. Farm debt per cow was also down in 1987. Debt per cow was \$2,156 in 1983 and \$2,012 in 1987.

In 1987, these 165 farms were larger, producing more milk, more profitable, and financially stronger than in any of the past four years. See the Appendix beginning on page 61 for a description of the economic environment facing New York dairy farmers.

Table 1. COMPARISON OF FARM BUSINESS SUMMARIES FOR 1983-1987
Same 165 New York Dairy Farms

Selected Factors	1983	1984	1985	1986	1987
<u>Size of Business</u>					
Average no. of cows	96	97	102	107	111
Average no. of heifers	81	85	86	87	88
Milk sold, lbs.	1,498,713	1,537,052	1,635,584	1,741,059	1,833,455
Worker equivalent	3.12	3.22	3.34	3.32	3.39
Total tillable acres	294	302	314	317	322
<u>Rates of Production</u>					
Milk sold per cow, lbs.	15,654	15,830	15,987	16,283	16,535
Hay DM per acre, tons	2.7	2.8	2.8	2.8	2.8
Corn silage per acre, tons	13.6	13.9	14.8	14.4	16.5
<u>Labor Efficiency</u>					
Cows per worker	31	30	31	32	33
Milk sold per worker, lbs.	480,481	477,091	490,378	523,826	540,778
<u>Cost Control</u>					
Grain & concentrate purchased as % milk sales	24%	23%	21%	23%	24%
Dairy feed & crop expense per cwt. milk	\$4.62	\$4.53	\$4.02	\$3.91	\$4.09
Labor & mach. costs per cow	\$803	\$830	\$824	\$793	\$827
Oper. cost of prod. cwt. milk	\$10.27	\$10.28	\$9.61	\$9.53	\$9.23
Total cost of prod. cwt. milk	\$14.56	\$14.67	\$13.94	\$13.72	\$13.31
Milk rec. per cwt. milk	\$13.64	\$13.48	\$12.93	\$12.71	\$12.93
<u>Capital Efficiency</u>					
Farm capital per cow*	\$5,427	\$5,588	\$5,941	\$5,842	\$5,959
Machinery & equip. per cow	\$1,112	\$1,142	\$1,107	\$1,071	\$1,065
Real estate per cow	\$2,764	\$2,854	\$2,809	\$2,777	\$2,834
Livestock investment/cow	\$1,382	\$1,319	\$1,221	\$1,168	\$1,197
Capital turnover, years*	2.29	2.31	2.49	2.33	2.17
<u>Profitability</u>					
Net farm income w/o apprec.	\$25,446	\$22,343	\$26,544	\$27,478	\$40,879
Net farm income w/apprec.	\$27,676	\$31,773	\$24,975	\$43,876	\$66,535
Labor & management income	\$7,848	\$3,953	\$5,545	\$5,803	\$17,776
Rate return on:					
equity capital w/apprec.	1.4%	2.3%	0.3%	4.6%	9.4%
all capital w/apprec.	4.6%	5.2%	3.7%	6.2%	8.9%
all capital w/o apprec.	4.2%	3.5%	3.9%	3.5%	5.0%
<u>Financial Summary, End Year</u>					
Farm net worth	\$323,857	\$335,496	\$387,594	\$406,182	\$448,028
Change in net worth w/apprec.	--	--	\$142	\$18,813	\$40,465
Debt to asset ratio	0.40	0.39	0.36	0.36	0.34
Farm debt per cow	\$2,156	\$2,199	\$2,100	\$2,071	\$2,012

*End year farm capital is used for 1983 and 1984, average farm capital is used for 1985-1987.

SUMMARY AND ANALYSIS OF THE FARM BUSINESS

Business Characteristics and Resources Used

Recognition of important business characteristics and identification of the farm resources used is necessary for evaluating management performance. The combination of resources used and management practices employed is known as farm organization. Important farm business characteristics, the number of farms reporting these characteristics, and a listing of the average labor, land, and dairy cattle resources used in 1987 are presented in the following table.

Table 2. BUSINESS CHARACTERISTICS AND RESOURCES USED
426 New York Dairy Farms, 1987

<u>Type of Business</u>	<u>Number</u>	<u>Percent</u>	<u>Labor Force</u>	<u>Average</u>	<u>Percent</u>
Sole Proprietorship	282	66	Operators	15.9 mo.	42
Partnership	120	28	Family	5.1 mo.	13
Corporation	24	6	Family unpaid	2.4 mo.	6
			Hired	<u>14.9 mo.</u>	<u>39</u>
			Total Months	38.3	100
<u>Barn Type</u>					
Stanchion	240	56		<u>Average</u>	
Freestall	158	37	Operators (total = 564)	1.32	
Combination	28	7	Age	43	
			Education	13 yrs.	
<u>Milking System</u>					
Bucket & Carry	3	1	Estimated Value of		
Dumping Station	31	7	Labor & Management	\$25,552	
Pipeline	226	53			
Herringbone	147	35			
Other Parlor	19	4			
<u>Business Records</u>					
Account Book	183	43	<u>Land Used</u>	<u>Farms Reporting</u>	
Agrifax (mail in)	76	18	Total acres:	<u>Number</u>	<u>Average</u>
ELFAC	36	8	Owned	426	353
On-Farm Computer	47	11	Rented	366	280
Other	84	20	Tillable acres:		
			Owned	426	200
			Rented	360	125
			Total	426	305
<u>Dairy Records</u>					
D.H.I.C.	316	74	Number of		
Owner Sampler	52	12	<u>Dairy Livestock</u>	<u>Cows</u>	<u>Heifers</u>
Other	23	6	Beginning of Year	100	80
None	35	8	End of Year	103	81
			Average for Year	101	79

The sole proprietorship, conventional stall barn, pipeline milking system, farm business account book, and DHIC record system continue to prevail as the most common business characteristics of dairy farms.

There were 564 full-time operator equivalents on the 426 dairy farms for an average of 1.32 operators per farm. The operators averaged 43 years of age and 13 years of formal education. Additional data on the labor force is in Table 35. All 426 farm businesses included in the regular dairy summary own farm real estate. Dairy farm renters are summarized separately later in this publication. However, 360 of the dairy farm owners rented an average of 125 acres of tillable land in 1987. The 426 farms averaged 305 total tillable acres per farm of which 105 acres were rented. Tables 17 and 23 contain additional information on land use and the dairy herd.

Accounting Procedures

Accrual accounting is used for measuring farm profitability. It expresses value of production and cost of production for the year, regardless of whether cash was received or expended. Accrual is a more accurate method than cash accounting when examining the profitability of a business in a particular year. Cash expenses and cash receipts are used when evaluating the cash flow position of the business.

The accrual accounting system considers 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 costs of production and the total value of production are obtained to provide an accurate representation of profitability in that year.

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

Income Statement

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

Hired labor includes gross wages plus the farm share of social security, worker's compensation insurance, health insurance, and other employee benefits paid by the farm employer.

Feed expenses are divided into purchased dairy grain and concentrate, purchased dairy roughage, and all feed purchased for other 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.

Machinery costs represent all the operating costs of using power machinery on the farm. Ownership costs are excluded here but are included in the analysis of machinery costs.

Livestock expenses include the cost of supplies and services directly associated with the care and maintenance of the dairy herd, plus milk marketing costs. The purchase of replacement cattle is considered a herd maintenance expense while expansion livestock is not.

Crop expenses include the costs of fertilizer, lime, seeds, pesticides, and other crop supplies.

Real estate expenses are the direct costs associated with owning and maintaining farmland and buildings.

Other includes the farm share of utilities, interest paid on all farm indebtedness, and miscellaneous costs. Total operating expenses exclude expansion livestock and machinery and building depreciation. These nonoperating costs are included in total expenses. Depreciation charges are based on income tax figures.

Cash and accrual farm expenses are summarized below. Total operating accrual expenses for the 426 farms averaged \$516 per day and 76 percent of total farm accrual receipts.

Table 3. CASH AND ACCRUAL FARM EXPENSES
426 New York Dairy Farms, 1987

Expense Item	Cash Paid +	Change in Inventory or Prepaid Expense +	Change in Accounts Payable -	Accrual Expenses	Percent
<u>Hired Labor</u>	\$ 24,585	\$ -3	\$ -60	\$ 24,522	13
<u>Feed</u>					
Dairy grain & conc.	52,067	-868	-156	51,043	27
Dairy roughage	1,842	161	-100	1,903	1
Other livestock	816	37	4	857	<1
<u>Machinery</u>					
Mach. hire, rent/lease	2,355	0	18	2,373	1
Machinery repairs/parts	12,089	-19	71	12,141	6
Auto expense (farm share)	668	0	9	677	<1
Fuel, oil & grease	5,704	26	14	5,744	3
<u>Livestock</u>					
Replacement livestock	2,141	0	0	2,141	1
Breeding	3,139	-36	-3	3,100	2
Vet & medicine	4,577	-9	31	4,599	2
Milk marketing	12,208	0	-13	12,195	6
Cattle lease/rent	131	0	-1	130	<1
Other livestock expense	8,658	-33	-51	8,574	5
<u>Crops</u>					
Fertilizer & lime	8,523	-213	-71	8,239	4
Seeds & plants	3,509	-58	-9	3,442	2
Spray, other crop exp.	3,252	-146	50	3,156	2
<u>Real Estate</u>					
Land/bldg./fence repair	3,314	-24	4	3,294	2
Taxes	5,687	-6	23	5,704	3
Insurance	3,630	-14	5	3,621	2
Rent & lease	4,235	-15	-20	4,200	2
<u>Other</u>					
Telephone (farm share)	726	0	-1	725	<1
Electricity (farm share)	5,589	0	-3	5,586	3
Interest paid	17,104	0	28	17,132	9
Miscellaneous	3,209	20	8	3,237	2
Total Operating	\$189,758	\$-1,200	\$-223	\$188,335	100
Expansion livestock	\$ 1,710	\$ 0	\$ 0	\$ 1,710	
Machinery depreciation				15,488	
Building depreciation				8,093	
TOTAL ACCRUAL EXPENSES				\$213,626	

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

Change in inventory represents feeds and supplies purchased in a prior year and used this year (positive change), and inputs purchased this year but not used (negative change).

Prepaid expenses are advance payments made for services and noninventory items. For example, advance payments for rent increased an average of \$15 per farm in 1987, and that increase is subtracted from cash rent to determine the correct 1987 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.

Cash and accrual farm receipts are presented in the following table. Total cash receipts averaged \$242,431 per farm. Total accrual receipts averaged \$248,818 per farm. Accrual receipts were greater than cash receipts due to dairy herd growth and increases in crop inventory. Cow numbers increased an average of three head per farm and the homegrown feed inventory increased \$26 per cow.

Table 4. CASH AND ACCRUAL FARM RECEIPTS
426 New York Dairy Farms, 1987

Receipt Item	Cash Receipts	Change in + Inventory	Change in + Accounts Receivable	Accrual = Receipts	Percent
Milk sales	\$212,288		\$337	\$212,625	85
Dairy cattle	15,091	\$3,301	81	18,472	7
Dairy calves	3,347		0	3,347	1
Other livestock	430	123	12	565	<1
Crops	2,118	2,702	1	4,821	2
Government receipts	5,729	-113*	61	5,678	2
Custom machine work	284		-22	262	<1
Gas tax refund	268		2	269	<1
Other	2,877		36	2,913	1
- Nonfarm noncash capital**		(-) 135		(-) 135	
Total	\$242,431	\$5,878	\$507	\$248,818	100

*Change in advanced government receipts.

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

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

Accrual receipts represent the value of all farm commodities produced and services actually provided by the farmer during the year. Increases in livestock inventory caused by herd growth and/or quality, are included. Decreases in inventory caused by herd reduction are deducted. Changes in inventories of crops grown are accounted for. Changes in advanced government receipts are the amount government payments received for participating in a future year's program have changed from 1986 to 1987. An increase requires a negative adjustment to cash receipts and a decrease a positive adjustment. Nonfarm noncash capital are gifts and inheritances of cattle and crops received by the farm owner/operator, and included in inventory or used in the business during the year. They are deducted from growth in inventory and reduce accrual receipts because they came from outside the farm business. Gift and inheritances of machinery and real estate are accounted for in Table 12. Changes in accounts receivable include the difference between the January milk check for this December's marketings and the previous January's check, and other delayed payments.

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.

Table 5. NET FARM INCOME
426 New York Dairy Farms, 1987

Item	Average 426 Farms	Average Top 10% Farms*
Total accrual receipts	\$248,818	\$698,520
+ Appreciation: Livestock	6,779	10,316
Machinery	3,936	5,658
Real Estate	11,726	22,210
Other Stock/Cert.	414	1,183
- Total including appreciation	\$271,673	\$737,887
- Total accrual expenses	213,626	561,556
- Net Farm Income (with appreciation)	\$ 58,047	\$176,331
Net Farm Income (without appreciation)	\$ 35,192	\$136,964

*Average of 42 farms with highest net farm incomes (without appreciation).

Return to operator(s') labor, management, and equity capital measures the total business profits for the farm operators. It is calculated by deducting a charge for unpaid family labor from net farm income. Operator(s') labor is not included in unpaid family labor. Return to operator(s') labor, management, and equity capital has been compiled with and without appreciation. Appreciation is considered an important part of the return to ownership of farm assets.

Table 6. RETURN TO OPERATOR(S') LABOR, MANAGEMENT, AND EQUITY
426 New York Dairy Farms, 1987

Item	Average 426 Farms		Average Top 10% Farms	
	With Apprec.	Without Apprec.	With Apprec.	Without Apprec.
Net farm income	\$58,047	\$35,192	\$176,331	\$136,964
- Family labor unpaid @ \$650 per month	1,582	1,582	743	743
- Return to Operator(s') Labor, Management, & Equity	\$56,465	\$33,610	\$175,588	\$136,221

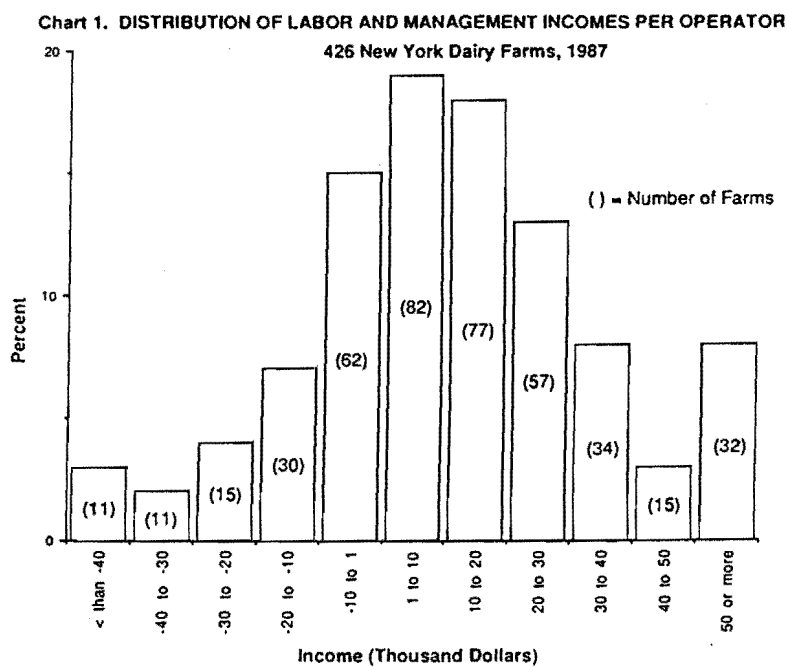
Labor and management income is the share of net farm income without appreciation returned to the operator(s') labor and management. Appreciation is not included as part of the return to labor and management. Labor and management income is determined by deducting the cost of using equity capital at a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

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
426 New York Dairy Farms, 1987

Item	Average 426 Farms	Average Top 10% Farms
Return to operator(s') labor, management, & equity without appreciation	\$33,610	\$136,221
- Real interest @ 5% on \$380,697 equity capital for average & \$922,060 for the top 10%	<u>19,035</u>	<u>46,103</u>
- Labor & Management Income (1.32 operators)	\$14,575	(1.76) \$ 90,118
Labor & Management Income per Operator	\$11,042	\$51,204

Labor and management income per operator averaged \$11,042 on these 426 dairy farms in 1987. The range in labor and management income per operator was from less than -\$50,000 to more than \$60,000. Returns to labor and management were negative on 31 percent of the farms. Labor and management income per operator ranged from \$0 to \$19,999 on 37 percent of the farms while 32 percent showed labor and management incomes of \$20,000 or more per operator.



Return on 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. The earnings or amount of net farm income allocated to labor and management is the opportunity cost or value of operator(s') labor and management estimated by the cooperators. Return on equity capital is calculated with and without appreciation. The rate of return on equity capital is determined by dividing the amount returned by the average farm net worth or equity capital. Return on total 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 total capital.

Table 8. RETURN ON EQUITY CAPITAL
426 New York Dairy Farms, 1987

Item	Average 426 Farms	Average Top 10% Farms
Return to operators' labor, management, & equity capital with appreciation	\$56,465	\$175,588
- Value of operators' labor & management	<u>25,552</u>	<u>42,510</u>
= Return on equity capital with appreciation	\$30,913	\$133,078
+ Interest paid	\$17,132	\$38,550
= Return on total capital with appreciation	\$48,045	\$171,628
Return on equity capital without appreciation	\$ 8,058	\$ 93,711
Return on total capital without appreciation	\$25,190	\$132,261
Rate of return on average equity capital:		
with appreciation	8.1%	14.4%
without appreciation	2.1%	10.2%
Rate of return on average total capital:		
with appreciation	8.1%	12.3%
without appreciation	4.2%	9.5%

Returns Per Unit of Input

Income from a business can also be calculated in relation to various input units. For example, the labor and management return can be allocated to the entire labor force and figured on a per worker basis.

Table 9. RETURNS TO ALL LABOR AND MANAGEMENT
426 New York Dairy Farms, 1987

Item	Average
Labor & management income per farm	\$14,575
+ Cost of hired labor	24,522
+ Value of unpaid family labor	<u>1,582</u>
= Total Returns to All Labor & Management	\$40,679
Average worker equivalent	3.19
Returns per worker equivalent	\$12,752
Returns per hour (3,000 hours/worker/year)	\$4.25

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 the liabilities, and fill out the balance sheet. The second step is to analyze the completed balance sheet by evaluating the relationships between assets and liabilities and changes made during the year.

Table 10. 1987 FARM BUSINESS AND NONFARM BALANCE SHEET
426 New York Dairy Farms, 1987

Farm Assets		Jan. 1	Dec. 31	Farm Liabilities & Net Worth		Jan. 1	Dec. 31
<u>Current</u>				<u>Current</u>			
Farm cash, checking & savings	\$ 4,668	\$ 5,992	Accounts payable	\$ 5,609	\$ 5,267		
Accounts rec.	18,370	18,879	Operating debt	3,711	4,304		
Prepaid expenses	73	111	Short-term	3,987	3,319		
Feed & supplies	<u>43,628</u>	<u>47,493</u>	Advanced Govt. Rec.	9	<u>122</u>		
Total	\$66,739	\$72,475	Total	\$13,316	\$13,012		
<u>Intermediate</u>				<u>Intermediate</u>			
Dairy cows:				Structured debt			
owned	\$ 82,525	\$ 89,791	1-10 years	\$76,096	\$76,901		
leased	217	207	Financial lease (cattle/mach.)	1,207	1,306		
Heifers	33,864	36,628	FLB & PCA stock	<u>4,938</u>	<u>4,980</u>		
Bulls/other lvstk.	920	1,095	Total	\$82,241	\$83,187		
Mach./eq. owned	103,088	108,157	<u>Long-Term</u>				
Mach./eq. leased	990	1,099	Structured debt				
FLB & PCA stock	4,938	4,980	≥10 years	\$118,303	\$115,538		
Other stock & cert.	<u>7,569</u>	<u>8,147</u>	Financial lease (structures)	<u>1,363</u>	<u>1,073</u>		
Total	\$234,111	\$250,104	Total	\$119,665	\$116,611		
<u>Long-Term</u>				Total Farm Liab.			
Land/buildings:				\$215,223	\$212,810		
owned	\$276,196	\$287,367	FARM NET WORTH				
leased	<u>1,363</u>	<u>1,073</u>	\$363,186	\$398,209			
Total	\$277,559	\$288,440					
Total Farm Assets	\$578,408	\$611,019					
<u>Nonfarm Assets*</u>		Jan. 1	Dec. 31	<u>Nonfarm Liabilities* & Net Worth</u>		Jan. 1	Dec. 31
Personal cash, chkg. & savings	\$ 8,075	\$ 7,784	Nonfarm Liab.	\$2,149	\$2,073		
Cash value life ins.	3,465	4,053	NONFARM NET WORTH	\$47,764	\$57,958		
Nonfarm real estate	20,311	28,052	<u>FARM & NONFARM*</u>				
Auto (personal sh.)	2,522	2,902	Total Assets	\$628,321	\$671,050		
Stocks & bonds	3,924	4,407	Total Liabilities	<u>217,372</u>	<u>214,883</u>		
Household furn.	7,431	7,759	<u>TOTAL FARM & NON-</u>				
All other	<u>4,185</u>	<u>5,075</u>	FARM NET WORTH				
Total Nonfarm	\$49,913	\$60,031	\$410,949	\$456,167			

*Average of 259 farms completing the nonfarm balance sheet.

