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DAIRY FARM MANAGEMENT

BUSINESS SUMMARY NEW YORK 1988

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ABSTRACT

This summary and analysis of 406 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. These farms which are above average in size and management compared to all New York dairy farms averaged 102 cows per farm and 16,882 pounds of milk sold per cow in 1988. Net farm income excluding appreciation, which is the return to the operator's labor, management, capital, and other unpaid family labor, averaged \$38,500 per farm. The rate of return to all capital invested in the farm business averaged 7.6 percent in 1988.

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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 1988, about 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 90 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 eight 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 406 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 406 specialized dairy farms represent a cross section of better than average commercial dairy farm owner-operators in the State. Dairy farm renters, dairy-cash crop farmers with crop sales exceeding 10 percent of milk sales, and part-time dairy operators have been excluded from the main body of this report. Dairy farm renters are summarized separately in the supplemental information section of the publication.

Features

Accrual 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.

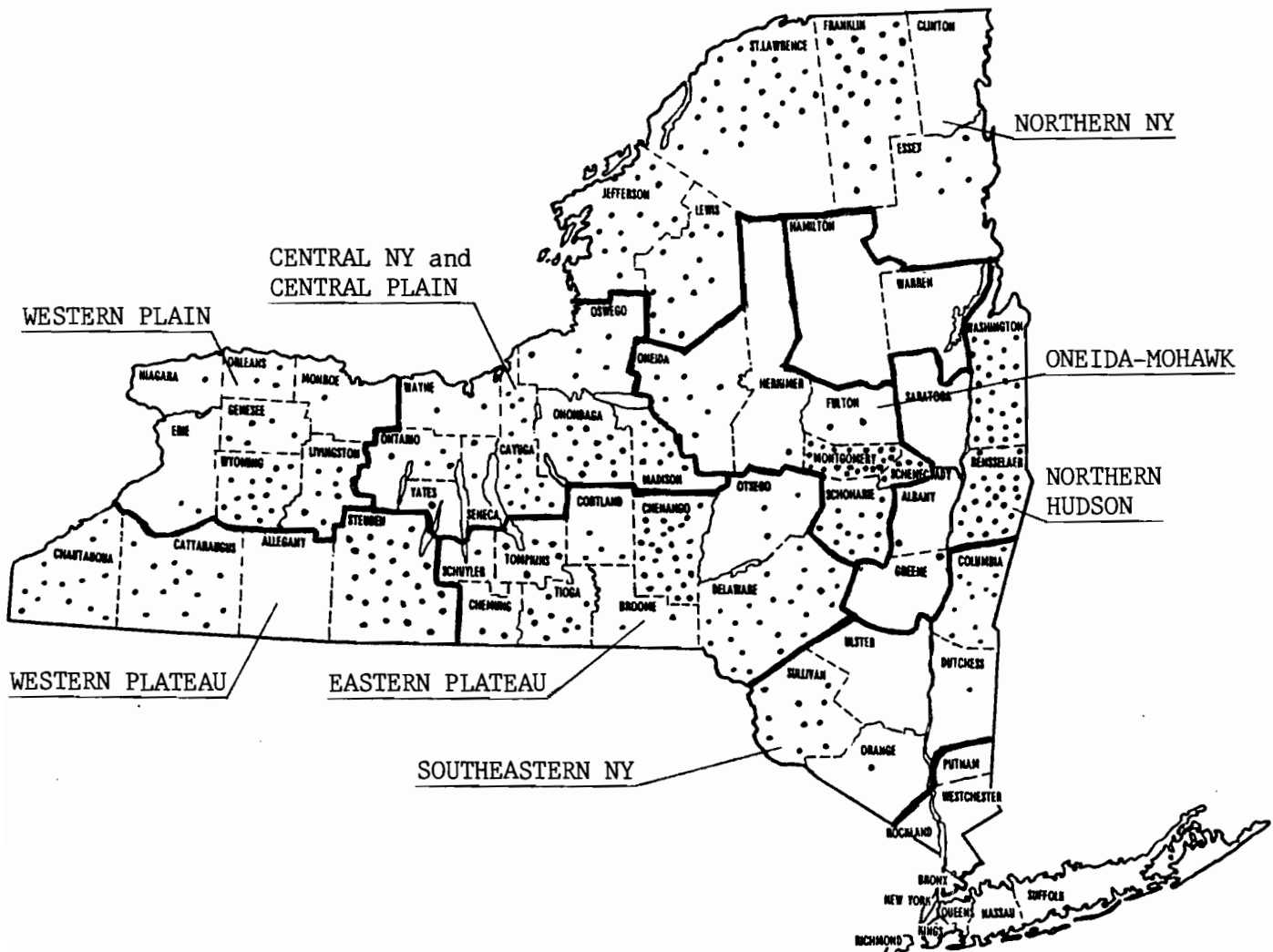
The dairy program analysis includes data on the costs of producing milk (pages 20-24) and separate farm business charts using data from freestall farms versus conventional stall dairy farms (pages 44-48).