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

The balance sheet analysis continues by examining financial and debt ratios and factors measuring levels of debt. Percent equity is calculated by dividing net worth by assets. Equity increases as the value of assets increase more than liabilities. The debt to asset ratio is compiled by dividing liabilities by assets. Low debt to asset ratios reflect strength in solvency and the potential capacity to borrow. The debt analysis ratios show how well the debt is structured and managed. Debt levels per unit of production include some old standards that are still useful if used with measures of cash flow and repayment ability. Fourteen farms reported no farm liabilities.

Table 11. BALANCE SHEET ANALYSIS
426 New York Dairy Farms, 1987

Item	Average 426 Farms	Average Top 10% Farms		
<u>Farm Financial Ratios:</u>				
Percent equity	65%	68%		
Debt/asset ratio: total	0.35	0.32		
long-term	0.40	0.35		
inter. & current	0.30	0.30		
<u>Change in Net Worth:</u>				
Without appreciation	\$12,168	\$74,291		
With appreciation	\$35,023	\$113,658		
<u>Farm Debt Analysis:</u>				
Accts. payable as % of total debt	2%	1%		
Long-term liab. as % of total debt	55%	49%		
Current & int. liab. as % of tot. debt	45%	51%		
<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	\$2,046	\$1,064	\$1,797	\$1,147
Long-term debt	1,121	583	886	565
Intermediate & current debt	925	481	911	581

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
426 New York Dairy Farms, 1987

Item	Real Estate	Machinery/Equip.	Livestock
Value beg. of year	\$276,196	\$103,088	\$117,309
Purchases	\$11,488*	\$17,124	
+ Nonfarm noncash transfer**	43	74	
- Lost capital	2,360		
- Sales	1,275	576	
- Depreciation	<u>8,093</u>	<u>15,488</u>	
- Net investment	-197	1,134	3,425
+ Appreciation	<u>11,369***</u>	<u>3,936</u>	<u>6,779</u>
Value end of year	\$287,367	\$108,157	\$127,513

*\$2,985 land and \$8,503 buildings and/or depreciable improvements.

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

***Excludes \$357 of appreciation on assets sold during the year.

Cash Flow Summary and Analysis

Completing an annual cash flow summary and analysis is important to determine how well the cash generated by the business, plus that brought in from outside, met the annual cash needs of the business and the farm family. Understanding last year's cash flow is the first step toward planning and managing cash flow for the current and future years.

The Annual Cash Flow Statement is structured to compare all the cash inflows with all the cash outflows for the year. Cash inflows include all the cash farm receipts, receipts from the sale of farm assets, additional funds borrowed, cash used in the business from the sale of nonfarm capital, as well as the amount of cash available at the beginning of the year. Cash outflows include all the cash farm expenses, capital purchases, principal payments, money taken out of the business, and the cash balance left at year's end. When all the cash inflows and outflows are correct, the statement will balance. The positive imbalance of \$2,513 indicates that on average, farms had more inflows than were accounted for by outflows.

Table 13.

ANNUAL CASH FLOW STATEMENT
426 New York Dairy Farms, 1987

<u>Item</u>	Average 426 Farms	Average Top 10% Farms
<u>Cash Inflows</u>		
Beginning farm cash, checking & savings	\$ 4,668	\$ 8,095
Cash farm receipts	242,431	664,154
Sale of assets: Machinery	576	1,214
Real estate	1,254	1,879
Other stock & certificates	780	2,090
Money borrowed (intermediate & long-term)	30,912	80,152
Money borrowed (short-term)	2,428	9,582
Increase in operating debt	592	6,062
Nonfarm income	4,514	2,189
Cash from nonfarm capital used in business	1,534	219
Money borrowed - nonfarm	<u>291</u>	<u>40</u>
Total	\$289,981	\$775,676
<u>Cash Outflows</u>		
Cash farm expenses	\$189,757	\$512,936
Capital purchases: Expansion livestock	1,710	6,137
Machinery	17,124	39,701
Real estate	11,488	45,439
Other stock & certificates	944	4,301
Principal payments (intermediate & long-term)	32,872	81,143
Principal payments (short-term)	3,096	14,803
Decrease in operating debt	0	0
Nonfarm debt payments	432	360
Personal withdrawals & family expenditures	24,053	49,715
Ending farm cash, checking & savings	<u>5,992</u>	<u>15,134</u>
Total	\$287,468	\$769,670
Imbalance (error)	\$ 2,513	\$ 6,006

Table 14.

ANNUAL CASH FLOW BUDGETING DATA
426 New York Dairy Farms, 1987

Item	Average 426 Farms		Average Top 10% Farms	
	Total	Per Cow	Total	Per Cow
Average number of cows	101		250	
<u>Accrual Operating Receipts</u>				
Milk	\$212,625	\$2,107	\$578,773	\$2,312
Dairy cattle	18,473	183	56,213	225
Dairy calves	3,347	33	8,472	34
Other livestock	565	6	1,230	5
Crops	4,821	48	24,394	97
Miscellaneous receipts	<u>9,122</u>	<u>90</u>	<u>29,574</u>	<u>118</u>
Total	\$248,953	\$2,467	\$698,656	\$2,791
<u>Accrual Operating Expenses</u>				
Hired labor	\$ 24,522	\$ 243	\$ 87,216	\$ 348
Dairy grain & concentrate	51,043	506	136,485	545
Dairy roughage	1,903	19	7,119	28
Other livestock feed	857	8	939	4
Machinery hire/rent/lease	2,373	23	4,938	20
Machinery repairs/parts & auto	12,818	127	30,040	120
Fuel, oil & grease	5,744	57	13,312	53
Replacement livestock	2,141	21	2,967	12
Breeding	3,100	31	8,018	32
Vet & medicine	4,599	46	13,573	54
Milk marketing	12,195	121	31,373	125
Cattle lease	130	1	289	1
Other livestock expense	8,574	85	20,673	83
Fertilizer & lime	8,239	82	19,261	77
Seeds & plants	3,442	34	9,348	37
Spray/other crop expense	3,156	31	10,046	40
Land, building, fence repair	3,294	33	11,017	44
Taxes	5,704	56	11,671	47
Insurance	3,621	36	7,212	29
Real estate rent/lease	4,200	42	13,108	52
Utilities	6,310	63	13,436	54
Miscellaneous	<u>3,237</u>	<u>32</u>	<u>7,658</u>	<u>31</u>
Total Less Interest Paid	\$171,203	\$1,697	\$459,700	\$1,836
<u>Net Accrual Operating Income</u>				
(without interest paid)	\$77,750	\$771	\$238,956	\$955
- Change in livestock/crop inv.	5,878	58	32,731	131
- Change in accounts rec.	507	5	1,634	7
+ Change in feed/supply inv.	-1,201	-12	-9,838	-39
+ Change in accounts payable*	<u>-250</u>	<u>-3</u>	<u>-4,799</u>	<u>-19</u>
NET CASH FLOW	\$69,914	\$693	\$189,954	\$759
- Net personal withdrawals & family expenditures	<u>19,248</u>	<u>191</u>	<u>47,486</u>	<u>190</u>
Available for Farm Debt				
Payments & Investments	\$50,666	\$502	\$142,468	\$569
- Farm Debt Payments	<u>52,969</u>	<u>525</u>	<u>138,974</u>	<u>555</u>
Avail. for Farm Investments	\$-2,303	\$-23	\$ 3,494	\$ 14
- Capital Purchases: cattle, machinery & improvements	<u>31,266</u>	<u>310</u>	<u>95,578</u>	<u>382</u>
Capital Deficit	\$-33,569	\$-333	\$-92,084	\$-368

*Excludes change in interest account payable.

Repayment Analysis

The second step in cash flow planning is to compare and evaluate debt payments planned and made last year, and estimate the payments required in the current year. It is helpful to compare and evaluate a farm's repayment position by using debt payments per unit of production and receipt/debt payment ratios. The data presented below are for the 332 farms that completed Dairy Farm Business Summaries for both 1986 and 1987.

Table 15. FARM DEBT PAYMENTS PLANNED
New York Dairy Farms, 1987

Debt Payments	Same 332 Dairy Farms			Average Top 10% Farms		
	1987 Payments		Planned 1988	1987 Payments		Planned 1988
	Planned	Made		Planned	Made	
Long-term	\$13,966	\$17,492	\$15,181	\$27,602	\$37,140	\$39,482
Intermediate-term	22,300	33,568	23,820	53,851	95,427	67,037
Short-term	2,138	3,525	2,237	6,342	18,410	8,494
Operating (net reduction)	865	0	647	1,449	0	1,549
Accounts payable (net reduction)	<u>925</u>	<u>601</u>	<u>747</u>	<u>3,407</u>	<u>9,024</u>	<u>1,310</u>
Total	\$40,194	\$55,186	\$42,633	\$92,651	\$160,000	\$117,872
Per cow	\$395	\$542		\$326	\$563	
Per cwt. 1987 milk	\$2.39	\$3.29		\$1.79	\$3.09	
Percent of total 1987 receipts	16%	22%		11%	20%	
Percent of 1987 milk receipts	19%	25%		14%	24%	

The Cash Flow Coverage Ratio measures the ability of the farm business to meet its planned debt payment schedule. The ratio shows the percentage of last year's planned payments that could have been made with last year's available cash flow.

Table 16. CASH FLOW COVERAGE RATIO
New York Dairy Farms, 1987

Item	Same 332 Dairy Farms	Average Top 10% Farms
Cash farm receipts	\$248,854	\$762,440
- Cash farm expenses	192,364	589,658
+ Interest paid	16,876	44,056
- Net personal withdrawals from farm*	<u>20,135</u>	<u>50,518</u>
(A) = Amount Available for Debt Service	\$53,231	\$166,320
(B) = Debt Payments Planned for 1987	\$40,194	\$92,651
(A + B) = Cash Flow Coverage Ratio for 1987	1.32	1.80

*Personal withdrawals and family expenditures less nonfarm income and nonfarm money borrowed. If family withdrawals are excluded the cash flow coverage ratio will be incorrect.

Cropping Program Analysis

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

Table 17. LAND RESOURCES AND CROP PRODUCTION
426 New York Dairy Farms, 1987

Item	Average 426 Farms			Average Top 10% Farms		
	Owned	Rented	Total	Owned	Rented	Total
<u>Land</u>						
Tillable	200	105	305	406	236	641
Nontillable	50	13	64	51	10	61
Other nontillable	<u>103</u>	<u>7</u>	<u>110</u>	<u>156</u>	<u>7</u>	<u>162</u>
Total	353	125	479	613	253	864
<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	422	154	2.7 tn DM	42	239	3.2 tn DM
Corn silage	394	72	16.2 tn 5.5 tn DM	41	190	17.2 tn 5.8 tn DM
Other forage	36	25	2.0 tn DM	3	68	1.4 tn DM
Total forage	424	223	3.6 tn DM	42	429	4.3 tn DM
Corn grain	251	72	113.6 bu	36	140	122.3 bu
Oats	101	29	55.8 bu	10	28	61.3 bu
Wheat	27	30	47.2 bu	8	38	46.6 bu
Other crops	58	27		11	46	
Tillable pasture	130	34		10	55	
Idle	176	44		27	83	
Total Tillable Acres	426	305		42	641	

Crop acres and yields compiled for the average represent only the number of farms reporting each crop. All but four of the 426 farms produced hay or hay crop silage in 1987. Ninety-two percent produced corn silage, 59 percent grew and harvested corn grain, and 24 percent grew oats for grain. 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.

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

Table 18. CROP MANAGEMENT FACTORS
426 New York Dairy Farms, 1987

Item	Average 426 Farms	Average Top 10% Farms
Total tillable acres per cow	3.03	2.56
Total forage acres per cow	2.20	1.71
Harvested forage dry matter, tons per cow	7.80	7.35

In the third year of collecting information on individual crop production costs, over 270 cooperators allocated direct crop related expenses to hay crop, corn, and other crop production. The data in Table 19 has 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 19, the total per tillable acre represents all 426 farms and the expenses for individual crops are for the 274 farms which submitted data.

Table 19. CROP RELATED ACCRUAL EXPENSES
New York Dairy Farms, 1987

Expense	Average	Average 274 Farms Reporting Individual Crop Costs				
	426 Farms	Hay Crop		All	Corn	Corn
	Total Per Tillable Acre	Per Acre	Per Ton DM	Corn Per Acre	Silage Per Ton DM	Grain Per Dry Shell Bu.
Fertilizer & lime	\$26.99	\$12.13	\$4.49	\$29.58	\$ 5.34	\$0.26
Seeds & plants	11.28	4.90	1.82	12.85	2.32	0.11
Spray & other crop expense	<u>10.34</u>	<u>2.70</u>	<u>1.00</u>	<u>13.98</u>	<u>2.53</u>	<u>0.12</u>
Total	\$48.61	\$19.73	\$7.31	\$56.41	\$10.19	\$0.49
Average Top 24 Farms						
<u>Average Top 10% Farms:</u>	<u>Reporting Individual Crop Costs</u>					
Fertilizer & lime	\$30.03	\$14.30	\$4.52	\$27.48	\$4.72	\$0.22
Seeds & plants	14.58	6.74	2.13	12.36	2.12	0.10
Spray & other crop expense	<u>15.66</u>	<u>3.99</u>	<u>1.26</u>	<u>13.28</u>	<u>2.28</u>	<u>0.11</u>
Total	\$60.27	\$25.03	\$7.91	\$53.12	\$9.12	\$0.43

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 20. ACCRUAL MACHINERY EXPENSES
426 New York Dairy Farms, 1987

Machinery Expense Item	Average 426 Farms		Average Top 10% Farms	
	Total Expenses	Per Til. Acre	Total Expenses	Per Til. Acre
Fuel, oil & grease	\$ 5,744	\$ 18.82	\$13,312	\$ 20.76
Machinery repairs & parts	12,141	39.78	29,093	45.36
Machine hire, rent & lease	2,373	7.77	4,939	7.70
Auto expense (farm share)	677	2.22	947	1.48
Interest (5%)	5,281	17.30	10,899	16.99
Depreciation	<u>15,488</u>	<u>50.74</u>	<u>35,125</u>	<u>54.77</u>
Total	\$41,704	\$136.63	\$94,315	\$147.07

Table 21. CROP RELATED ACCRUAL EXPENSES BY HAY CROP PRODUCTION PER ACRE
274 New York Dairy Farms, 1987

Item	Tons of Hay Crop Dry Matter Per Acre				
	<2.0	2.0-2.4	2.5-2.9	3.0-3.4	≥3.5
Hay crop, tons DM/acre	1.6	2.3	2.7	3.2	4.2
Farms reporting crop expense breakdowns	62	56	56	49	51
Average number hay crop acres for farms reporting	154	142	153	133	166
<u>Accrual Crop Expense</u>					
<u>Per Acre of Hay Crop:</u>					
Fertilizer & lime	\$ 8.30	\$10.15	\$11.22	\$17.22	\$15.98
Seeds & plants	3.39	3.88	4.81	5.52	7.58
Spray & other crop expense	<u>1.17</u>	<u>1.42</u>	<u>2.95</u>	<u>3.71</u>	<u>5.03</u>
Total	\$12.86	\$15.45	\$18.98	\$26.45	\$28.59
<u>Accrual Crop Expense</u>					
<u>Per Ton DM of Hay Crop:</u>					
Fertilizer & lime	\$5.20	\$4.47	\$4.12	\$5.41	\$3.82
Seeds & plants	2.12	1.71	1.77	1.73	1.81
Spray & other crop expense	<u>0.73</u>	<u>0.63</u>	<u>1.08</u>	<u>1.16</u>	<u>1.20</u>
Total	\$8.05	\$6.81	\$6.98	\$8.30	\$6.83

Table 22. CROP RELATED ACCRUAL EXPENSES BY CORN PRODUCTION PER ACRE
271 New York Dairy Farms, 1987

Item	Tons Corn Silage/Acre			Dry Shell Bushels of Corn Grain Per Acre		
	0-14	15-19	≥20	0-87	88-112	≥113
Corn yield per acre	12.1	17.1	22.0	71.5	100.7	134.7
Farms reporting crop expense breakdowns	107	120	44	140	51	80
Average number corn acres for farms reporting	81	132	131	76	139	158
<u>Accrual Crop Exp./Acre of Corn</u>						
Fertilizer & lime	\$25.66	\$28.64	\$39.88	\$26.23	\$27.92	\$33.80
Seeds & plants	11.61	12.91	15.01	12.75	11.61	13.76
Spray & other crop expense	<u>12.50</u>	<u>13.80</u>	<u>17.30</u>	<u>11.84</u>	<u>12.91</u>	<u>16.67</u>
Total	\$49.77	\$55.35	\$72.19	\$50.82	\$52.44	\$64.23
<u>Accrual Crop Expense Per:*</u>						
	<u>Ton DM of Corn Silage</u>			<u>Dry Shell Bushel of Corn Grain</u>		
Fertilizer & lime	\$ 6.01	\$4.93	\$5.44	\$0.37	\$0.28	\$0.25
Seeds & plants	2.72	2.22	2.05	0.18	0.12	0.10
Spray & other crop expense	<u>2.93</u>	<u>2.37</u>	<u>2.36</u>	<u>0.17</u>	<u>0.13</u>	<u>0.12</u>
Total	\$11.66	\$9.52	\$9.85	\$0.72	\$0.53	\$0.47

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

From the above two tables, it is important to observe that as forage yields per acre increase, crop related expenses per acre also increase. For corn silage and corn grain, crop expense per ton of dry matter and per bushel generally decreased as yield per acre increased. However, hay crop expenses per ton of dry matter remained fairly constant except for the very low yields and the farms reporting yields of 3.0 to 3.4 tons of dry matter per acre. The higher costs on this group of 49 farms can be attributed to significantly higher fertilizer and lime expenses.

Dairy Program Analysis

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

Table 23. DAIRY HERD INVENTORY
426 New York Dairy Farms, 1987

Item	Dairy Cows		Bred		Heifers		Calves	
	No.	Value	No.	Value	No.	Value	No.	Value
Beg. year (owned)	100	\$82,525	34	\$19,814	25	\$ 9,670	21	\$4,381
+ Change w/o apprec.		2,917		-427		588		223
+ Appreciation		<u>4,349</u>		<u>1,383</u>		<u>741</u>		<u>254</u>
End year (owned)	103	\$89,791	31	\$20,770	27	\$10,999	23	\$4,858
End incl. leased	104							
Average number	101		79	(all age groups)				

Average Top 10% Farms:

Beg. year (owned)	243	\$201,197	89	\$49,807	64	\$24,452	46	\$10,292
+ Change w/o apprec.		13,197		3,919		-611		536
+ Appreciation		<u>6,235</u>		<u>2,890</u>		<u>852</u>		<u>145</u>
End year (owned)	259	\$220,629	91	\$56,616	60	\$24,693	53	\$10,973
End incl. leased	259							
Average number	250		199	(all age groups)				

There is a strong relationship between farm size and farm income. When data is sorted by herd size categories this relationship becomes apparent. Net farm income increased \$1,774 percent while labor and management income per operator jumped \$98,465 as herd size increased from less than 40 to over 300 cows per farm.

Table 24. COWS PER FARM AND FARM INCOME MEASURES
426 New York Dairy Farms, 1987

Number of Cows	Average Number of Cows	Number of Farms	Worker Equivalent	Net Farm Income (w/o apprec.)	Labor & Management Income Per Operator
Under 40	33	32	1.55	\$ 11,140	\$ 1,228
40 to 54	47	69	1.93	15,546	4,429
55 to 69	62	74	2.46	17,099	1,362
70 to 84	77	71	2.81	26,024	6,573
85 to 99	90	41	3.00	34,773	12,999
100 to 149	119	70	3.54	41,411	10,501
150 to 199	171	31	4.74	52,589	12,241
200 to 299	241	27	6.35	81,414	27,968
300 & over	436	11	9.68	208,798	99,693

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

Table 25. MILK PRODUCTION
426 New York Dairy Farms, 1987

Item	Average 426 Farms	Average Top 10% Farms
Total milk sold, lbs.	1,649,750	4,480,731
Milk sold per cow, lbs.	16,351	17,899
Average milk plant test, percent butterfat	3.57	3.60

Farms with higher rates of production tend to have higher profits. In 1987, the farms that sold more than 15,000 pounds of milk per cow had substantially higher profit margins and higher than average herd sizes.

Table 26. MILK SOLD PER COW AND FARM INCOME MEASURES
426 New York Dairy Farms, 1987

Pounds of Milk Sold Per Cow	Number of Farms	Average Number of Cows	Net Farm Income w/o Apprec.	Net Farm Income Per Cow	Labor & Management Income/Oper.
Under 12,000	27	75	\$ 7,326	\$ 98	\$-3,980
12,000 to 13,999	47	80	21,361	267	4,442
14,000 to 14,999	48	81	19,092	236	877
15,000 to 15,999	77	103	33,063	321	8,493
16,000 to 16,999	91	103	35,206	342	11,532
17,000 to 17,999	67	105	39,798	379	12,757
18,000 to 19,999	52	102	44,409	435	16,173
20,000 & over	16	228	132,249	580	70,261

The cost of producing milk has been compiled using the whole farm method, and is presented in the following table and on the next two pages.

Table 27. ACCRUAL RECEIPTS FROM DAIRY AND COST OF PRODUCING MILK
426 New York Dairy Farms, 1987

Item	Average 426 Farms			Average Top 10% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Costs of Producing Milk</u>						
Operating costs	\$153,852	\$1,525	\$9.33	\$384,641	\$1,537	\$8.58
Total costs with- out op(s') labor, mgmt. & capital	\$179,015	\$1,774	\$10.85	\$442,552	\$1,768	\$9.88
Total Costs	\$223,602	\$2,216	\$13.55	\$531,165	\$2,122	\$11.85
<u>Accrual Receipts from Milk</u>						
	\$212,625	\$2,107	\$12.89	\$578,773	\$2,312	\$12.92

Accrual receipts from milk sales are compared with the accrual costs of producing milk per cow and per hundredweight of milk in the preceding table. Using the whole farm method, operating costs of producing milk are estimated by deducting non-milk accrual receipts from total accrual operating expenses including expansion livestock. Total costs of producing milk include accrual operating costs plus expansion livestock purchased, depreciation on machinery and buildings, the value of operator's labor and management, and an interest charge for using equity capital. Note that the cost of operator's labor, management, and equity capital has been excluded in the intermediate calculation.

The total cost of producing milk on all 426 dairy farms averaged \$13.55 per hundredweight, \$0.60 more than the average price received for milk sold from these farms during 1987. In 1986 the total cost of producing milk averaged \$13.90 on 414 New York dairy farms, \$1.25 per hundredweight more than the average price received. This implies dairy farmers are willing to receive less than the stated returns on their labor and equity capital to remain in farming. The imputed costs or return to the operator's labor, management, and equity capital averaged \$2.70 per hundredweight in 1987. The actual estimated returns averaged \$2.04 per hundredweight.

Size of herd and level of milk production are directly related to the cost of producing milk. The cost of production for nine herd size categories and eight production levels is shown in the following table. The average total cost of production was \$14.64 for herds with less than 100 cows, and \$12.91 for those with 100 cows or more, for a difference of \$1.73 per hundredweight. Farms selling less than 16,000 pounds of milk per cow had an average total cost of production of \$15.10 while those selling 16,000 pounds and over averaged approximately \$12.85 for a difference of \$2.25 per hundredweight.

Table 28. FARM COST OF PRODUCING MILK BY HERD SIZE AND MILK SOLD PER COW
426 New York Dairy Farms, 1987

Number of Cows	By Herd Size			Pounds Milk Sold Per Cow	By Milk Sold Per Cow		
	Cost per Hundredweight				Cost per Hundredweight		
	Oper- ating	Excluding Op.s Labor, Mgt. & Cap.	Total		Oper- ating	Excluding Op.s Labor, Mgt. & Cap.	Total
Under 40	\$ 9.30	\$10.98	\$16.08	Under 12,000	\$11.05	\$12.96	\$17.22
40 to 54	9.31	10.94	14.74	12,000 to 13,999	9.26	11.05	14.55
55 to 69	9.49	11.18	15.05	14,000 to 14,999	9.69	11.37	14.79
70 to 84	9.22	10.90	14.04	15,000 to 15,999	9.49	11.02	13.82
85 to 99	8.97	10.49	13.30	16,000 to 16,999	9.49	10.94	13.46
100 to 149	9.25	10.88	13.83	17,000 to 17,999	9.23	10.83	13.50
150 to 199	9.62	11.18	13.55	18,000 to 18,999	9.00	10.56	13.19
200 to 299	9.61	10.95	12.74	20,000 & over	8.60	9.72	11.25
300 & over	9.04	10.22	11.53				

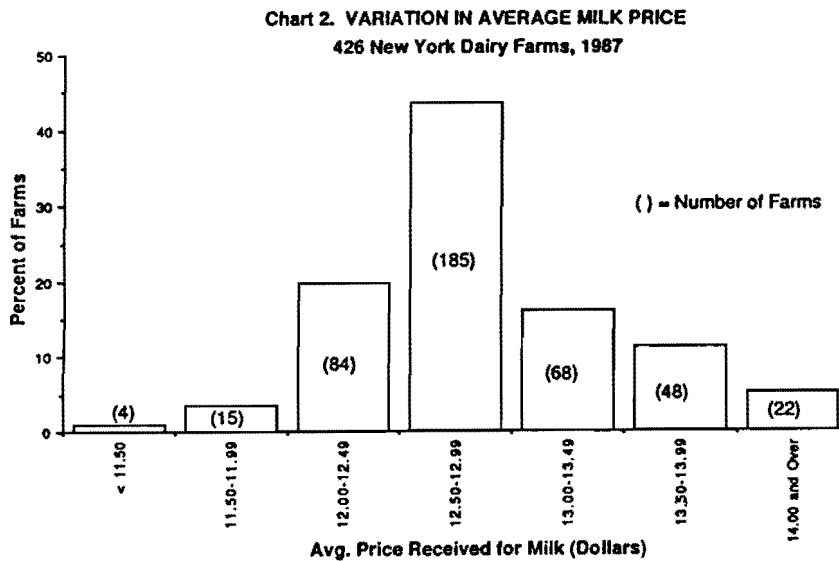
Costs of production are divided into 10 categories and presented for the 426 New York dairy farms and the top 10 percent farms (by net farm income, without appreciation) in Table 29 on page 23. Accrual non-milk receipts are deducted from accrual expenses on the assumption they were produced at cost. A \$2,700 increase in crop inventories and government receipts averaging \$5,678 per farm are included as a credit or negative cost of production under feed and crop expenses. Government receipts were primarily crop related in 1987.

Table 29. TOTAL COST OF PRODUCING MILK BASED ON WHOLE FARM DATA
426 New York Dairy Farms and Top 10 Percent of Farms, 1987

Cost Item	Average of 426 New York Dairy Farms		Average of Top 10% Farms	
	Total	Cost/Cwt. (16,498 cwt.)	Total	Cost/Cwt. (44,807 cwt)
<u>Feed & Crop Expense</u>				
Dairy grain & concentrate	\$ 51,043		\$136,485	
Dairy roughage	1,903		7,119	
Other livestock feed	857		939	
Fertilizer & lime	8,239		19,261	
All other crop expenses	6,598		19,394	
- Crop sales & gov't receipts	<u>10,499</u>		<u>43,821</u>	
TOTAL	\$ 58,141	\$ 3.52	\$139,377	\$ 3.11
<u>Labor Costs</u>				
Value of operator's labor & management & family labor	\$ 27,133		\$ 43,253	
Hired labor	<u>24,522</u>		<u>87,216</u>	
TOTAL	\$ 51,655	\$ 3.13	\$130,469	\$ 2.91
<u>Machinery Costs</u>				
Depreciation	\$ 15,488		\$ 35,125	
Machine repairs, hire & auto	15,191		34,979	
Fuel, oil & grease	5,744		13,312	
- Gas tax ref & custom work	<u>531</u>		<u>1,463</u>	
TOTAL	\$ 35,892	\$ 2.18	\$ 81,953	\$ 1.83
<u>Livestock Expenses</u>				
Breeding fees, vet & medicine	\$ 7,699		\$ 21,591	
Other livestock expense	<u>8,574</u>		<u>20,673</u>	
TOTAL	\$ 16,273	\$ 0.99	\$42,264	\$ 0.94
<u>Milk Marketing</u>	\$ 12,195	\$ 0.74	\$31,373	\$ 0.70
<u>Livestock Ownership</u>				
Purchased livestock	\$ 3,851		\$ 9,104	
Cattle lease	130		289	
- Dairy cattle & lvstk. sales*	<u>22,249</u>		<u>65,779</u>	
TOTAL	\$-18,268	\$-1.11	\$-56,386	\$-1.26
<u>Real Estate Costs</u>				
Land, building & fence repair	\$ 3,294		\$ 11,017	
Taxes & insurance	9,325		18,883	
Rent/lease	4,200		13,108	
Building depreciation	<u>8,093</u>		<u>22,043</u>	
TOTAL	\$ 24,912	\$ 1.51	\$ 65,051	\$ 1.45
<u>Interest Expense</u>				
Interest paid	\$ 17,132		\$ 38,551	
Interest on equity @ 5%	<u>19,035</u>		<u>46,103</u>	
TOTAL	\$ 36,167	\$ 2.19	\$ 84,654	\$ 1.89
<u>Miscellaneous</u>				
Telephone & electricity	\$ 6,311		\$ 13,436	
Miscellaneous	3,237		7,658	
- Miscellaneous income	<u>2,913</u>		<u>8,684</u>	
TOTAL	\$ 6,635	\$ 0.40	\$ 12,410	\$ 0.28
TOTAL COST OF PRODUCING MILK	\$223,602	\$13.55	\$531,165	\$11.85
- Operator's labor, management & capital	<u>44,587</u>	<u>2.70</u>	<u>88,613</u>	<u>1.98</u>
TOTAL COST EXCLUDING OPERATOR'S LABOR, MANAGEMENT & CAPITAL	\$179,015	\$10.85	\$442,552	\$ 9.87

*Includes \$135 of nonfarm noncash capital for cattle and crops.

The average or mean price per hundredweight of milk sold is calculated by dividing the gross milk receipts for the year by the total pounds of milk sold. The average price for the 426 farms was \$12.89 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.



Sixty-three percent of the farms received from \$12.00 to \$12.99 per hundredweight of milk sold. Thirty-three percent of the farms received \$13.00 or more per hundredweight while four percent received less than \$12.00 per hundredweight. Location and organization of markets are factors contributing to the variability of milk prices on these dairy farms. Management practices on farms as well as in milk companies also affect farm milk prices. Seasonality of production and butterfat test are two variables under the direct control of the farm manager.

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 30. DAIRY RELATED ACCRUAL EXPENSES
426 New York Dairy Farms, 1987

Item	Average 426 Farms		Average Top 10% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purc. dairy grain & conc.	\$506	\$3.09	\$545	\$3.04
Purchased dairy roughage	19	0.12	28	0.16
Total Purchased Dairy Feed	\$525	\$3.21	\$573	\$3.20
Purchased grain & conc. as % of milk receipts		24%		24%
Purchased feed & crop exp.	\$672	\$4.11	\$728	\$4.07
Purchased feed & crop exp. as % of milk receipts		32%		31%
Breeding	\$31	\$0.19	\$32	\$0.18
Veterinary & medicine	46	0.28	54	0.30
Milk marketing	121	0.74	125	0.70
Cattle lease	1	0.01	1	0.01
Other livestock expense	85	0.52	83	0.46

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 includes the amount spent for calf and heifer feed, it actually represents the feed cost for one cow and 0.78 replacement being raised.

Purchased feed and crop expense per hundredweight of milk is one of the most useful feed cost measures because it accounts for some of the variations in feeding and cropping programs, and milk production between herds. It includes all purchased feeds used on the farm, and it includes crop expenses that are associated with feed production.

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 and milk prices can have an adverse effect. Purchased feed and crop expense as percent of milk sales removes much of the variation caused by the feeding of home grown grains.

Cost control has an important affect on farm profitability. The relationship purchased dairy grain and concentrates as percent of milk receipts has with farm profitability is shown in the following table.

Table 31. PURCHASED FEED AND CROP EXPENSE PER HUNDREDWEIGHT OF MILK AND FARM INCOME MEASURES
426 New York Dairy Farms, 1987

Feed & Crop Exp. Per Cwt. of Milk	Number of Farms	Number of Cows	Forage Dry Matter Harvested Per Cow	Pounds Milk Per Cow	Net Farm Income Without Apprec.	Labor & Management Income Per Operator
\$5.50 or more	21	100	6.9	15,130	\$11,912	\$-4,423
5.00 to 5.49	47	103	7.0	15,643	22,748	1,536
4.50 to 4.99	63	118	8.0	16,607	41,605	15,710
4.00 to 4.49	89	106	8.3	16,494	35,720	12,417
3.50 to 3.99	97	98	7.9	16,843	40,113	15,316
3.00 to 3.49	55	95	7.5	16,404	39,432	13,745
2.50 to 2.99	33	82	7.9	16,165	37,240	11,590
Less than 2.50	21	81	7.8	15,344	27,766	3,704

If purchased feed and crop expenses are restricted enough to cause substantial declines in production, profits will fall. Farmers spending less than \$5.00 but more than \$2.50 per hundredweight of milk for feed and crop expenses in 1987 appear to be practicing the most effective feed and crop cost control.

Capital and Labor Efficiency Analysis

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

Table 32. CAPITAL EFFICIENCY
426 New York Dairy Farms, 1987

Item (Average for Year)	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	\$186,274	\$5,894	\$1,948	\$2,974
Real estate		\$2,805		\$1,415
Machinery & equipment	\$33,410	\$1,057	\$349	
Capital turnover, years		2.19		
<u>Average Top 10% Farms:</u>				
Farm capital	\$219,414	\$5,555	\$2,168	\$3,425
Real estate		\$2,515		\$1,551
Machinery & equipment	\$34,506	\$874	\$341	
Capital turnover, years		1.88		

Capital turnover is a measure of capital efficiency as it shows the number of years of farm receipts required to equal or "turnover" capital investment. It is computed by dividing the average farm assets by the year's total farm accrual receipts. The relationship capital turnover has to labor and management income and other factors is shown in the following table. As a general rule, dairy farmers should aim for a capital turnover rate of 2.5 years or less.

Table 33. CAPITAL TURNOVER AND LABOR AND MANAGEMENT INCOME
426 New York Dairy Farms, 1987

Capital Turnover Rate - Years	No. of Farms	No. of Cows	Farm Capital (average for year)		Labor & Mgt. Inc. Per Operator	Net Farm Income (w/o apprec.)
			Per Cow	Per Worker		
Less than 1.5	21	192	\$4,010	\$150,196	\$42,747	\$87,797
1.5 to 1.99	103	124	5,039	172,022	21,507	48,476
2.0 to 2.49	157	95	5,944	183,616	11,036	34,426
2.5 to 2.99	81	84	6,886	206,035	4,335	26,615
3.0 to 3.49	29	84	7,832	215,401	-4,867	18,581
3.5 & over	35	58	9,018	229,156	-16,479	1,583

The 42 farms with the highest net farm incomes (without appreciation) were considerably above the average of all 426 farms in the three measures of labor efficiency. The top 10 percent sold 37 percent more milk per worker than the average of all farms.

Table 34. LABOR EFFICIENCY
426 New York Dairy Farms, 1987

Labor Efficiency	Average 426 Farms		Average Top 10% Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	101	32	250	40
Milk sold, pounds	1,649,750	516,728	4,480,731	707,041
Tillable acres	305	96	641	101

The labor force averaged 3.19 full-time worker equivalents per farm. Forty-one percent of the labor was supplied by the farm operator/managers. There were two operators on 146 farms, three on 24 farms, and three farms reported four operators.

Labor costs, labor efficiency, and farm profitability are closely related. Farms with high net farm incomes can attribute some of their success to the control of labor and machinery costs. Labor and machinery costs averaged \$10 per cow less on the 42 farms in the top decile.

Table 35. LABOR FORCE INVENTORY AND COST ANALYSIS
426 New York Dairy Farms, 1987

Labor Force	Months	Age	Years of Educ.	Value of Labor & Mgmt.
Operator number 1	11.71	45	13	\$18,897
Operator number 2	3.61	39	13	5,778
Operator number 3	0.51	42	13	776
Operator number 4	0.07	28	12	<u>101</u>
Family paid	5.05			Total \$25,552
Family unpaid	2.43			
Hired	<u>14.94</u>			
Total	38.32	+ 12 = 3.19 Worker Equivalent 1.32 Operator/Manager Equiv.		
<u>Average Top 10% Farms:</u>				
Total	76.05	+ 12 = 6.34 Worker Equivalent		
Operators'	21.14	+ 12 = 1.76 Operator/Manager Equiv.		

Labor Costs	Average 426 Farms			Average Top 10% Farms		
	Total	Per Cow	Per Til. Acre	Total	Per Cow	Per Til. Acre
Value op.s' lab. (\$900/mo)	\$14,303	\$142	\$ 48.86	\$ 19,029	\$ 76	\$ 29.67
Family unpd. (\$650/mo.)	1,582	16	5.18	743	3	1.16
Hired	<u>24,522</u>	<u>243</u>	<u>80.34</u>	<u>87,216</u>	<u>348</u>	<u>136.00</u>
Total Labor	\$40,407	\$401	\$132.38	\$106,987	\$427	\$166.83
Machinery Cost	<u>41,704</u>	<u>413</u>	<u>136.63</u>	<u>94,315</u>	<u>377</u>	<u>147.07</u>
Total Labor & Mach.	\$82,111	\$814	\$269.01	\$201,302	\$804	\$313.89

The relationship of labor efficiency to net farm income is very positive on the 426 farms. The higher outputs of milk sold per worker are partially attributable to more and higher producing cows.

Table 36. MILK SOLD PER WORKER AND NET FARM INCOME
426 New York Dairy Farms, 1987

Pounds of Milk Sold Per Worker	No. of Farms	No. of Cows	Pounds of Milk Per Cow	Net Farm Income (w/o apprec.)	Labor & Mgmt. Income Per Operator
Under 200,000	6	49	11,490	\$ 5,157	\$-2,725
200,000 to 299,999	29	50	13,722	9,037	-6,032
300,000 to 399,999	89	65	14,796	18,916	2,501
400,000 to 499,999	129	83	15,876	27,394	7,696
500,000 to 599,999	86	107	16,754	35,239	8,849
600,000 to 699,999	52	132	16,994	53,266	21,160
700,000 & over	35	247	17,644	105,173	51,089

Miscellaneous Costs

Costs in addition to feed, machinery, and labor make a sizable impact on total dairy farm expenditures and profits. The "cost conscious" manager checks on all cost items both large and small. Good cost management requires careful planning and priority spending on farm inputs. A number of miscellaneous cost items and cost control measures are reported in the following table to help in a detailed checkup on all farm costs.

Table 37. MISCELLANEOUS COST CONTROL MEASURES
426 New York Dairy Farms, 1987

<u>Item</u>	<u>Average 426 Farms</u>	<u>Average Top 10% Farms</u>
<u>Livestock</u>		
Breeding fees per cow	\$31	\$32
Veterinary & medicine per cow	\$46	\$54
Other livestock expense per cow	\$85	\$83
Milk marketing per cow	\$121	\$125
Milk marketing per hundredweight milk	\$0.74	\$0.70
<u>Real Estate</u>		
Land, building, & fence repair per cow	\$33	\$44
Taxes per cow	\$57	\$47
Taxes per \$1,000 year-end real estate value	\$20	\$18
Insurance paid per cow	\$36	\$29
Rent paid per cow	\$42	\$52
Rent paid per acre rented	\$34	\$52
Total real estate expense per cow	\$168	\$172
<u>Capital Cost</u>		
Interest paid per cow	\$170	\$154
Interest on equity per cow	\$189	\$184
Interest paid as percent of average debt	8.0%	8.2%
Machinery depreciation as percent of beginning inventory plus purchases	13%	14%
Total depreciation per cow	\$234	\$228
<u>Fixed & Variable Costs*</u>		
Total fixed costs per cow	\$775	\$741
Total variable costs per cow	\$1,547	\$1,689
Variable costs per hundredweight milk sold	\$9.46	\$9.44

*Fixed costs include real estate repairs, taxes, insurance, rent, interest paid, depreciation, unpaid family labor, and interest on equity capital. All other costs were classified as variable.

Fixed costs per cow on the top decile farms were four percent below the 426 farm average. This results from more intensive use and better management of the resources associated with fixed costs. Variable costs were two cents lower per hundredweight of milk sold on the top farms.

Combination of Factors

Several factors representing the cropping program, dairy program, capital and labor efficiency, and cost control have been independently examined in the analysis up to this point. Yet these factors are interrelated. A combination of four important factors representing size, production, labor efficiency, and cost control are studied. The factors combined are cows per farm, pounds of milk sold per cow, pounds of milk sold per worker, and purchased feed and crop expense per hundredweight of milk.

For each factor, the farms were divided on the basis of whether or not they were better than the average for the 426 farms. They were then grouped on the basis of the number of factors better than average. The combination of factors above or below average within the three middle groups varied.