Acknowledgements

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Figure 1.

LOCATION OF THE 406 NEW YORK DAIRY FARMS
IN THE 1988 DAIRY FARM BUSINESS SUMMARY



1988 Regional Summary Publications

<u>Region</u>	<u>Publications</u>	<u>Author(s)</u>
Northern New York	A.E. Ext. 89-8	Stuart F. Smith & Linda D. Putnam
Western Plain Region	A.E. Ext. 89-9	Stuart F. Smith & Linda D. Putnam
Northern Hudson Region	A.E. Ext. 89-10	Stuart F. Smith & Linda D. Putnam
Eastern Plateau Region	A.E. Ext. 89-11	Robert A. Milligan, Linda D. Putnam, Carl A. Crispell, Jacqueline M. Mierek, & Gerald A. LeClair
Oneida-Mohawk Region	A.E. Ext. 89-12	Eddy L. LaDue, George M. Andrew, & Brian F. Aldrich
Central New York & Central Plain	A.E. Ext. 89-13	Wayne A. Knoblauch & Linda D. Putnam
Western Plateau Region	A.E. Ext. 89-14	George L. Casler
Southeastern New York	A.E. Ext. 89-15	Stuart F. Smith & Linda D. Putnam
Western Plateau Region	A.E. Ext. 89-14	George L. Casler
Southeastern New York	A.E. Ext. 89-15	Stuart F. Smith & Linda D. Putnam

GROWTH AND PROGRESS ON NEW YORK DAIRY FARMS

Two hundred and forty-two farmers have participated in the dairy farm business summary for each of the years 1986, 1987, and 1988. Over this three year period, milk sold per farm increased by nearly 214,000 pounds or 13 percent as average herd size increased by eight cows or nearly eight percent, and milk output per cow increased 714 pounds or four percent.

Cow numbers, and milk output per farm and per cow, increased at relatively steady rates during this three year period. The size of the farm labor force grew only three percent from 1986 to 1988 and the growth occurred at a decreasing rate. Therefore, milk sold per worker jumped nine percent and grew at an increasing rate over the period.

Crop yields were affected by a wide variety of crop conditions during this three year period, the 1988 drought being the most serious. Relatively low 1988 crop yields caused year-end crop inventories to fall on many farms which is reflected in 1988 costs of production and profitability measures.

Feed costs have increased dramatically since 1986 with the largest increase occurring in 1988. Twenty-seven percent of 1988 milk receipts or \$614 per cow were used to purchase dairy grains and concentrates. Feed and crop expenses per hundredweight of milk sold have increased 16 percent in two years and jumped 12 percent from 1987 to 1988. Feed costs have not been this high since the early 1980's and have not increased as rapidly since 1973.

The average operating costs of producing milk declined three percent from 1986 to 1987 then increased 3.5 percent from 1987 to 1988. Total costs per hundredweight followed the same pattern. The average price received per hundredweight of milk sold increased from \$12.72 to \$13.07 or three percent over the total time period. The margin or difference between the total costs of producing milk and the average price received improved from \$-0.97 per hundredweight in 1986 to \$-0.41 per hundredweight in 1988.