The relationship between the number of factors better than average and net farm income is shown in the table below. As the number of factors better than average decreased, net farm income decreased at a rapid rate.

Table 38. COMBINATION OF FACTORS ABOVE AVERAGE*
AND NET FARM INCOME
426 New York Dairy Farms, 1987

Number of Factors Above Average	Number of Farms	Percent of Farms	Net Farm Income without Appreciation
4 factors better than average	27	6	\$101,956
3 factors better than average	65	15	69,607
2 factors better than average	127	30	32,335
1 factor better than average	144	34	19,241
0 factors better than average	63	15	13,287

*Factors were:

Size - number of cows - average 101.

Rate of production - pounds of milk sold per cow - average 16,351

Labor efficiency - pounds of milk sold per worker - average 516,728

Cost control - purchased feed and crop expense per hundredweight milk - average \$4.11

The 27 farms with four factors better than average had 204 cows, 18,951 pounds of milk sold per cow, 713,947 pounds of milk sold per worker, and \$3.53 per hundredweight purchased feed and crop expense. Net farm income averaged \$101,956 on these farms. Obviously, other business factors excluded from the combination in the above table have a strong affect on business profits. These include labor, machinery and crop expenses, capital efficiency, financial management, crop yields, and the receipts from milk and cattle sales.

It is important in managing a farm business to give attention to all major factors affecting the business. Concentrating on only one or two factors and neglecting the others will not give the kind of net return most farmers want.

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 426 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 39. FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
426 New York Dairy Farms, 1987

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
7.4	288	5,050,360	19,730	4.5	24	49	799,099
4.6	157	2,574,309	18,109	3.7	20	39	639,739
3.7	117	1,895,640	17,473	3.2	18	36	575,793
3.3	96	1,560,906	16,851	3.0	17	32	527,968
2.9	82	1,343,837	16,370	2.7	16	31	486,445

2.6	73	1,140,151	15,925	2.5	15	29	454,799
2.4	64	972,139	15,394	2.3	14	27	424,189
2.1	56	842,732	14,675	2.0	13	25	381,809
1.8	47	709,379	13,608	1.8	12	22	337,608
1.3	35	512,284	11,275	1.3	9	17	251,762

Cost Control					
Grain Bought Per Cow	% Feed is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
\$209	19%	\$220	\$ 524	\$349	\$2.46
312	24	285	631	469	3.11
383	27	320	690	531	3.47
431	29	351	734	573	3.68
468	31	383	778	627	3.93

508	33	415	831	678	4.19
547	35	451	894	711	4.40
595	36	493	953	759	4.70
666	39	549	1,033	823	5.01
769	44	706	1,190	943	5.63

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

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

Table 39 (continued) FARM BUSINESS CHART FOR FARM
MANAGEMENT COOPERATORS
426 New York Dairy Farms, 1987

Milk Receipts Per Cow	Dairy Receipts Per Cwt.	Oper. Cost Milk Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cow	Total Cost Production Per Cwt.
\$2,544	\$14.27	\$ 890	\$ 6.03	\$1,656	\$11.12
2,351	13.56	1,137	7.31	1,893	12.17
2,259	13.18	1,242	8.01	2,006	12.75
2,174	12.97	1,324	8.54	2,101	13.23
2,110	12.81	1,423	9.04	2,190	13.73

2,037	12.72	1,509	9.39	2,289	14.25
1,968	12.61	1,590	9.87	2,390	14.73
1,889	12.51	1,690	10.49	2,470	15.33
1,733	12.36	1,824	11.22	2,607	16.63
1,462	11.96	2,098	13.10	3,024	19.71

Profitability					
Net Farm Income		Return to Operator's Labor, Management, & Equity Capital		Labor & Management Income	
With Appreciation	Without Appreciation	With Appreciation	Without Appreciation	Per Farm	Per Operator
\$197,621	\$136,964	\$196,383	\$136,268	\$95,478	\$71,503
92,938	62,277	91,549	61,167	36,159	28,206
75,433	46,889	74,352	44,671	25,310	20,638
59,966	37,085	58,410	35,784	19,308	14,620
50,071	29,409	48,144	28,474	13,697	9,894

40,312	24,442	38,795	23,170	7,936	6,437
32,360	17,870	30,644	15,931	2,912	2,277
23,593	12,737	21,911	10,230	-3,450	-2,909
16,232	4,764	14,494	2,719	-11,217	-9,828
-3,558	-17,210	-5,512	-18,986	-37,719	-32,962

Farm Business Charts for farms with freestall barns and 120 cows or less and more than 120 cows, and farms with conventional barns with 60 cows or less and more than 60 cows are discussed in the supplemental section on pages 45-49.

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 40.

A FARM FINANCE CHECKLIST
426 New York Dairy Farms, 1987

	Average 426 New York Farms	Average Top 10% Farms*		
<u>How farm assets are being used</u> (average for the year):				
Total assets (capital) per cow	\$5,894	\$5,555		
Farm assets in livestock	21%	22%		
Farm assets in farm real estate	48%	45%		
Farm assets in machinery	18%	16%		
<u>Measures of debt capacity & debt structure:</u>				
Equity in the business	65%	68%		
Farm debt per cow	\$2,046	\$1,797		
Long term debt/asset ratio**	0.40	0.35		
Intermediate & current term debt/asset ratio**	0.30	0.30		
Intermediate & current term debt as % of total	45%	51%		
<u>Debt repayment ability:***</u>				
Cash flow coverage ratio	1.32	1.80		
Debt payments made per cow	\$542	\$563		
Debt payments made as % of milk check	25%	24%		
<u>Indicators of annual financial progress:</u>				
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Annual change in farm assets	+\$32,611	+5.6%	+\$107,771	+8.1%
Annual change in farm debts	-\$2,413	-1.1%	-\$5,886	-1.2%
Annual change in farm net worth	+\$35,023	+9.6%	+\$113,657	+13.1%

*Forty-two farms with highest net farm incomes (without appreciation).

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

***Average of 332 farms (36 farms for top 10 percent) that participated in Summary Program both in 1986 and 1987.

The most profitable farms carried \$249 less debt per cow, had a greater ability to make 1987 debt payments, and equity in their business was three percent more than that of the average.

Average farm assets grew faster than inflation and farm debts declined during 1987 causing average net farm worth to increase nearly 10 percent.

Financial Analysis Chart

The farm financial analysis chart is designed just like the Farm Business Chart on pages 30-31 and may be used to measure the financial health of the farm business. Most of the financial measures used are defined on pages 11, 13, 16, and 26 in this publication.

Table 41. FINANCIAL ANALYSIS CHART
426 New York Dairy Farms, 1987

Liquidity (repayment)				
Debt Payments Per Cow	Available for Debt Service Per Cow	Cash Flow Coverage Ratio	Debt Payments as Percent of Milk Sales	Debt Per Cow
\$ 51	\$937	14.14	2*	\$ 96
210	710	2.18	10	636
303	634	1.63	15	1,137
373	569	1.35	18	1,508
441	520	1.22	21	1,840
500	466	1.06	24	2,199
568	414	0.93	29	2,523
646	340	0.79	33	2,904
808	246	0.57	40	3,407
1,610	72	-0.19	81	4,837

Solvency				Profitability	
Leverage Ratio*	Percent Equity	Debt/Asset Ratio		% Rate of Return on:	
		Current & Intermediate	Long Term	Equity	Investment**
0.02	99	0.00	0.00	35	19
0.13	90	0.05	0.01	17	14
0.25	82	0.12	0.12	12	11
0.36	75	0.18	0.26	9	9
0.48	69	0.24	0.34	7	7
0.63	63	0.31	0.44	5	6
0.82	57	0.37	0.55	3	5
1.05	50	0.43	0.65	1	3
1.50	42	0.50	0.80	-3	1
8.53	22	0.77	1.21	-34	-4

Efficiency (Capital)			
Capital Turnover (years)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow
1.47	\$1,344	\$ 458	\$3,792
1.78	1,938	660	4,577
1.95	2,192	783	5,089
2.07	2,454	915	5,391
2.18	2,632	1,000	5,695
2.31	2,868	1,118	6,070
2.49	3,205	1,247	6,482
2.69	3,640	1,417	7,046
3.04	4,214	1,650	7,888
4.07	6,019	2,191	9,829

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

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

SUPPLEMENTAL INFORMATION

Introduction

Comparisons of business performance for the same farms over time, by herd size and housing, business organization and milking technology, and numerous other factors are contained in this section. Summary data is also presented for dairy-cash crop and dairy-renters in this section. The tables on the following pages are provided for use as a reference, thus, the discussion of each table is at a minimum.

Herd Size Comparisons: A detailed comparison of profitability, financial situation, and business analysis factors across herd sizes is contained in Tables 42 through 44. As herd size increases, the average profitability also increases (Table 42). Net farm income without appreciation was \$208,798 per farm for the 300 or more herd size group and \$11,140 per farm for those with less than 40 cows. This relationship generally holds for all measures of profitability including rate of return on equity capital.

As herd size increases, percent equity generally decreases (Table 43). The most dramatic decline occurs above 100 cows. However, farm net worth increases substantially as herd size increases. The average net worth for all size farms increased during 1987.

Crop yields increased as herd size increased, but fertilizer and lime expenses and machinery cost per tillable acre also increased (Table 44). Milk sold per cow increased as herd size increased, ranging from 15,234 pounds on the farms with less than 40 cows to 18,808 pounds on farms with 300 or more cows. Farm capital per worker increased as herd size increased, while farm capital per cow decreased as herd size increased. Cows per worker increased dramatically as herd size increased, ranging from 22 at the lowest herd size category up to 45 at the largest size category.

Same 242 New York Dairy Farms, 1985, 1986, and 1987: Two hundred and forty-two farms participated in the Dairy Farm Business Summary Project in all three years 1985, 1986, and 1987 (Table 45). Total operating expenses and total accrual expenses, and receipts have been slowly increasing over these years. During this time, average cow numbers increased from 99 in 1985 to 107 in 1987. Most measures of profitability have increased in the same fashion. Net farm income without appreciation increased \$13,726 from 1985 to 1987 on these farms. Labor and management income per farm increased \$11,801 from 1985 to 1987; however, labor and management income per operator decreased \$2,174 from 1986 to 1987.

Pounds of milk sold per cow has increased by 637 pounds or 4.0 percent over the last three-year period. When combined with the increase in cow numbers, the increase in milk sold per cow results in total milk sold per farm increasing by 191,697 pounds. This increase has been achieved by only a small addition to the work force and, thus, pounds of milk sold per worker has increased significantly.

Comparisons 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 used 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. Within each group is a further classification by size of the dairy herd.

Table 46 on page 45 shows the average values for the resulting four groups of dairy farms. Within each housing type, the larger herd size has the highest crop yields and pounds of milk sold per cow. The cost of producing milk was lower on the larger farms and labor efficiency greater. Profitability was also greater on the larger farms within each housing type.

Farm business charts have been computed for each of the four housing and herd size categories. From these charts on pages 46-49 (Tables 47-50) the range in size of business, rates of production, labor efficiency, value and cost of producing milk, and profitability can be observed. The range in every category of business performance is tremendous.

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. Farm managers should remember, however, that their competition is not limited to the other farms in their own barn type and herd size category. They should observe how their management performance compares with farms in other categories as well.

Comparisons by Business Organization: A comparison of profitability, business analysis factors, and financial situation by business organization is contained in Tables 51 and 52. Farms organized as a corporation are larger than partnership-operated farms and more than twice as large as proprietorship-operated farms. Profitability is also greater on corporation organized farms, followed by partnerships and then proprietorships.

Comparison by Milking System: Farms with herringbone parlors had the highest farm capital per worker and the highest cows per worker (Table 53). Farms with herringbone parlors were also larger and had the greatest profitability.

Comparison of Dairy Farm Business Data by Region: Average farm business summary data from four areas or regions of the State are compared in Table 54. The largest average farm size, highest average rates of production, and highest average farm profits came from Region 2.

Ten Year Comparisons: Selected business factors and average data on the cost of producing milk from all specialized dairy farms included in each annual summary from 1978 through 1987 are presented in Tables 55 and 56. This 10 year comparison identifies steady growth in productivity and remarkable cost management as outstanding characteristics on these New York dairy farms.

Other Comparisons: The 14 dairy-cash crop farms had less cows than the 426 specialized dairy farms, but had more crop acres and crop sales and were more profitable (Table 57). A.E. Ext. 87-20 contains detailed information on dairy-cash crop farms for the year 1986. A publication containing 1987 data is forthcoming.

Dairy-renter farms were smaller than the 426 owner-operated farms, and were less profitable than the average specialized dairy farm (Table 58). A.E. Ext. 87-19 contains detailed information on dairy-renters. A publication containing 1987 data is forthcoming.

Data for the top 10 percent of farms by net farm income without appreciation is presented in Table 59. Summary data for the 426 specialized dairy farms is presented for the farm in Table 60 and on a per cow basis in Table 61.

Table 42.

FARM BUSINESS SUMMARY BY HERD SIZE
426 New York Dairy Farms, 1987

Item	Farm Size:	Less than 40 Cows	40 to 54 Cows	55 to 69 Cows	70 to 84 Cows	85 to 99 Cows
Number of farms		32	69	74	71	41
<u>ACCRUAL EXPENSES</u>						
Hired labor		\$ 2,757	\$ 5,999	\$ 11,494	\$ 15,070	\$ 18,684
Dairy grain & concentrate		17,025	22,287	29,046	37,345	42,482
Dairy roughage		933	1,098	954	1,427	624
Other livestock feed		444	358	696	686	1,063
Machine hire/rent/lease		1,163	817	1,632	1,720	2,416
Machine repairs/parts		3,091	5,150	6,947	8,775	11,089
Auto expense (farm share)		302	556	740	655	686
Fuel, oil & grease		1,653	2,204	3,539	3,995	5,046
Replacement livestock		2,470	988	1,930	1,753	1,858
Breeding		1,081	1,535	2,029	2,576	2,647
Veterinary & medicine		1,280	1,663	2,759	3,420	3,466
Milk marketing		4,718	6,109	7,384	9,569	9,458
Cattle lease/rent		14	46	37	175	109
Other livestock expense		2,503	4,154	5,310	6,835	7,604
Fertilizer & lime		2,070	3,431	4,903	6,178	8,386
Seeds & plants		728	1,218	2,053	2,522	2,898
Spray & other crop expense		521	942	1,801	1,939	2,738
Land/building/fence repair		803	1,075	1,988	2,025	2,752
Taxes & insurance		3,729	4,746	7,161	7,526	9,326
Telephone & electricity		2,724	3,329	4,399	5,311	5,812
Interest paid		5,878	9,279	9,839	12,703	15,433
Misc. (including rent)		2,030	2,846	4,403	5,395	6,403
Total Operating Expenses		<u>\$57,917</u>	<u>\$ 79,830</u>	<u>\$111,044</u>	<u>\$137,600</u>	<u>\$160,980</u>
Expansion livestock		154	750	1,145	1,101	196
Machinery depreciation		4,540	6,811	9,935	13,227	13,545
Building depreciation		2,612	3,154	5,331	5,305	6,692
Total Accrual Expenses		<u>\$65,223</u>	<u>\$ 90,545</u>	<u>\$127,455</u>	<u>\$157,233</u>	<u>\$181,413</u>
<u>ACCRUAL RECEIPTS</u>						
Milk sales		\$65,663	\$ 93,254	\$125,036	\$157,419	\$185,624
Dairy cattle		6,599	7,778	8,596	13,744	15,933
Dairy calves		1,217	1,651	2,086	2,608	2,914
Other livestock		605	131	317	338	153
Crops		900	713	3,183	2,440	4,441
Misc. receipts		1,380	2,564	5,336	6,708	7,118
Total Accrual Receipts		<u>\$76,363</u>	<u>\$106,091</u>	<u>\$144,554</u>	<u>\$183,257</u>	<u>\$216,186</u>
<u>PROFITABILITY ANALYSIS</u>						
Net farm income (w/o apprec.)		\$11,140	\$15,546	\$17,099	\$26,024	\$34,773
Net farm income (w/apprec.)		\$21,927	\$30,098	\$31,811	\$44,375	\$55,411
Labor & mgmt. income		\$1,277	\$5,093	\$1,771	\$8,413	\$16,249
Number of operators		1.04	1.15	1.30	1.28	1.25
Labor & mgmt. inc./oper.		\$1,228	\$4,429	\$1,362	\$6,573	\$12,999
Rates of return on:						
Equity capital w/o apprec.		-4.6%	-3.2%	-2.8%	0.4%	2.5%
Equity capital w/apprec.		1.8%	5.3%	2.4%	6.3%	8.8%
All capital w/o apprec.		-0.8%	1.3%	0.5%	2.9%	4.6%
All capital w/apprec.		3.7%	6.2%	4.1%	6.8%	8.5%

Table 42 (continued) FARM BUSINESS SUMMARY BY HERD SIZE
426 New York Dairy Farms, 1987

Item	Farm Size:	100 to 149 Cows	150 to 199 Cows	200 to 299 Cows	300 or More Cows
Number of farms		70	31	27	11
<u>ACCRUAL EXPENSES</u>					
Hired labor		\$ 25,102	\$ 47,877	\$ 75,549	\$ 179,681
Dairy grain & concentrate		56,974	86,662	133,931	257,093
Dairy roughage		801	1,387	6,292	21,695
Other livestock feed		616	2,337	1,925	1,356
Machine hire/rent/lease		2,516	3,678	6,636	9,670
Machine repairs/parts		15,054	24,145	31,332	43,448
Auto expense (farm share)		668	610	656	2,512
Fuel, oil & grease		6,981	12,430	14,265	20,939
Replacement livestock		1,519	4,468	6,034	1,248
Breeding		3,546	5,002	7,259	12,662
Veterinary & medicine		4,968	7,667	12,604	26,205
Milk marketing		14,281	21,327	28,600	52,360
Cattle lease/rent		14	814	0	557
Other livestock expense		9,821	13,907	21,022	37,220
Fertilizer & lime		10,411	14,729	20,450	29,461
Seeds & plants		4,520	6,186	8,655	15,239
Spray & other crop expense		4,299	5,252	7,839	18,550
Land/building/fence repair		3,890	5,188	6,828	25,692
Taxes & insurance		10,856	15,566	19,405	28,402
Telephone & electricity		7,238	10,360	13,821	20,876
Interest paid		18,586	29,497	42,206	77,461
Misc. (including rent)		8,560	12,652	20,694	34,966
Total Operating Expenses		\$211,221	\$331,741	\$486,003	\$ 917,293
Expansion livestock		2,114	2,976	3,044	16,232
Machinery depreciation		19,857	28,073	31,247	58,995
Building depreciation		9,604	13,753	21,805	37,605
Total Accrual Expenses		\$242,796	\$376,543	\$542,099	\$1,030,125
<u>ACCRUAL RECEIPTS</u>					
Milk sales		\$246,068	\$361,325	\$521,194	\$1,045,845
Dairy cattle		20,536	34,740	48,174	94,637
Dairy calves		3,653	5,566	8,117	15,121
Other livestock		266	435	4,624	166
Crops		4,088	5,451	16,749	43,415
Misc. receipts		9,593	21,616	24,655	39,740
Total Accrual Receipts		\$284,207	\$429,132	\$623,513	\$1,238,923
<u>PROFITABILITY ANALYSIS</u>					
Net farm income (w/o apprec.)		\$41,411	\$52,589	\$81,414	\$208,798
Net farm income (w/apprec.)		\$64,485	\$107,614	\$119,890	\$280,560
Labor & mgmt. income		\$15,647	\$19,218	\$43,070	\$142,561
Number of operators		1.49	1.57	1.54	1.43
Labor & mgmt. inc./oper.		\$10,501	\$12,241	\$27,968	\$99,693
Rate of return on:					
Equity capital w/o apprec.		1.7%	2.8%	6.2%	12.7%
Equity capital w/apprec.		6.5%	11.4%	11.3%	18.2%
All capital w/o apprec.		3.8%	4.7%	7.0%	10.7%
All capital w/apprec.		7.0%	10.2%	10.1%	13.9%

Table 43. FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
426 New York Dairy Farms, 1987

Item	Farms with: <u>Less than 40 Cows</u>		<u>40 to 54 Cows</u>		<u>55 to 69 Cows</u>	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS						
Farm cash/chkg./sav.	\$ 2,988	\$ 3,087	\$ 1,764	\$ 2,431	\$ 4,560	\$ 4,362
Accounts receivable	5,451	5,782	7,596	7,669	10,917	11,287
Prepaid expenses	0	0	6	6	14	14
Feed & supplies	11,161	12,245	17,453	18,024	24,803	26,963
Livestock*	39,311	42,463	52,858	59,009	74,084	78,802
Machinery & equipment*	37,645	38,853	52,278	55,305	75,451	78,455
FLB & PCA stock	683	751	1,612	1,731	2,532	2,525
Other stock & cert.	1,225	1,381	1,707	1,888	2,681	2,701
Land & buildings*	<u>137,681</u>	<u>141,005</u>	<u>153,697</u>	<u>158,724</u>	<u>197,233</u>	<u>205,744</u>
Total Farm Assets	\$236,145	\$245,567	\$288,971	\$304,788	\$392,275	\$410,853
Pers. cash/chkg./sav.	\$ 8,935	\$ 1,907	\$ 3,309	\$ 3,032	\$ 6,011	\$ 6,580
Cash value of life ins.	1,418	1,567	2,451	3,119	4,122	4,609
Nonfarm real estate	24,316	32,211	4,601	7,939	23,463	31,488
Auto (personal share)	1,195	1,032	3,163	3,329	2,479	3,090
Stocks & bonds	637	2,831	2,380	2,405	2,959	3,146
Household furnishings	7,684	7,737	8,744	8,750	6,923	7,345
All other	<u>34</u>	<u>5,327</u>	<u>2,955</u>	<u>3,082</u>	<u>1,872</u>	<u>888</u>
Tot. Nonfarm Assets**	\$ 44,219	\$ 52,611	\$ 27,603	\$ 31,656	\$ 47,830	\$ 57,145
Total Farm & Nonfarm Assets	\$280,364	\$298,178	\$316,574	\$336,444	\$440,105	\$467,998
LIABILITIES						
Accounts payable	\$ 1,797	\$ 1,539	\$ 4,395	\$ 4,184	\$ 3,355	\$ 3,693
Operating debt	1,071	687	1,023	1,014	1,080	819
Short term	213	543	1,079	1,030	2,387	1,837
Advanced gov't. rec.	0	0	0	53	52	200
Intermediate***	22,548	22,764	42,818	43,905	42,814	43,353
Long term*	<u>48,256</u>	<u>43,842</u>	<u>77,121</u>	<u>75,139</u>	<u>69,963</u>	<u>72,453</u>
Total Farm Liab.	\$ 73,885	\$ 69,374	\$126,435	\$125,325	\$119,651	\$122,354
Tot. Nonfarm Liab.**	<u>342</u>	<u>86</u>	<u>1,539</u>	<u>2,235</u>	<u>3,078</u>	<u>2,809</u>
Total Farm & Nonfarm Liabilities	\$ 74,227	\$ 69,460	\$127,974	\$127,560	\$122,729	\$125,163
Farm Net Worth (Equity Capital)	\$162,261	\$176,193	\$162,536	\$179,463	\$272,624	\$288,499
Farm & Nonfarm Net Worth	\$206,137	\$228,718	\$188,600	\$208,884	\$317,376	\$342,835
FINANCIAL MEASURES						
Percent equity			72%	59%	70%	
Debt/asset ratio-long term			0.31	0.47	0.35	
Debt/asset ratio-inter. & current			0.24	0.34	0.24	
Change in net worth with apprec.		\$13,932		\$16,927		\$15,875
Total farm debt per cow		\$1,982		\$2,558		\$1,912
Debt payments made per cow		\$653		\$619		\$502
Debt payments as % of milk sales		33%		30%		24%
Amount avail. for debt service		\$19,356		\$25,901		\$31,362
Cash flow coverage ratio for 1987		1.31		1.30		1.29

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1987.

***Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

Table 43 (cont'd) FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
426 New York Dairy Farms, 1987

Item	Farms with:	70 to 84 Cows		85 to 99 Cows	
		Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS					
Farm cash/chkg./savings		\$ 3,853	\$ 4,783	\$ 5,165	\$ 6,842
Accounts receivable		13,616	14,094	15,956	16,322
Prepaid expenses		0	0	42	42
Feed & supplies		32,595	33,144	39,290	43,702
Livestock*		91,006	98,832	104,319	114,263
Machinery & equipment*		92,636	96,188	102,537	109,990
FLB & PCA stock		3,794	3,942	3,517	3,630
Other stock & cert.		4,770	5,317	4,175	3,941
Land & buildings*		<u>226,609</u>	<u>231,725</u>	<u>228,748</u>	<u>238,936</u>
Total Farm Assets		\$468,878	\$488,025	\$503,750	\$537,668
Pers. cash/chkg./savings		\$ 14,048	\$ 15,373	\$ 18,808	\$ 15,424
Cash value of life ins.		2,610	2,878	2,534	4,301
Nonfarm real estate		10,708	11,670	17,682	27,750
Auto (personal share)		2,746	3,707	1,864	2,545
Stocks & bonds		1,798	2,060	5,034	5,225
Household furnishings		6,085	6,508	7,455	7,682
All other		<u>1,778</u>	<u>1,819</u>	<u>6,685</u>	<u>5,568</u>
Total Nonfarm Assets**		\$ 39,773	\$ 44,014	\$ 60,062	\$ 68,495
Total Farm & Nonfarm Assets		\$508,651	\$532,039	\$563,812	\$606,163
LIABILITIES					
Accounts payable		\$ 5,626	\$ 6,299	\$ 4,327	\$ 4,632
Operating debt		1,414	1,044	3,546	2,551
Short term		1,997	2,357	2,341	1,896
Advanced gov't. rec.		0	131	0	0
Intermediate***		57,651	58,466	86,091	83,656
Long term*		<u>100,481</u>	<u>95,358</u>	<u>96,662</u>	<u>94,019</u>
Total Farm Liab.		\$167,170	\$163,655	\$192,968	\$186,754
Total Nonfarm Liab.**		<u>2,231</u>	<u>2,193</u>	<u>0</u>	<u>0</u>
Total Farm & Nonfarm Liabilities		\$169,401	\$165,848	\$192,968	\$186,754
Farm Net Worth (Equity Capital)		\$301,709	\$324,369	\$310,782	\$350,913
Farm & Nonfarm Net Worth		\$339,250	\$366,191	\$370,844	\$419,409
FINANCIAL MEASURES					
		70 to 84 Cows		85 to 99 Cows	
Percent equity		66%		65%	
Debt/asset ratio-long term		0.41		0.39	
Debt/asset ratio-inter. & current		0.27		0.31	
Change in net worth with apprec.		\$22,661		\$40,132	
Total farm debt per cow		\$2,072		\$2,008	
Debt payments made per cow		\$573		\$596	
Debt payments as % of milk sales		28%		28%	
Amount avail. for debt service		\$38,245		\$51,041	
Cash flow coverage ratio for 1987		1.28		1.41	

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1987.

***Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

Table 43 (cont'd) FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
426 New York Dairy Farms, 1987

Item	Farms with:		150 to 199 Cows	
	100 to 149 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash/chkg./savings	\$ 8,425	\$ 11,325	\$ 4,975	\$ 8,211
Accounts receivable	20,959	21,796	32,791	34,990
Prepaid expenses	49	49	27	46
Feed & supplies	52,784	56,272	78,542	78,949
Livestock*	142,344	154,411	201,180	220,938
Machinery & equipment*	132,545	139,451	167,023	177,120
FLB & PCA stock	6,788	6,712	10,338	10,276
Other stock & cert.	6,087	6,881	14,209	15,368
Land & buildings*	<u>326,668</u>	<u>334,553</u>	<u>464,613</u>	<u>490,415</u>
Total Farm Assets	\$696,649	\$731,449	\$ 973,698	\$1,036,313
Pers. cash/chkg./savings	\$ 4,243	\$ 5,803	\$ 5,855	\$ 5,683
Cash value of life ins.	4,205	5,000	8,453	8,611
Nonfarm real estate	45,880	59,987	49,118	67,059
Auto (personal share)	1,985	1,942	2,518	2,359
Stocks & bonds	3,932	3,502	13,108	15,000
Household furnishings	6,500	6,571	10,588	10,912
All other	<u>3,629</u>	<u>3,138</u>	<u>8,266</u>	<u>21,494</u>
Total Nonfarm Assets**	\$ 70,374	\$ 85,943	\$ 97,905	\$ 131,117
Total Farm & Nonfarm Assets	\$767,023	\$817,392	\$1,071,603	\$1,167,430
LIABILITIES				
Accounts payable	\$ 4,154	\$ 3,625	\$ 5,559	\$ 6,350
Operating debt	1,875	3,241	5,535	5,074
Short term	2,719	3,074	5,515	4,782
Advanced gov't. rec.	0	0	0	558
Intermediate***	92,101	88,843	138,604	143,167
Long term*	<u>130,697</u>	<u>130,718</u>	<u>213,633</u>	<u>200,919</u>
Total Farm Liab.	\$231,546	\$229,501	\$ 368,847	\$ 360,850
Total Nonfarm Liab.**	<u>2,230</u>	<u>1,967</u>	<u>1,707</u>	<u>1,843</u>
Total Farm & Nonfarm Liabilities	\$233,776	\$231,468	\$ 370,554	\$ 362,693
Farm Net Worth (Equity Capital)	\$465,103	\$501,948	\$ 604,850	\$ 675,463
Farm & Nonfarm Net Worth	\$533,247	\$585,924	\$ 701,049	\$ 804,737
FINANCIAL MEASURES				
	100 to 149 Cows		150 to 199 Cows	
Percent equity	69%		65%	
Debt/asset ratio-long term	0.39		0.41	
Debt/asset ratio-inter. & current	0.25		0.29	
Change in net worth with apprec.	\$36,845		\$70,613	
Total farm debt per cow	\$1,897		\$2,027	
Debt payments made per cow	\$512		\$530	
Debt payments as % of milk sales	24%		25%	
Amount avail. for debt service	\$62,095		\$90,571	
Cash flow coverage ratio for 1987	1.26		1.35	

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1987.

***Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

Table 43 (cont'd) FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
426 New York Dairy Farms, 1987

Item	Farms with:		More than 300 Cows	
	200 to 299 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash/chkg./savings	\$ 5,533	\$ 6,331	\$ 5,013	\$ 11,348
Accounts receivable	46,864	48,027	86,323	83,269
Prepaid expenses	0	0	2,156	3,570
Feed & supplies	98,091	112,705	225,951	275,171
Livestock*	284,010	302,384	461,034	511,184
Machinery & equipment*	191,392	200,085	321,564	334,952
FLB & PCA stock	14,980	15,096	15,414	15,132
Other stock & cert.	30,591	31,973	60,604	66,876
Land & buildings*	<u>554,758</u>	<u>572,889</u>	<u>992,505</u>	<u>1,077,050</u>
Total Farm Assets	\$1,226,219	\$1,289,490	\$2,170,564	\$2,378,552
Pers. cash/chkg./savings	\$ 5,556	\$ 5,662	\$ 1,981	\$ 2,020
Cash value of life ins.	5,206	5,806	1,450	1,814
Nonfarm real estate	9,188	22,063	13,250	32,000
Auto (personal share)	3,969	3,563	500	3,669
Stocks & bonds	7,664	9,351	17,498	20,591
Household furnishings	8,000	9,000	4,500	8,250
All other	<u>18,165</u>	<u>15,798</u>	<u>13,363</u>	<u>17,399</u>
Total Nonfarm Assets**	\$ 57,748	\$ 71,243	\$ 52,541	\$ 85,743
Total Farm & Nonfarm Assets	\$1,283,967	\$1,360,733	\$2,223,105	\$2,464,295
LIABILITIES				
Accounts payable	\$ 17,018	\$ 15,638	\$ 25,541	\$ 11,155
Operating debt	7,171	9,605	59,452	78,052
Short term	16,151	15,277	36,860	15,320
Advanced gov't. rec.	0	258	0	0
Intermediate***	220,564	226,605	351,692	374,108
Long term*	<u>247,034</u>	<u>233,601</u>	<u>490,540</u>	<u>492,358</u>
Total Farm Liab.	\$ 507,938	\$ 500,985	\$ 964,085	\$ 970,992
Total Nonfarm Liab.**	<u>7,402</u>	<u>5,466</u>	<u>0</u>	<u>0</u>
Total Farm & Nonfarm Liabilities	\$ 515,340	\$ 506,451	\$ 964,085	\$ 970,992
Farm Net Worth (Equity Capital)	\$ 718,281	\$ 788,505	\$1,206,479	\$1,407,560
Farm & Nonfarm Net Worth	\$ 768,627	\$ 854,282	\$1,259,020	\$1,493,303
FINANCIAL MEASURES				
	200 to 299 Cows		More than 300 Cows	
Percent equity	61%		59%	
Debt/asset ratio-long term	0.41		0.46	
Debt/asset ratio-inter. & current	0.37		0.37	
Change in net worth with apprec.	\$70,224		\$201,081	
Total farm debt per cow	\$2,053		\$2,167	
Debt payments made per cow	\$531		\$644	
Debt payments as % of milk sales	24%		27%	
Amount avail. for debt service	\$129,196		\$273,984	
Cash flow coverage ratio for 1987	1.31		1.51	

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1987.

***Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

Table 44. SELECTED BUSINESS FACTORS BY HERD SIZE
426 New York Dairy Farms, 1987

Item	Farms with: 40 Cows	Less than 40 to 54 Cows	40 to 55 to 69 Cows	55 to 70 to 84 Cows	70 to 85 to 99 Cows
Number of farms	32	69	74	71	41
<u>Cropping Program Analysis</u>					
Total Tillable acres	108	156	224	256	316
Tillable acres rented*	22	51	71	81	105
Hay crop acres*	71	96	126	136	173
Corn silage acres*	15	27	35	47	56
Hay crop, tons DM/acre	2.1	2.3	2.6	2.6	2.4
Corn silage, tons/acre	12.7	14.5	14.4	15.1	15.4
Oats, bushels/acre	35.5	49.4	60.5	56.7	50.0
Forage DM per cow, tons	6.3	7.7	8.1	8.0	7.8
Tillable acres/cow	3.2	3.3	3.6	3.4	3.5
Fert. & lime exp./til. acre	\$19.21	\$21.94	\$21.92	\$24.11	\$26.57
Total machinery costs	\$12,615	\$18,201	\$26,607	\$33,050	\$38,073
Machinery cost/tillable acre	\$117	\$116	\$119	\$129	\$121
<u>Dairy Analysis</u>					
Number of cows	33	47	62	77	90
Number of heifers	22	36	49	63	73
Milk sold, lbs.	509,393	727,966	976,763	1,223,662	1,456,641
Milk sold/cow, lbs.	15,234	15,380	15,816	15,982	16,098
Operating cost of prod. milk/cwt.	\$9.30	\$9.31	\$9.49	\$9.22	\$8.97
Total cost of prod. milk/cwt.	\$16.08	\$14.74	\$15.05	\$14.04	\$13.30
Price/cwt. milk sold	\$12.89	\$12.81	\$12.80	\$12.86	\$12.74
Purchased dairy feed/cow	\$537	\$494	\$486	\$506	\$476
Purchased dairy feed/cwt. milk	\$3.53	\$3.21	\$3.07	\$3.17	\$2.96
Purchased grain & conc. as % of milk receipts	26*	24*	23*	24*	23*
Purchased feed & crop expense/cwt. milk	\$4.18	\$3.98	\$3.97	\$4.04	\$3.92
<u>Capital Efficiency</u>					
Farm capital/worker	\$155,705	\$154,213	\$163,199	\$170,205	\$173,452
Farm capital/cow	7,203	6,272	6,502	6,249	5,754
Farm capital/til. acre owned	2,801	2,801	2,625	2,718	2,468
Real estate/cow	4,167	3,300	3,263	2,993	2,584
Machinery investment/cow	1,144	1,136	1,246	1,233	1,174
Capital turnover, years	2.76	2.46	2.52	2.37	2.20
<u>Labor Efficiency</u>					
Worker equivalent	1.55	1.93	2.46	2.81	3.00
Operator/manager equivalent	1.04	1.15	1.30	1.28	1.25
Milk sold/worker, lbs.	329,305	378,140	396,964	435,307	485,218
Cows/worker	22	25	25	27	30
Work units/worker	222	258	273	290	323
Labor cost/cow	\$462	\$431	\$436	\$404	\$378
Labor cost/tillable acre	\$143	\$131	\$120	\$121	\$108

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

Table 44 (continued) SELECTED BUSINESS FACTORS BY HERD SIZE
426 New York Dairy Farms, 1987

Item	Farms with: 149 Cows	100 to 199 Cows	150 to 299 Cows	200 to 300 or More Cows
Number of farms	70	31	27	11
<u>Cropping Program Analysis</u>				
Total tillable acres	360	524	612	924
Tillable acres rented*	127	240	218	291
Hay crop acres*	190	229	235	302
Corn silage acres*	76	122	187	339
Hay crop, tons DM/acre	2.8	3.0	3.0	3.5
Corn silage, tons/acre	17.2	15.8	17.4	17.6
Oats, bushels/acre	63.6	55.3	52.8	0.0
Forage DM per cow, tons	8.2	7.9	7.7	7.1
Tillable acres/cow	3.0	3.1	2.5	2.1
Fert. & lime exp./til. acre	\$28.94	\$28.09	\$33.44	\$31.89
Total machinery costs	\$51,831	\$77,405	\$93,784	\$151,843
Machinery cost/tillable acre	\$144	\$148	\$153	\$164
<u>Dairy Analysis</u>				
Number of cows	119	171	241	436
Number of heifers	96	136	183	329
Milk sold, lbs.	1,894,774	2,773,091	4,023,474	8,195,157
Milk sold/cow, lbs.	15,915	16,217	16,710	18,808
Operating cost of prod. milk/cwt.	\$9.25	\$9.62	\$9.61	\$9.04
Total cost of prod. milk/cwt.	\$13.83	\$13.55	\$12.74	\$11.53
Price/cwt. milk sold	\$12.99	\$13.03	\$12.95	\$12.76
Purchased dairy feed/cow	\$485	\$515	\$582	\$640
Purchased dairy feed/cwt. milk	\$3.05	\$3.18	\$3.49	\$3.40
Purchased grain & conc. as % of milk receipts	23%	24%	26%	25%
Purchased feed & crop expense/cwt. milk	\$4.06	\$4.12	\$4.40	\$4.17
<u>Capital Efficiency</u>				
Farm capital/worker	\$201,546	\$212,060	\$197,933	\$234,931
Farm capital/cow	5,998	5,877	5,224	5,220
Farm capital/til. acre owned	3,065	3,539	3,193	3,593
Real estate/cow	2,777	2,792	2,342	2,375
Machinery investment/cow	1,142	1,006	813	753
Capital turnover, years	2.32	2.08	1.90	1.74
<u>Labor Efficiency</u>				
Worker equivalent	3.54	4.74	6.35	9.68
Operator/manager equivalent	1.49	1.57	1.54	1.43
Milk sold/worker, lbs.	534,815	585,133	633,126	846,448
Cows/worker	34	36	38	45
Work units/worker	352	375	384	443
Labor cost/cow	\$360	\$388	\$386	\$450
Labor cost/tillable acre	\$119	\$126	\$152	\$212

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

Table 45. COMPARISON OF FARM BUSINESS SUMMARIES FOR 1985,
1986, AND 1987
Same 242 New York Dairy Farms

Item	1985	1986	1987
<u>ACCRUAL EXPENSES</u>			
Hired labor	\$ 22,908	\$ 24,584	\$ 27,785
Feed	47,306	52,424	57,711
Machinery	20,583	19,380	22,034
Livestock	29,553	33,007	33,096
Crops	18,097	15,509	16,153
Real estate	15,459	15,618	17,590
Other	<u>27,989</u>	<u>27,781</u>	<u>27,393</u>
Total Operating	\$181,895	\$188,303	\$201,762
Expansion livestock	2,134	1,453	1,602
Machinery depreciation	17,289	17,158	16,366
Building depreciation	<u>9,157</u>	<u>8,934</u>	<u>9,078</u>
Total Accrual Expenses	\$210,475	\$215,848	\$228,808
<u>ACCRUAL RECEIPTS</u>			
Milk sales	\$204,231	\$214,284	\$228,234
Livestock	21,075	20,233	23,961
Crops	4,059	2,447	6,352
All other	<u>7,432</u>	<u>7,196</u>	<u>10,309</u>
Total Accrual Receipts	\$236,797	\$244,160	\$268,856
<u>PROFITABILITY ANALYSIS</u>			
Net farm income (without appreciation)	\$26,322	\$28,312	\$40,048
Net farm income (with appreciation)	\$24,540	\$44,222	\$65,898
Labor & management income	\$6,329	\$7,918	\$18,130
Number of operators	1.33	1.34	1.32
Labor & management income per operator	\$4,759	\$5,909	\$3,735
<u>BUSINESS FACTORS</u>			
Worker equivalent	3.23	3.27	3.32
Number of cows	99	103	107
Number of heifers	82	85	84
Acres of hay crops*	146	153	153
Acres of corn silage*	77	74	70
Total tillable acres	306	310	315
Pounds of milk sold	1,577,890	1,685,268	1,769,587
Pounds of milk sold per cow	15,955	16,303	16,592
Tons hay crop dry matter per acre	2.7	2.8	2.7
Tons corn silage per acre	15	14	16
Cows per worker	31	32	32
Pounds of milk sold per worker	488,246	515,703	532,361
Percent grain & conc. is of milk receipts	22%	23%	24%
Feed & crop expense per cwt. milk	\$4.08	\$3.97	\$4.12
Fertilizer & lime per crop acre	\$33.93	\$26.93	\$27.82
Machinery cost per tillable acre	\$141	\$135	\$140
Average price per cwt. milk	\$12.94	\$12.72	\$12.90

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

Table 46. SELECTED BUSINESS FACTORS BY TYPE OF BARN
AND HERD SIZE
426 New York Dairy Farms, 1987

Item	Farms with:		Freestall	
	Conventional ≤60 Cows	>60 Cows	≤120 Cows	>120 Cows
Number of farms	117	151	72	86
<u>Cropping Program Analysis</u>				
Total Tillable acres	152	298	265	560
Tillable acres rented*	44	104	89	206
Hay crop acres*	93	167	138	221
Corn silage acres*	25	52	55	159
Hay crop, tons DM/acre	2.3	2.6	2.6	3.1
Corn silage, tons/acre	14.5	15.5	15.7	17.1
Oats, bushels/acre	52.7	59.8	52.1	51.1
Forage DM per cow, tons	7.5	8.2	8.0	7.6
Tillable acres/cow	3.4	3.4	3.2	2.6
Fert. & lime exp./til. acre	\$21.10	\$23.60	\$28.16	\$31.88
Total machinery costs	\$17,902	\$35,641	\$38,982	\$87,013
Machinery cost/tillable acre	\$118	\$120	\$147	\$155
<u>Dairy Analysis</u>				
Number of cows	45	88	83	213
Number of heifers	33	70	68	167
Milk sold, lbs.	701,939	1,404,638	1,336,813	3,631,580
Milk sold/cow, lbs.	15,446	15,949	16,026	17,012
Operating cost of prod. milk/cwt.	\$9.34	\$9.19	\$9.38	\$9.40
Total cost of prod. milk/cwt.	\$15.12	\$13.76	\$14.31	\$12.77
Price/cwt. milk sold	\$12.82	\$12.78	\$13.04	\$12.93
Purchased dairy feed/cow	\$507	\$496	\$498	\$559
Purchased dairy feed/cwt. milk	\$3.28	\$3.11	\$3.11	\$3.29
Purc. grain & conc. as % milk rec.	24*	24*	23*	24*
Purc. feed & crop exp./cwt. milk	\$4.05	\$3.99	\$4.09	\$4.21
<u>Capital Efficiency</u>				
Farm capital/worker	\$154,317	\$174,550	\$185,631	\$212,849
Farm capital/cow	\$6,467	\$6,056	\$6,166	\$5,522
Farm capital/til. acre owned	\$2,721	\$2,735	\$2,922	\$3,330
Real estate/cow	\$3,436	\$2,910	\$2,858	\$2,528
Machinery investment/cow	\$1,156	\$1,137	\$1,236	\$913
Capital turnover, years	2.51	2.34	2.34	1.96
<u>Labor Efficiency</u>				
Worker equivalent	1.90	3.06	2.77	5.54
Operator/manager equivalent	1.14	1.33	1.41	1.48
Milk sold/worker, lbs.	368,557	459,672	482,459	655,667
Cows/worker	24	29	30	39
Work units/worker	248	308	318	393
Labor cost/cow	\$432	\$388	\$393	\$403
Labor cost/tillable acre	\$129	\$115	\$124	\$154
<u>Profitability & Balance Sheet Analysis</u>				
Net farm income (w/o apprec.)	\$14,305	\$31,007	\$27,432	\$77,458
Labor & mgmt. income/operator	\$2,778	\$8,414	\$6,525	\$27,394
Farm debt/cow	\$2,216	\$1,901	\$2,102	\$2,098
Percent equity	65%	69%	66%	62%

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

Table 47. FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARM
117 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1987

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
3.1	58	1,012,310	18,894	4.1	25	38	593,294
2.5	55	890,128	17,803	3.2	20	32	508,786
2.3	53	841,029	17,100	2.9	18	29	443,085
2.1	50	777,411	16,529	2.6	16	27	424,821
2.0	48	747,174	16,027	2.4	15	26	401,656

1.8	46	684,453	15,530	2.2	14	24	375,007
1.6	43	648,948	14,825	2.0	13	23	344,267
1.5	39	587,566	14,114	1.8	12	21	324,239
1.3	35	515,571	12,986	1.6	11	19	281,813
1.1	29	367,936	10,705	1.2	8	15	205,714

Cost Control

Grain Bought Per Cow	% Feed is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
\$239	20%	\$185	\$ 531	\$329	\$2.57
325	25	256	627	457	3.21
383	27	300	687	511	3.52
430	29	335	732	552	3.64
464	30	367	786	590	3.84

497	32	398	851	646	4.07
546	34	437	921	699	4.31
589	37	475	974	740	4.77
666	39	549	1,057	819	5.11
756	44	640	1,159	953	5.55

Value and Cost of Production

Profitability

Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income		Labor & Mgmt. Income	
			With Apprec.	Without Apprec.	Per Farm	Per Oper.
\$2,512	\$ 5.84	\$11.72	\$74,553	\$39,463	\$25,389	\$22,783
2,298	6.83	13.04	48,887	29,518	19,481	17,388
2,208	7.67	13.54	38,477	26,217	13,599	11,512
2,129	8.33	14.12	34,212	21,938	9,849	8,406
2,062	8.89	14.64	30,235	15,948	6,294	5,676

1,969	9.31	15.12	23,800	14,364	2,907	2,572
1,887	10.01	15.82	19,827	10,674	568	508
1,774	10.80	16.97	15,627	4,889	-3,763	-3,179
1,637	11.64	18.11	8,111	-1,628	-10,700	-9,683
1,350	13.39	20.88	-4,719	-14,006	-27,903	-26,962

Table 48. FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
151 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1987

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
5.6	163	2,674,310	19,172	4.5	22	44	673,277
3.9	112	1,819,161	17,935	3.7	19	37	603,935
3.5	94	1,583,874	17,322	3.2	18	34	555,170
3.1	87	1,425,022	16,735	3.0	17	32	517,283
3.0	82	1,318,364	16,412	2.6	16	30	484,731

2.6	77	1,235,135	16,146	2.5	15	29	463,541
2.5	73	1,145,273	15,545	2.2	14	27	436,780
2.4	69	1,058,575	14,696	2.0	13	25	393,204
2.2	65	969,689	13,740	1.7	12	23	349,386
1.8	61	853,701	11,741	1.4	10	18	271,522

Cost Control

Grain Bought Per Cow	% Feed is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
\$202	18%	\$220	\$ 506	\$341	\$2.34
295	24	281	605	460	3.03
369	27	313	669	523	3.46
418	29	350	723	573	3.68
455	31	377	760	621	3.92

510	32	407	797	670	4.16
548	34	445	863	694	4.34
591	36	478	938	740	4.54
656	37	532	1,015	798	4.84
754	42	677	1,164	893	5.31

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income		Labor & Mgmt. Income	
			With Apprec.	Without Apprec.	Per Farm	Per Oper.
\$2,452	\$ 6.24	\$11.00	\$110,663	\$78,030	\$54,066	\$41,523
2,323	7.28	11.99	80,747	55,205	34,079	29,685
2,216	7.92	12.47	69,626	46,659	27,268	23,376
2,138	8.35	12.91	58,272	41,337	22,167	16,361
2,092	8.74	13.42	50,783	34,419	16,612	11,210

2,033	9.21	14.00	43,296	27,185	9,802	7,495
1,962	9.65	14.49	35,577	21,584	2,691	1,833
1,902	10.19	14.99	27,732	14,827	-4,619	-3,704
1,750	10.87	15.90	19,127	8,686	-10,022	-8,233
1,517	12.97	19.22	-2,597	-14,835	-36,963	-33,558

Table 49. FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
72 Freestall Barn Dairy Farms with 120 or Less Cows, New York, 1987

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
4.0	113	2,031,232	19,930	4.5	28	49	779,317
3.4	107	1,778,804	18,585	3.6	20	41	631,701
3.2	101	1,597,490	18,005	3.2	19	34	547,217
3.0	95	1,548,436	17,433	3.0	18	32	503,134
2.9	87	1,460,707	16,469	2.7	17	30	486,247

2.7	81	1,360,485	15,965	2.5	16	29	463,207
2.5	76	1,188,903	15,526	2.3	15	27	443,127
2.3	72	1,016,927	14,898	2.1	13	26	418,694
2.1	64	867,848	13,759	1.9	11	24	373,532
1.7	48	678,354	10,362	1.4	8	20	289,432

Cost Control

Grain Bought Per Cow	% Feed is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
\$197	19%	\$267	\$ 567	\$ 361	\$2.49
322	23	311	667	479	3.05
378	25	335	727	535	3.31
426	28	363	788	568	3.64
470	31	407	829	627	3.96

508	32	462	887	690	4.31
541	35	514	928	722	4.63
594	37	550	979	768	4.92
666	40	613	1,071	845	5.13
831	49	870	1,307	1,024	6.23

Value and Cost of Production

Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Profitability			
			Net Farm Income		Labor & Mgmt. Income	
			With Apprec.	Without Apprec.	Per Farm	Per Oper.
\$2,594	\$ 6.29	\$11.99	\$108,959	\$85,873	\$61,245	\$34,091
2,419	7.89	12.78	78,885	55,778	32,705	22,189
2,293	8.32	13.07	64,609	42,618	21,656	16,354
2,225	8.81	13.49	57,524	32,163	16,779	12,477
2,168	9.22	13.93	51,908	29,625	12,551	9,268

2,075	9.44	14.32	45,040	26,072	8,294	6,544
2,016	10.16	15.03	35,648	20,544	5,663	4,359
1,968	10.96	16.09	26,102	13,664	-3,715	-3,493
1,798	11.89	17.13	18,387	610	-15,345	-11,684
1,384	13.58	20.29	-5,701	-21,765	-38,033	-33,341

Table 50. FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
86 Freestall Barn Dairy Farms with More Than 120 Cows, New York, 1987

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
11.5	475	9,122,233	20,926	5.0	23	59	978,334
7.5	303	5,443,620	19,082	4.0	20	48	831,859
6.4	253	4,155,570	17,701	3.7	19	45	741,638
5.8	217	3,557,779	17,409	3.5	18	41	682,912
5.2	198	3,195,642	16,973	3.2	18	39	641,707

4.8	176	2,895,944	16,268	3.0	17	37	611,788
4.4	158	2,599,715	15,691	3.9	16	35	572,578
4.0	144	2,349,436	15,355	2.6	15	32	530,718
3.6	132	2,078,626	14,712	2.3	14	30	486,868
3.2	123	1,778,664	12,906	1.7	11	26	421,041

Cost Control							
Grain Bought Per Cow	% Feed is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk		
\$211	21%	\$269	\$ 547	\$415	\$2.67		
354	26	312	675	529	3.31		
434	27	345	704	592	3.63		
466	30	378	743	651	3.87		
494	33	405	787	692	4.17		

531	34	433	834	722	4.36		
571	35	464	883	775	4.59		
638	37	490	940	813	4.82		
691	39	541	1,018	858	5.10		
766	43	690	1,177	932	5.69		

Value and Cost of Production				Profitability			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income		Labor & Mgmt. Income		
			With Apprec.	Without Apprec.	Per Farm	Per Oper.	
\$2,650	\$ 6.33	\$10.56	\$371,960	\$269,426	\$207,317	\$167,283	
2,442	7.76	11.72	211,706	146,148	95,881	69,329	
2,349	8.66	12.22	166,309	105,100	63,094	44,853	
2,280	9.18	12.53	127,460	77,994	42,020	31,897	
2,205	9.44	13.14	99,991	66,929	33,156	22,003	

2,146	9.75	13.66	89,278	54,629	22,169	17,498	
2,032	10.11	13.97	82,461	41,867	16,389	9,426	
1,968	10.54	14.35	64,958	30,225	5,583	3,831	
1,891	11.03	14.90	48,918	19,518	-7,955	-7,224	
1,709	12.11	16.25	17,051	-5,150	-44,860	-35,341	

Table 51. FARM BUSINESS SUMMARIES FOR SINGLE PROPRIETORSHIPS,
PARTNERSHIPS, AND CORPORATIONS
426 New York Dairy Farms, 1987

Item	282 Single Prop.	120 Partnerships	24 Corporations
ACCRUAL EXPENSES			
Hired labor	\$ 21,192	\$ 23,962	\$ 66,452
Feed	46,090	64,763	89,656
Machinery	17,922	23,914	41,466
Livestock	26,354	34,704	62,430
Crops	11,944	18,257	31,721
Real estate	13,841	19,087	40,459
Other	24,198	29,441	42,021
Total Operating Expenses	\$161,541	\$214,128	\$374,205
Expansion livestock	1,254	2,387	3,687
Machinery depreciation	12,556	18,953	32,615
Building depreciation	6,487	9,490	19,989
Total Accrual Expenses	\$181,838	\$244,958	\$430,496
ACCRUAL RECEIPTS			
Milk sales	\$179,437	\$245,907	\$436,170
Livestock	18,215	28,099	42,796
Crops	2,837	8,109	11,692
All other	6,698	10,728	27,179
Total Accrual Receipts	\$207,186	\$292,842	\$517,838
PROFITABILITY ANALYSIS			
Net farm income (without appreciation)	\$25,348	\$47,884	\$87,342
Net farm income (with appreciation)	\$45,513	\$73,061	\$130,190
Labor & management income	\$7,874	\$24,536	\$43,445
Number of operators	1.01	1.97	1.68
Labor & management income per operator	\$7,796	\$12,455	\$25,860
BUSINESS FACTORS			
Worker equivalent	2.84	3.69	4.88
Number of cows	87	117	189
Number of heifers	68	91	148
Acres of hay crops*	140	170	221
Acres of corn silage*	57	78	129
Total tillable acres	260	360	563
Pounds of milk sold	1,394,695	1,916,626	3,312,266
Pounds of milk sold per cow	16,124	16,377	17,494
Tons hay crop dry matter per acre	2.7	2.6	3.4
Tons corn silage per acre	16.0	16.5	16.4
Cows per worker	30	32	39
Pounds of milk sold per worker	491,476	519,567	678,473
Purc. grain & conc. as % of milk receipts	25%	25%	19%
Feed & crop expense per cwt. milk	\$4.11	\$4.27	\$3.64
Fertilizer & lime per crop acre	\$25.91	\$28.03	\$29.52
Machinery cost per tillable acre	\$135	\$136	\$150
Average price per cwt. milk	\$12.87	\$12.83	\$13.17

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

Table 52. FARM FAMILY FINANCIAL SITUATION FOR SINGLE PROPRIETORSHIPS,
PARTNERSHIPS, AND CORPORATIONS
426 New York Dairy Farms, 1987

Item	Farms with: 282 Single Prop.		120 Partnerships		24 Corporations	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS						
Farm cash/chkg./sav.	\$ 3,711	\$ 4,593	\$ 5,462	\$ 6,689	\$ 11,942	\$ 18,941
Accounts receivable	15,412	15,907	21,663	21,813	36,668	39,129
Prepaid expenses	13	31	206	271	120	249
Feed & supplies	35,396	37,246	51,411	58,578	101,439	112,473
Livestock*	101,536	110,742	137,264	148,633	206,730	222,662
Machinery & equip.*	88,637	94,466	120,301	124,466	204,382	206,984
FLB & PCA stock	4,178	4,257	5,840	5,946	9,357	8,648
Other stock & cert.	5,470	5,974	9,610	9,793	22,035	25,445
Land & buildings*	<u>240,619</u>	<u>249,516</u>	<u>311,409</u>	<u>323,156</u>	<u>542,348</u>	<u>572,201</u>
Total Farm Assets	\$494,972	\$522,733	\$663,167	\$699,344	\$1,135,021	\$1,206,733
Pers. cash/chkg./sav.	\$ 8,837	\$ 8,458	\$ 3,364	\$ 3,635	\$ 8,799	\$ 8,369
Cash value life ins.	3,616	4,278	2,303	2,604	4,427	4,460
Nonfarm real estate	16,842	24,544	31,686	41,806	53,250	53,250
Auto (personal share)	2,457	2,834	3,311	3,501	1,050	2,200
Stocks & bonds	3,709	4,261	4,697	4,784	5,712	6,162
Household furnishings	7,747	8,127	6,569	6,681	3,800	3,800
All other	<u>4,494</u>	<u>5,459</u>	<u>2,026</u>	<u>1,857</u>	<u>5,395</u>	<u>8,479</u>
Tot. Nonfarm Assets**	\$ 47,703	\$ 57,961	\$ 53,957	\$ 64,869	\$ 82,433	\$ 86,720
Total Farm & Nonfarm Assets	\$542,675	\$580,694	\$717,124	\$764,213	\$1,217,454	\$1,293,453
LIABILITIES						
Accounts payable	\$ 5,244	\$ 4,817	\$ 5,838	\$ 5,439	\$ 8,753	\$ 9,707
Operating debt	2,440	2,357	5,964	7,625	7,392	10,576
Short term	3,033	2,283	6,224	4,985	4,014	7,167
Advanced gov't. rec.	14	160	0	0	0	290
Intermediate***	71,281	75,232	89,876	88,647	172,845	149,355
Long term*	<u>116,264</u>	<u>112,890</u>	<u>126,373</u>	<u>123,375</u>	<u>126,089</u>	<u>126,504</u>
Total Farm Liab.	\$198,276	\$197,739	\$234,274	\$230,070	\$319,092	\$303,598
Total Nonfarm Liab.**	<u>1,701</u>	<u>1,778</u>	<u>5,393</u>	<u>4,391</u>	<u>0</u>	<u>0</u>
Total Farm & Nonfarm Liabilities	\$199,977	\$199,517	\$239,667	\$234,461	\$319,092	\$303,598
Farm Net Worth (Equity Capital)	\$296,696	\$324,994	\$428,893	\$469,274	\$815,929	\$903,135
Farm & Nonfarm Net Worth	\$342,698	\$381,177	\$477,457	\$529,752	\$898,362	\$989,855
FINANCIAL MEASURES						
Percent equity			62%	67%	75%	
Debt/asset ratio-long term			0.45	0.38	0.22	
Debt/asset ratio-inter. & current			0.31	0.28	0.28	
Change in net worth with apprec.			\$28,298	\$40,381	\$87,206	
Total farm debt per cow			\$2,222	\$1,917	\$1,581	
Debt payments made per cow			\$550	\$509	\$632	
Debt payments as % of milk sales			27%	25%	27%	
Amount avail. for debt service			\$45,226	\$45,264	\$155,276	
Cash flow coverage ratio for 1987			1.24	1.27	1.66	

*Includes discounted lease payments. **Average of 213 single proprietorships reporting nonfarm assets and liabilities, 36 partnerships, and 10 corporations.
***Includes FLB/PCA stock & discounted lease payments for cattle & machinery.

Table 53. SELECTED BUSINESS FACTORS BY MILKING SYSTEMS
423 New York Dairy Farms, 1987

Item	Dumping Station	Pipeline	Herringbone Parlor	Other Parlors
Number of farms	31	226	147	19
Percent of farms	7%	53%	35%	5%
<u>Cropping Program Analysis</u>				
Total Tillable acres	205	233	433	371
Tillable acres rented*	70	77	148	173
Hay crop acres*	120	133	190	159
Corn silage acres*	28	42	115	69
Hay crop, tons DM/acre	1.8	2.6	2.9	2.9
Corn silage, tons/acre	14.0	15.4	16.7	16.9
Oats, bushels/acre	51.3	60.4	53.4	41.4
Forage DM per cow, tons	7.3	8.0	7.7	7.5
Tillable acres/cow	4.3	3.3	2.8	3.1
Fert. & lime exp./tillable acre	\$14.34	\$24.51	\$30.28	\$27.75
Total machinery costs	\$15,271	\$29,333	\$66,025	\$48,602
Machinery cost/tillable acre	\$74	\$126	\$152	\$131
<u>Dairy Analysis</u>				
Number of cows	48	71	157	119
Number of heifers	33	56	123	98
Milk sold, lbs.	657,157	1,140,101	2,631,373	1,920,316
Milk sold/cow, lbs.	13,793	16,048	16,744	16,180
Oper. cost of prod. milk/cwt.	\$9.25	\$9.26	\$9.37	\$9.36
Total cost of prod. milk/cwt.	\$15.23	\$14.15	\$13.05	\$13.70
Price/cwt. milk sold	\$12.80	\$12.81	\$12.92	\$13.13
Purchased dairy feed/cow	\$451	\$503	\$551	\$452
Purchased dairy feed/cwt. milk	\$3.27	\$3.14	\$3.29	\$2.80
Purc. grain & conc. as % milk receipts	25%	24%	24%	21%
Purc. feed & crop expense/cwt. milk	\$3.99	\$4.00	\$4.22	\$3.77
<u>Capital Efficiency</u>				
Farm capital/worker	\$130,933	\$174,290	\$204,476	\$172,651
Farm capital/cow	5,806	6,269	5,656	5,672
Farm capital/tillable acre owned	2,049	2,855	3,119	3,400
Real estate/cow	3,182	3,090	2,606	2,517
Machinery investment/cow	946	1,175	985	1,010
Capital turnover, years	2.56	2.40	2.03	2.17
<u>Labor Efficiency</u>				
Worker equivalent	2.11	2.56	4.35	3.90
Operator/manager equivalent	1.28	1.24	1.43	1.52
Milk sold/worker, lbs.	311,021	446,169	605,339	492,499
Cows/worker	23	28	36	30
Work units/worker	242	295	371	318
Labor cost/cow	\$476	\$394	\$394	\$466
Labor cost/tillable acre	\$111	\$120	\$143	\$149
<u>Profitability & Balance Sheet Analysis</u>				
Net farm income (w/o apprec.)	\$15,725	\$24,197	\$55,129	\$46,671
Labor & mgmt. income/operator	\$3,741	\$6,203	\$18,541	\$14,138
Farm debt/cow	\$1,953	\$2,043	\$2,096	\$1,738
Percent equity	64%	67%	63%	70%

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

Table 54. COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
426 New York Dairy Farms, 1987

Item	Region*			
	1	2	3	4
Number of farms	148	101	70	107
ACCRUAL EXPENSES				
Hired labor	\$ 18,490	\$ 44,977	\$ 15,644	\$ 19,366
Feed	46,174	77,881	46,881	46,158
Machinery	17,845	31,984	15,232	18,515
Livestock	24,765	42,939	23,083	32,495
Crops	12,883	23,841	9,844	12,307
Real estate	13,770	25,697	13,173	15,042
Other	22,292	40,624	21,503	22,969
Total Operating	\$156,219	\$287,943	\$145,360	\$166,852
Expansion livestock	1,152	3,561	386	1,602
Machinery depreciation	12,634	23,479	15,076	12,161
Building depreciation	7,123	13,319	5,634	6,111
Total Accrual Expenses	\$177,128	\$328,302	\$166,456	\$186,726
ACCRUAL RECEIPTS				
Milk sales	\$175,003	\$321,089	\$168,990	\$190,826
Livestock	18,925	36,768	18,103	16,395
Crops	3,050	13,120	2,965	651
All other	6,602	16,418	6,064	7,182
Total Accrual Receipts	\$203,580	\$387,395	\$196,122	\$215,054
PROFITABILITY ANALYSIS				
Net farm income (w/o appreciation)	\$26,452	\$59,093	\$29,666	\$28,328
Net farm income (w/appreciation)	\$47,197	\$88,191	\$44,383	\$53,531
Labor & management income	\$7,906	\$31,931	\$14,361	\$7,549
Number of operators	1.26	1.41	1.28	1.35
Labor & management income/operator	\$6,274	\$22,646	\$11,219	\$5,592
BUSINESS FACTORS				
Worker equivalent	2.91	4.23	2.69	2.94
Number of cows	86	146	84	90
Number of heifers	67	119	69	65
Acres of hay crops**	145	168	160	144
Acres of corn silage**	54	103	55	58
Total tillable acres	270	435	254	266
Pounds of milk sold	1,371,863	2,516,447	1,341,666	1,417,569
Pounds of milk sold/cow	15,948	17,227	15,891	15,823
Tons hay crop dry matter/acre	2.6	3.0	2.5	2.7
Tons corn silage/acre	16.7	17.3	15.7	14.0
Cows/worker	30	35	31	30
Pounds of milk sold/worker	472,176	595,341	498,893	481,651
Percent grain & conc.				
is of milk receipts	25%	23%	26%	23%
Feed & crop expense/cwt. milk	\$4.23	\$4.01	\$4.13	\$4.10
Fertilizer & lime/crop acre	\$27.68	\$28.46	\$21.98	\$26.91
Machinery cost/tillable acre	\$130	\$145	\$137	\$134
Average price/cwt. milk	\$12.76	\$12.76	\$12.60	\$13.46

*Region 1 includes the Western and Eastern Plateau counties identified in Figure 1, page 2, plus Sullivan County; Region 2 includes Western Plain, Central New York, and Central Plain counties; Region 3 is the Northern New York counties; and Region 4 includes Oneida-Mohawk, Northern Hudson, and Southeastern New York counties excluding Sullivan.

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

Table 55.

TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1978 to 1987

Item	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
Number of farms	527	610	600	553	572	510	458	404	414	426
<u>Cropping Program</u>										
Total tillable acres	217	228	246	257	262	272	280	280	288	305
Tillable acres rented	58	58	76	83	83	91	94	93	100	105
Hay crop acres	128	129	131	131	135	139	143	142	147	153
Corn silage acres	63	62	60	59	70	72	76	69	67	67
Hay crop, tons DM/acre	2.4	2.7	2.5	2.5	2.6	2.5	2.7	2.7	2.7	2.7
Corn silage, tons/acre	13.9	13.6	14.5	14.9	14.0	13.5	14.0	14.3	14.3	16.2
Fert. & lime exp. /tillable acre	\$24	\$29	\$29	\$32	\$33	\$31	\$32	\$32	\$26	\$27
Machinery cost/cow	\$286	\$344	\$425	\$465	\$432	\$413	\$433	\$426	\$400	\$413
<u>Dairy Analysis</u>										
Number of cows	71	75	75	79	82	88	89	89	95	101
Number of heifers	49	53	56	59	67	72	76	73	77	79
Milk sold, cwt.	9,795	10,698	10,761	11,420	12,105	13,432	13,735	14,001	15,374	16,498
Milk sold/cow, lbs.	13,796	14,264	14,300	14,456	14,762	15,264	15,433	15,679	16,237	16,351
Purchased dairy feed/cwt. milk	\$2.96	\$3.27	\$3.47	\$3.51	\$3.27	\$3.44	\$3.28	\$3.04	\$3.10	\$3.21
Purc. grain & conc. as % milk receipts	28%	27%	27%	26%	24%	25%	24%	23%	24%	24%
Purc. feed & crop exp./cwt. milk	\$3.81	\$4.24	\$4.49	\$4.67	\$4.53	\$4.62	\$4.53	\$4.13	\$4.00	\$4.11
<u>Capital Efficiency</u>										
Farm capital/cow	\$4,477	\$5,063	\$5,539	\$5,676	\$5,517	\$5,421	\$5,520	\$5,801	\$5,792	\$5,894
Real estate/cow	\$2,278	\$2,437	\$2,602	\$2,693	\$2,664	\$2,668	\$2,731	\$2,726	\$2,758	\$2,805
Mach. invest./cow	\$833	\$911	\$1,015	\$1,078	\$1,047	\$1,038	\$1,057	\$1,083	\$1,062	\$1,057
Capital turnover, yrs.	2.3	2.3	2.2	2.4	2.5	2.4	2.3	2.5	2.3	2.2
<u>Labor Efficiency</u>										
Worker equivalent	2.40	2.70	2.70	2.75	2.83	3.00	3.08	3.17	3.17	3.19
Operator/manager eq.	1.20	1.20	1.30	1.25	1.30	1.32	1.31	1.34	1.33	1.32
Milk sold/worker, lbs.	404,800	400,674	403,000	415,273	427,739	447,733	445,942	442,125	497,555	516,728
Cows/worker	29	28	28	29	29	29	29	28	31	32
Labor cost/cow	\$268	\$289	\$326	\$335	\$352	\$344	\$366	\$387	\$385	\$400
<u>Profitability & Financial Analysis</u>										
Labor & mgmt. income/oper.	\$6,778	\$7,598	\$1,565	\$-4,261	\$3,451	\$5,514	\$2,262	\$2,850	\$3,837	\$11,042
Farm net worth	\$211,680	\$261,398	\$288,022	\$301,975	\$306,589	\$322,001	\$336,210	\$325,664	\$348,909	\$398,209
Percent equity	65%	65%	66%	64%	63%	63%	64%	63%	62%	65%

Table 56.

TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT*
New York Dairy Farms, 1978 to 1987

Item	1978	1979	1980	1981	1982	1983	1984	1985*	1986*	1987*
<u>Cash Operating Expenses</u>										
Hired labor	\$.89	\$.99	\$ 1.09	\$ 1.20	\$ 1.29	\$ 1.25	\$ 1.39	\$ 1.38	\$ 1.38	\$ 1.49
Purchased feed	3.11	3.37	3.60	3.62	3.40	3.59	3.46	3.10	3.21	3.30
Machinery repairs & rent	.65	.69	.75	.81	.81	.77	.80	.79	.75	.88
Auto expenses (farm share)	.04	.04	.04	.04	.04	.04	.03	.03	.04	.04
Fuel, oil & grease	.34	.43	.54	.62	.59	.49	.50	.48	.34	.35
Replacement livestock	.36	.50	.29	.23	.19	.16	.10	.10	.13	.13
Breeding fees	.13	.15	.16	.18	.19	.19	.20	.20	.19	.19
Veterinary & medicine	.19	.22	.24	.28	.29	.28	.29	.27	.28	.28
Other dairy expenses	.67	.74	.82	.89	1.02	1.47	1.58	1.33	1.37	1.27
Lime & fertilizer	.53	.62	.66	.72	.71	.63	.66	.62	.48	.51
Seeds & plants	.18	.20	.20	.23	.23	.21	.22	.24	.22	.21
Spray & other crop expense	.13	.16	.16	.21	.18	.19	.20	.23	.19	.20
Land, building, fence repair	.19	.21	.21	.22	.21	.18	.18	.17	.16	.20
Taxes	.27	.28	.31	.35	.34	.34	.33	.34	.33	.35
Insurance	.18	.20	.24	.23	.23	.21	.20	.22	.22	.22
Telephone (farm share)	.04	.04	.04	.05	.05	.05	.04	.05	.05	.04
Electricity (farm share)	.19	.21	.24	.27	.30	.31	.32	.32	.34	.34
Interest paid	.83	1.00	1.17	1.43	1.54	1.40	1.40	1.25	1.18	1.04
Misc. (including rent)	.28	.31	.37	.41	.43	.44	.44	.40	.41	.45
Total	\$ 9.20	\$10.36	\$11.13	\$11.99	\$12.04	\$12.20	\$12.34	\$11.52	\$11.27	\$11.49
<u>Overhead Expenses</u>										
Depreciation: mach. & bldgs.	\$.94	\$ 1.06	\$ 1.43	\$ 1.56	\$ 1.60	\$ 1.56	\$ 1.65	\$ 1.64	\$ 1.54	\$ 1.43
Unpaid labor	.13	.13	.14	.14	.14	.12	.12	.12	.13	.10
Operator(s) labor	.93	.91	1.05	.99	.93	.89	.87	.97	.86	.87
Operator(s) management	.60	.68	.72	.76	.75	.76	.76	.72	.71	.74
Interest on farm eq. cap. (5%)	1.08	1.22	1.34	1.32	1.27	1.20	1.22	1.16	1.10	1.15
Total	\$ 3.68	\$ 4.00	\$ 4.68	\$ 4.77	\$ 4.69	\$ 4.53	\$ 4.62	\$ 4.61	\$ 4.34	\$ 4.28
Gross Farm Operating Cost	\$12.88	\$14.36	\$15.81	\$16.76	\$16.73	\$16.73	\$16.96	\$16.13	\$15.61	\$15.77
<u>Less:</u> Non-milk cash receipts	1.46	1.78	1.67	1.58	1.47	1.49	1.74	1.58	1.52	1.84
Increase in feed & supplies	.40	.40	.43	.11	.03	.26	.18	.06	.07	.23
Increase in livestock	.11	.38	.39	.25	.35	.24	.16	.18	.12	.10
TOTAL COST OF MILK PRODUCTION	\$10.91	\$11.80	\$13.32	\$14.82	\$14.88	\$14.74	\$14.88	\$14.31	\$13.90	\$13.60
OPERATING COST OF MILK PRODUCTION	\$7.23	\$7.80	\$8.64	\$10.05	\$10.19	\$10.21	\$10.26	\$9.70	\$9.56	\$9.32
AVERAGE FARM PRICE OF MILK	\$10.51	\$11.90	\$12.81	\$13.66	\$13.56	\$13.64	\$13.49	\$12.90	\$12.65	\$12.89
Return per cwt. to operator labor, capital, & management	\$2.21	\$2.91	\$2.60	\$1.91	\$1.63	\$1.75	\$1.46	\$1.44	\$1.42	\$2.05
Rate of return on farm eq. cap.	3.1%	5.4%	3.1%	0.6%	-0.2%	0.4%	-0.7%	-1.1%	-0.7%	1.9%

*Includes cash expenses plus changes in accounts payable and cash receipts plus changes in accounts receivable.

Table 57. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
14 New York Dairy-Cash Crop Farms,* 1987

<u>ACCRUAL EXPENSES</u>		<u>ACCRUAL RECEIPTS</u>			
Labor: Hired	\$ 18,957	Milk sales	\$189,467		
Feed: Dairy grain & conc.	35,673	Dairy cattle	16,969		
Dairy roughage	51	Dairy calves	3,292		
Other livestock	81	Other livestock	324		
Machinery:Mach. hire/rent/lease	3,461	Crops	35,004		
Mach. repairs/parts	13,993	Government receipts	21,571		
Auto expense (farm share)	318	Custom machine work	1,327		
Fuel, oil, grease	7,980	Gas tax refund	316		
Livestock: Replacement lvstk.	4,826	Other	2,952		
Breeding	3,083	- Nonfarm noncash capital	(-) 0		
Vet & medicine	4,939	TOTAL ACCRUAL RECEIPTS	\$271,222		
Milk marketing	11,099	<u>PROFITABILITY ANALYSIS</u>			
Cattle lease/rent	0	Net farm inc. (w/o apprec.)	\$61,209		
Other livestock expense	10,568	Net farm inc. (w/apprec.)	\$75,730		
Crops: Fertilizer & lime	16,184	Labor & mgt. income/farm	\$38,089		
Seeds & plants	5,565	Number of operators	1.63		
Spray & other crop expense	5,743	Labor & mgt. income/oper.	\$23,368		
Real Estate: Land/building/ fence repair	2,974	Rate of return on equity capital including apprec.	9.5%		
Taxes	4,931	<u>BUSINESS FACTORS</u>			
Insurance	3,564	Number of cows	92		
Rent & lease	9,071	Number of heifers	72		
Other:		Worker equivalent	3.14		
Telephone (farm share)	559	Total tillable acres	505		
Electricity (farm share)	4,861	Milk sold per cow, lbs.	15,660		
Interest paid	11,873	Hay DM per acre, tons	3.0		
Miscellaneous	2,886	Corn silage per acre, tons	18.1		
TOTAL OPERATING EXPENSES	\$183,240	Milk sold per worker, lbs.	459,983		
Expansion livestock	193	Grain/conc. as % milk sales	19%		
Machinery depreciation	20,921	Feed & crop exp./cwt. milk	\$4.38		
Building depreciation	5,659	Labor & mach. costs/cow	\$990		
TOTAL ACCRUAL EXPENSES	\$210,013	Average price/cwt. milk	\$13.13		

<u>ASSETS</u>	<u>Jan. 1</u>	<u>Dec. 31</u>	<u>LIABILITIES</u>	<u>Jan. 1</u>	<u>Dec. 31</u>
Farm cash/chkg./sav.	\$ 13,696	\$ 7,972	Accounts payable	\$ 4,013	\$ 2,394
Accounts receivable	20,806	21,883	Operating debt	640	935
Prepaid expenses	0	135	Short-term	10,723	10,077
Feed & supplies	63,491	70,774	Advanced gov't. rec.	0	0
Dairy cows**	75,757	80,055	Intermediate***	66,389	61,263
Heifers	32,746	34,773	Long-term**	74,366	71,802
Bulls & other lvstk.	584	671	Total Farm Liab.	\$156,131	\$146,471
Machinery & equip.**	136,431	139,899	Nonfarm Liab.****	0	0
FLB & PCA stock	4,613	4,600	Total Farm & Nonfarm		
Other stock & cert.	17,457	15,552	Liabilities	\$156,131	\$146,471
Land & buildings**	225,755	218,884	Farm Net Worth	\$435,206	\$448,728
Total Farm Assets	\$591,336	\$595,198	Farm & Nonfarm		
Nonfarm Assets****	59,571	133,107	Net Worth	\$494,776	\$581,834
Total Farm & Nonfarm					
Assets	\$650,907	\$728,305			

*A farm is classified as dairy-cash crop if cash crop sales amounted to 10 percent or more of accrual milk sales. **Includes discounted lease payments. ***Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ****Average of seven farms reporting nonfarm assets and liabilities.

Table 58. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
50 New York Dairy-Renter Farms,* 1987

<u>ACCRUAL EXPENSES</u>		<u>ACCRUAL RECEIPTS</u>			
Labor: Hired	\$ 12,117	Milk sales	\$154,332		
Feed: Dairy grain & conc.	34,727	Dairy cattle	11,579		
Dairy roughage	4,521	Dairy calves	2,543		
Other livestock	215	Other livestock	34		
Machinery:Mach. hire/rent/lease	1,268	Crops	2,484		
Mach. repairs/parts	7,744	Government receipts	4,291		
Auto expense (farm share)	429	Custom machine work	382		
Fuel, oil, grease	4,414	Gas tax refund	75		
Livestock: Replacement lvstk.	3,698	Other	1,291		
Breeding	2,691	- Nonfarm noncash capital	(-) 140		
Vet & medicine	3,058	TOTAL ACCRUAL RECEIPTS	\$176,869		
Milk marketing	9,763	<u>PROFITABILITY ANALYSIS</u>			
Cattle lease/rent	84	Net farm inc. (w/o apprec.)	\$32,390		
Other livestock expense	7,320	Net farm inc. (w/apprec.)	\$39,958		
Crops: Fertilizer & lime	5,022	Labor & mgt. income/farm	\$22,702		
Seeds & plants	2,213	Number of operators	1.37		
Spray & other crop expense	2,485	Labor & mgt. income/oper.	\$16,571		
Real Estate: Land/building/ fence repair	1,979	Rate of return on equity capital including apprec.	8.3%		
Taxes	1,103	<u>BUSINESS FACTORS</u>			
Insurance	2,773	Number of cows	76		
Rent & lease	12,921	Number of heifers	54		
Other:		Worker equivalent	2.52		
Telephone (farm share)	529	Total tillable acres	232		
Electricity (farm share)	4,219	Milk sold per cow, lbs.	15,675		
Interest paid	5,270	Hay DM per acre, tons	2.5		
Miscellaneous	1,630	Corn silage per acre, tons	15.2		
TOTAL OPERATING EXPENSES	\$132,193	Milk sold per worker, lbs.	472,486		
Expansion livestock	701	Grain/conc. as % milk sales	23%		
Machinery depreciation	10,615	Feed & crop exp./cwt. milk	\$4.12		
Building depreciation	970	Labor & mach. costs/cow	\$741		
TOTAL ACCRUAL EXPENSES	\$144,479	Average price/cwt. milk	\$12.98		
<u>ASSETS</u>		<u>LIABILITIES</u>			
Farm cash/chkg./sav.	Jan. 1 \$ 14,701	Dec. 31 \$ 9,402	Accounts payable	Jan. 1 \$ 2,999	Dec. 31 \$ 3,390
Accounts receivable	13,754	13,473	Operating debt	2,902	2,503
Prepaid expenses	0	7	Short-term	2,729	1,750
Feed & supplies	31,505	34,014	Advanced gov't. rec.	0	0
Dairy cows**	61,918	66,183	Intermediate***	51,876	53,883
Heifers	20,157	22,109	Long-term**	9,008	7,988
Bulls & other lvstk.	241	276	Total Farm Liab.	\$ 69,513	\$ 69,514
Machinery & equip**	77,186	80,120	Nonfarm Liab.****	4,430	4,828
FLB & PCA stock	1,772	1,832	Total Farm & Nonfarm		
Other stock & cert.	6,302	6,250	Liabilities	\$ 73,943	\$ 74,342
Land & buildings**	12,309	14,562	Farm Net Worth	\$170,331	\$178,713
Total Farm Assets	\$239,845	\$248,227	Farm & Nonfarm		
Nonfarm Assets****	25,346	47,697	Net Worth	\$191,248	\$221,582
Total Farm & Nonfarm Assets	\$265,191	\$295,924			

*A farm is classified as a renter if no farm real estate is owned at the end of the year or no tillable land is owned. **Includes discounted lease payments. ***Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ****Average of 23 farms reporting nonfarm assets and liabilities.

Table 59. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
Top 10 Percent of the Farms by Net Farm Income (without appreciation)
42 New York Dairy Farms, 1987

<u>ACCRUAL EXPENSES</u>		<u>ACCRUAL RECEIPTS</u>			
<u>Labor: Hired</u>	\$ 87,216	Milk sales	\$578,773		
<u>Feed: Dairy grain & conc.</u>	136,485	Dairy cattle	56,212		
Dairy roughage	7,119	Dairy calves	8,472		
Other livestock	939	Other livestock	1,230		
<u>Machinery: Mach. hire/rent/lease</u>	4,938	Crops	24,394		
Mach. repairs/parts	29,094	Government receipts	19,427		
Auto expense (farm share)	947	Custom machine work	785		
Fuel, oil, grease	13,312	Gas tax refund	678		
<u>Livestock: Replacement lvstk.</u>	2,967	Other	8,684		
Breeding	8,018	- Nonfarm noncash capital	(-) 135		
Vet & medicine	13,573	TOTAL ACCRUAL RECEIPTS	\$698,520		
Milk marketing	31,373	<u>PROFITABILITY ANALYSIS</u>			
Cattle lease/rent	289	Net farm inc. (w/o apprec.)	\$136,964		
Other livestock expense	20,673	Net farm inc. (w/apprec.)	\$176,331		
<u>Crops: Fertilizer & lime</u>	19,261	Labor & mgt. income/farm	\$90,118		
Seeds & plants	9,348	Number of operators	1.76		
Spray & other crop expense	10,046	Labor & mgt. income/oper.	\$51,204		
<u>Real Estate: Land/building/</u>		Rate of return on equity			
fence repair	11,017	capital including apprec.	14.4%		
Taxes	11,671	<u>BUSINESS FACTORS</u>			
Insurance	7,212	Number of cows	250		
Rent & lease	13,108	Number of heifers	199		
<u>Other:</u>		Worker equivalent	6.3		
Telephone (farm share)	1,223	Total tillable acres	641		
Electricity (farm share)	12,213	Milk sold per cow, lbs.	17,899		
Interest paid	38,551	Hay DM per acre, tons	3.2		
Miscellaneous	7,658	Corn silage per acre, tons	17.2		
TOTAL OPERATING EXPENSES	\$498,251	Milk sold per worker, lbs.	707,041		
Expansion livestock	6,137	Grain/conc. as % milk sales	24%		
Machinery depreciation	35,125	Feed & crop exp./cwt. milk	\$4.07		
Building depreciation	22,043	Labor & mach. costs/cow	\$804		
TOTAL ACCRUAL EXPENSES	\$561,556	Average price/cwt. milk	\$12.92		
<hr/>					
<u>ASSETS</u>	<u>Jan. 1</u>	<u>Dec. 31</u>	<u>LIABILITIES</u>	<u>Jan. 1</u>	<u>Dec. 31</u>
Farm cash/chkg./sav.\$	8,095	\$ 15,134	Accounts payable	\$ 11,973	\$ 5,945
Accounts receivable	48,800	50,435	Operating debt	20,335	26,397
Prepaid expenses	565	935	Short-term	14,458	9,237
Feed & supplies	123,102	148,100	Advanced gov't. rec.	0	412
Dairy cows*	201,447	221,021	Intermediate**	192,424	194,067
Heifers	84,550	92,282	Long-term*	232,190	229,436
Bulls & other lvstk.	1,839	2,740	Total Farm Liab.	\$471,379	\$465,493
Machinery & equip*	214,204	223,144	Nonfarm Liab.***	6,260	5,830
FLB & PCA stock	10,154	9,873	Total Farm & Nonfarm		
Other stock & cert.	31,020	34,414	Liabilities	\$477,639	\$471,323
Land & buildings*	612,835	646,303	Farm Net Worth	\$865,231	\$978,888
Total Farm Assets	\$1,336,610	\$1,444,381	Farm & Nonfarm		
Nonfarm Assets***	69,724	84,917	Net Worth	\$928,695	\$1,057,975
Total Farm & Nonfarm					
Assets	\$1,406,334	\$1,529,298			

*Includes discounted lease payments. **Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ***Average of 15 farms reporting nonfarm assets and liabilities.

Table 60. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
Average of 426 New York Dairy Farms, 1987

<u>ACCRUAL EXPENSES</u>		<u>ACCRUAL RECEIPTS</u>			
Labor: Hired	\$ 24,522	Milk sales	\$212,625		
Feed: Dairy grain & conc.	51,043	Dairy cattle	18,472		
Dairy roughage	1,903	Dairy calves	3,347		
Other livestock	857	Other livestock	565		
Machinery: Mach. hire/rent/lease	2,373	Crops	4,821		
Mach. repairs/parts	12,141	Government receipts	5,678		
Auto expense (farm share)	677	Custom machine work	262		
Fuel, oil, grease	5,744	Gas tax refund	269		
Livestock: Replacement lvstk.	2,141	Other	2,913		
Breeding	3,100	- Nonfarm noncash capital	(-) 135		
Vet & medicine	4,599	TOTAL ACCRUAL RECEIPTS	\$248,818		
Milk marketing	12,195	<u>PROFITABILITY ANALYSIS</u>			
Cattle lease/rent	130	Net farm inc. (w/o apprec.)	\$35,192		
Other livestock expense	8,574	Net farm inc. (w/apprec.)	\$58,047		
Crops: Fertilizer & lime	8,239	Labor & mgt. income/farm	\$14,575		
Seeds & plants	3,442	Number of operators	1.3		
Spray & other crop expense	3,156	Labor & mgt. income/oper.	\$11,042		
Real Estate: Land/building/ fence repair	3,294	Rate of return on equity capital including apprec.	8.1%		
Taxes	5,704	<u>BUSINESS FACTORS</u>			
Insurance	3,621	Number of cows	101		
Rent & lease	4,200	Number of heifers	79		
Other:		Worker equivalent	3.19		
Telephone (farm share)	725	Total tillable acres	305		
Electricity (farm share)	5,586	Milk sold per cow, lbs.	16,351		
Interest paid	17,132	Hay DM per acre, tons	2.7		
Miscellaneous	3,237	Corn silage per acre, tons	16.2		
TOTAL OPERATING EXPENSES	\$188,335	Milk sold per worker, lbs.	516,728		
Expansion livestock	1,710	Grain/conc. as % milk sales	24%		
Machinery depreciation	15,488	Feed & crop exp./cwt. milk	\$4.11		
Building depreciation	8,093	Labor & mach. costs/cow	\$814		
TOTAL ACCRUAL EXPENSES	\$213,626	Average price/cwt. milk	\$12.89		

<u>ASSETS</u>	<u>Jan. 1</u>	<u>Dec. 31</u>	<u>LIABILITIES</u>	<u>Jan. 1</u>	<u>Dec. 31</u>
Farm cash/chkg./sav.	\$ 4,668	\$ 5,992	Accounts payable	\$ 5,609	\$ 5,267
Accounts receivable	18,370	18,879	Operating debt	3,711	4,304
Prepaid expenses	73	111	Short-term	3,987	3,319
Feed & supplies	43,628	47,493	Advanced gov't. rec.	9	122
Dairy cows*	82,742	89,998	Intermediate**	82,241	83,187
Heifers	33,864	36,628	Long-term*	119,665	116,611
Bulls & other lvstk.	920	1,095	Total Farm Liab.	\$215,223	\$212,810
Machinery & equip.*	104,078	109,256	Nonfarm Liab.***	2,149	2,073
FLB & PCA stock	4,938	4,980	Total Farm & Nonfarm		
Other stock & cert.	7,569	8,147	Liabilities	\$217,372	\$214,883
Land & buildings*	277,559	288,440	Farm Net Worth	\$363,186	\$398,209
Total Farm Assets	\$578,408	\$611,019	Farm & Nonfarm		
Nonfarm Assets***	49,913	60,031	Net Worth	\$410,949	\$456,167
Total Farm & Nonfarm					
Assets	\$628,321	\$671,050			

*Includes discounted lease payments. **Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ***Average of 259 farms reporting nonfarm assets and liabilities.

Table 61. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
Average per Cow, 426 New York Dairy Farms, 1987

<u>ACCRUAL EXPENSES</u>		<u>ACCRUAL RECEIPTS</u>			
Labor: Hired	\$ 243	Milk sales	\$2,107		
Feed: Dairy grain & conc.	506	Dairy cattle	183		
Dairy roughage	19	Dairy calves	33		
Other livestock	8	Other livestock	6		
Machinery: Mach. hire/rent/lease	23	Crops	48		
Mach. repairs/parts	120	Government receipts	56		
Auto expense (farm share)	7	Custom machine work	3		
Fuel, oil, grease	57	Gas tax refund	3		
Livestock: Replacement lvstk.	21	Other	29		
Breeding	31	- Nonfarm noncash capital	(-) 1		
Vet & medicine	46	TOTAL ACCRUAL RECEIPTS	\$2,467		
Milk marketing	121				
Cattle lease/rent	1	<u>PROFITABILITY ANALYSIS</u>			
Other livestock expense	85	Net farm inc. (w/o apprec.)	\$349		
Crops: Fertilizer & lime	82	Net farm inc. (w/apprec.)	\$575		
Seeds & plants	34	Labor & mgt. income/farm	\$144		
Spray & other crop expense	31	Number of operators	(1.32)		
Real Estate: Land/building/ fence repair	33	Labor & mgt. income/oper.	\$109		
Taxes	57	Rate of return on equity capital including apprec.	8.1%		
Insurance	36				
Rent & lease	42	<u>BUSINESS FACTORS</u>			
Other:		Number of cows	(101)		
Telephone (farm share)	7	Number of heifers	0.78		
Electricity (farm share)	55	Worker equivalent	0.032		
Interest paid	170	Total tillable acres	3.0		
Miscellaneous	32	Milk sold, lbs.	16,351		
TOTAL OPERATING EXPENSES	\$1,867	Hay DM, tons	4.1		
		Corn silage, tons	10.7		
Expansion livestock	17	Dairy feed & crop expense	\$672		
Machinery depreciation	154	Labor & mach. costs	\$814		
Building depreciation	80	Total debt	\$2,046		
TOTAL ACCRUAL EXPENSES	\$2,118	Debt payment	\$542		
<u>ASSETS</u>	<u>Jan. 1</u>	<u>Dec. 31</u>	<u>LIABILITIES</u>	<u>Jan. 1</u>	<u>Dec. 31</u>
Farm cash/chkg./sav.	\$ 46	\$ 59	Accounts payable	\$ 56	\$ 52
Accounts receivable	182	187	Operating debt	37	43
Prepaid expenses	1	1	Short-term	40	33
Feed & supplies	432	471	Advanced gov't. rec.	0	1
Dairy cows*	820	892	Intermediate**	815	825
Heifers	336	363	Long-term*	1,186	1,156
Bulls & other lvstk.	9	11	Total Farm Liab.	\$2,134	\$2,110
Machinery & equip.*	1,032	1,083	Nonfarm Liab.***	21	21
FLB & PCA stock	49	49	Total Farm & Nonfarm Liabilities	\$2,155	\$2,131
Other stock & cert.	75	81			
Land & buildings*	2,751	2,859	Farm Net Worth	\$3,599	\$3,946
Total Farm Assets	\$5,733	\$6,056	Farm & Nonfarm Net Worth	\$4,073	\$4,520
Nonfarm Assets***	495	595			
Total Farm & Nonfarm Assets	\$6,228	\$6,651			

*Includes discounted lease payments. **Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ***Average of 259 farms reporting nonfarm assets and liabilities.

APPENDIX

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

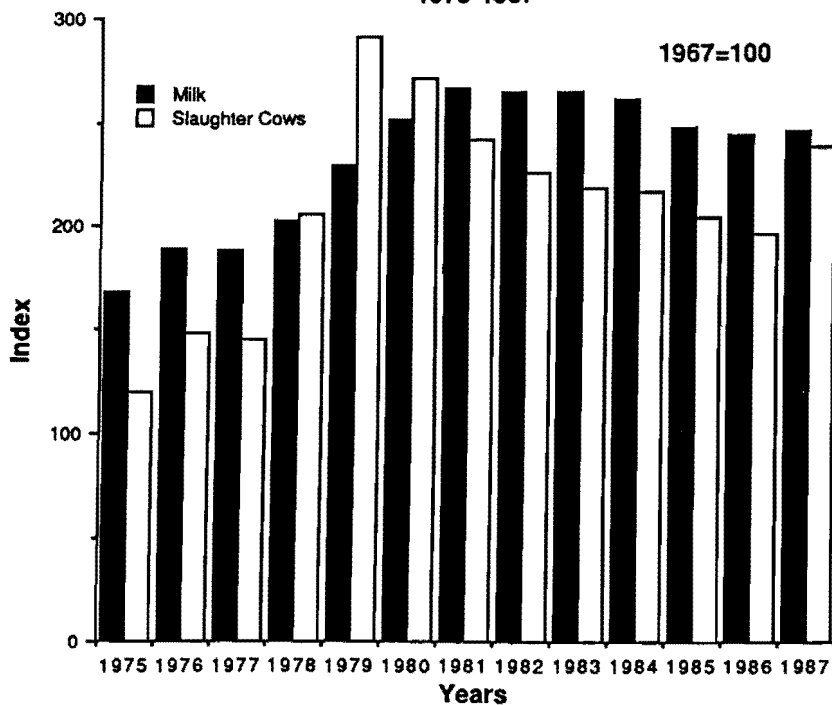
The prices dairy farmers receive for milk and slaughter cows have a major impact on dairy farm profits. Milk prices generally increased from 1975 to 1981. Annual milk prices declined from 1981 to 1986. The 1987 milk price averaged \$0.10 per hundredweight higher than in 1986. The average monthly farmprice exceeded 1986 levels during the first four months of 1987. Slaughter cow prices hit a six-year low in 1975, peaked in 1979, and declined through the early 1980's. The 1987 slaughter cow price averaged \$7.18 per hundredweight higher than in 1986.

Table A1. PRICES RECEIVED BY NEW YORK DAIRY FARMERS, 1975-1987

Year	All Milk (\$/cwt)	Slaughter Cows (\$/cwt)	Monthly Farm Price of Milk	
			(\$/cwt)	
			1986	1987
1975	8.75	20.60	January	12.50 13.30
1976	9.83	25.40	February	12.40 12.90
1977	9.75	25.00	March	12.00 12.40
1978	10.50	35.30	April	11.80 12.10
1979	11.90	49.80	May	11.60 11.60
			June	11.50 11.50
1980	13.00	46.30	July	12.10 12.10
1981	13.80	41.30	August	12.70 12.60
1982	13.70	38.60	September	13.20 13.10
1983	13.70	37.20	October	13.60 13.30
1984	13.50	36.90	November	13.70 13.30
			December	13.40 12.70
1985	12.80	34.90		
1986	12.60	33.60		
1987	12.70	40.78		

SOURCE: NYCRS, New York Crop and Livestock Report.

Chart A1. PRICES RECEIVED BY NEW YORK DAIRY FARMERS,
1975-1987



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.

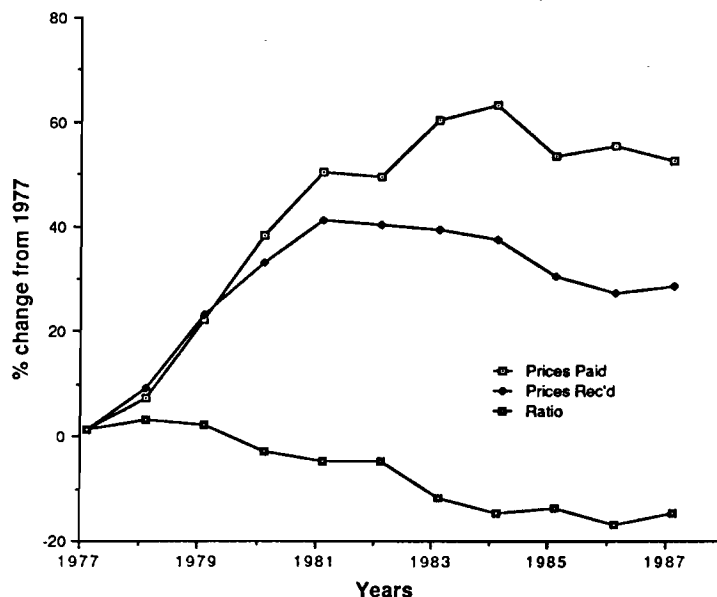
Table A2. PRICES PAID BY NEW YORK FARMERS FOR SELECTED ITEMS, 1977-1987

Year	Mixed Dairy Feed 16% Protein (\$/ton)	Fertilizer, Urea, 45-46%N (\$/ton)	Seed Corn, Hybrid* (\$/bu)	Diesel Fuel (\$/gal)	Tractor 50-59 PTO* (\$)	Wage Rate All Hired Farm Workers (\$/hr)
1977	139.40	180	40.00	0.481	10,000	2.53
1978	136.50	189	43.00	0.509	10,900	2.78
1979	156.80	213	45.50	0.723	12,000	2.88
1980	179.60	259	52.50	1.030	13,400	3.12
1981	193.70	275	60.00	1.310	14,900	3.26
1982	176.60	278	63.70	1.240	16,000	3.26
1983	192.60	249	64.60	1.140	17,200	3.52
1984	194.30	250	70.20	1.140	17,400	3.60
1985	164.20	238	67.30	1.080	16,800	4.00***
1986	162.90	200**	65.60	0.840**	16,600	4.41***
1987	152.75**	190**	64.90	0.765**	16,700	4.59***

SOURCE: NYCRS, New York Agricultural Statistics. USDA, ASB, Agricultural Prices. *United States average. **Northeast region average. ***New York and New England combined.

The table above shows average prices of selected goods and services used on New York dairy farms. Chart A2 shows the ratio of prices received for milk and prices paid by New York dairy farmers as a percent change from 1977. The ratio has been on a downward trend since 1978 except for slight increases in 1985 and 1987.

Chart A2. RATIO OF PRICES RECEIVED FOR MILK AND PRICES PAID BY NEW YORK DAIRY FARMERS, 1977-1987



SOURCE: NYCRS, New York Agricultural Statistics.

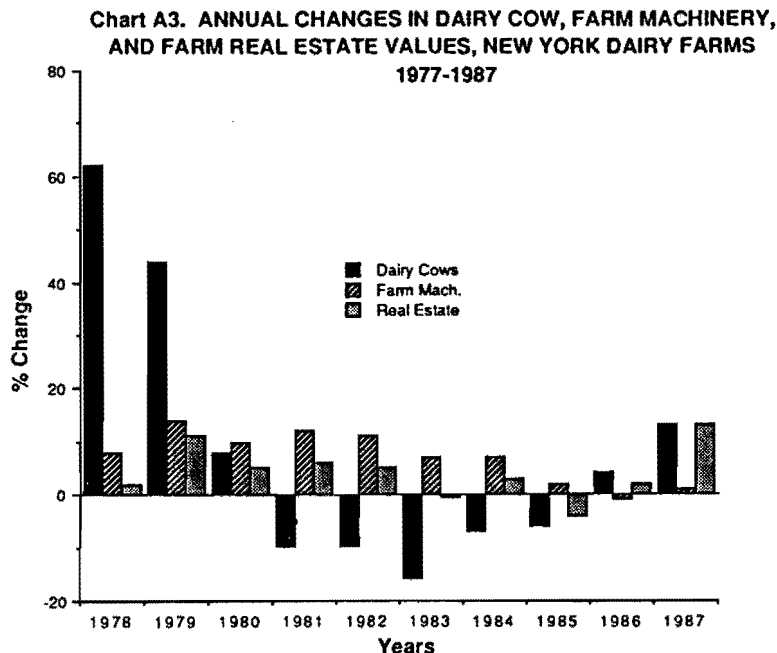
Inflation, farm profitability, supply and demand all have a direct impact on the inventory values on New York dairy farms. The table below shows year-end (December) prices paid for dairy cows (replacements), an index of these cow prices, an index of new machinery prices (U.S. average), the average per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

Table A3. VALUES OF NEW YORK DAIRY FARM INVENTORY ITEMS, 1977-1987

Year	Dairy Cows		Machinery*	Farm Real Estate	
	Value/Head	1977=100		Value/Acre	1977=100
1977	\$ 495	100	100	\$587	100
1978	800	162	109	600	102
1979	1,150	232	121	670	114
1980	1,240	251	134	720	123
1981	1,120	226	149	773	132
1982	1,010	204	163	821	140
1983	850	172	173	817	139
1984	790	160	181	842	143
1985	740	149	181	808	138
1986	770	156	179	824	140
1987	870	176	181	931	159

SOURCE: NYGRS, New York Agricultural Statistics. USDA, ASB, Agricultural Prices. *United States average.

Dairy cow prices turned up in 1986 after declining for five consecutive years. The 1987 value per head averaged \$100 higher than in 1986. New machinery prices declined in 1986 for the first time in eight years, however, 1987 prices increased slightly. Farm real estate values continue to strengthen. All of these changes are associated with the gradual improvement in economic conditions on dairy farms.



SOURCE: USDA, ERS, Farm Real Estate Market Developments Outlook and Situation. NYGRS, New York Agricultural Statistics.