Capital investments per cow have increased by almost six percent between 1986 and 1988. Machinery and equipment investments per cow have increased two percent in 1988 over 1986 and 1987. Real estate investments per cow have steadily increased. Capital turnover at 2.13 years in 1987 was at its lowest and healthiest point during this three year period, increasing slightly in 1988 to 2.15 years.

Although average net farm income without appreciation increased 48 percent from 1986 to 1988, the increase was less than four percent in the last year. Other measures show farm profitability doubling in 1987 and then declining in 1988. Labor and management income per operator dropped three percent in 1988 after increasing 124 percent in 1987. Return on all capital with appreciation dropped from 9.1 percent in 1987 to 8.1 percent in 1988.

Over this period net worth has exhibited a steady increase from \$386,810 in 1986 to \$466,614 in 1988. The debt to asset ratio has improved from 0.36 in 1986 to 0.33 in 1988. Farm debt per cow was down three percent to \$1,989 in 1987 and remained below \$2,000 in 1988.

In 1988, these 242 farms were larger, producing more milk, more efficient, and financially stronger than in the past two 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 1986-1988
Same 242 New York Dairy Farms

Selected Factors	1986	1987	1988
<u>Size of Business</u>			
Average number of cows	104	108	112
Average number of heifers	84	85	88
Milk sold, pounds	1,697,310	1,800,402	1,911,062
Worker equivalent	3.24	3.30	3.34
Total tillable acres	304	308	317
<u>Rates of Production</u>			
Milk sold per cow, pounds	16,385	16,672	17,099
Hay DM per acre, tons	2.8	2.7	2.6
Corn silage per acre, tons	14.5	16.5	14.0
<u>Labor Efficiency</u>			
Cows per worker	32	33	33
Milk sold per worker, pounds	524,026	545,930	571,842
<u>Cost Control</u>			
Grain & concentrate purchased as percent of milk sales	23%	24%	27%
Dairy feed & crop expense per cwt. milk	\$3.97	\$4.11	\$4.60
Labor & machinery costs per cow	\$786	\$814	\$832
Oper. cost of producing cwt.milk	\$9.45	\$9.17	\$9.49
Total cost of producing cwt.milk	\$13.69	\$13.26	\$13.48
Milk receipts per cwt. milk	\$12.72	\$12.89	\$13.07
<u>Capital Efficiency</u>			
Farm capital per cow (average for year)	\$5,713	\$5,848	\$6,035
Machinery & equip. per cow	\$1,058	\$1,059	\$1,080
Real estate per cow	\$2,690	\$2,746	\$2,803
Livestock investment per cow	\$1,150	\$1,192	\$1,244
Capital turnover, years	2.26	2.13	2.15
<u>Profitability</u>			
Net farm income w/o apprec.	\$29,187	\$41,634	\$43,187
Net farm income w/apprec.	\$45,040	\$66,987	\$64,831
Labor & management income per operator/manager	\$6,631	\$14,861	\$14,400
Rate return on:			
equity capital w/apprec.	4.9%	9.6%	8.1%
all capital w/apprec.	6.3%	9.1%	8.1%
all capital w/o apprec.	3.6%	5.0%	4.9%
<u>Financial Summary, End Year</u>			
Farm net worth	\$386,810	\$430,785	\$466,614
Change in net worth w/apprec.	\$22,704	\$41,778	\$35,624
Debt to asset ratio	0.36	0.34	0.33
Farm debt per cow	\$2,059	\$1,989	\$1,996

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 1988 are presented in the following table.

Table 2. BUSINESS CHARACTERISTICS AND RESOURCES USED
406 New York Dairy Farms, 1988

<u>No. Dairy Livestock</u>	<u>Cows</u>	<u>Heifers</u>	<u>Dairy Records</u>	<u>Number</u>	<u>Percent</u>
Beginning of Year	101	81	D.H.I.C.	309	76
End of Year	104	83	Owner Sampler	43	11
Average for Year	102	82	Other	22	5
			None	32	8
<u>Type of Business</u>	<u>Number</u>	<u>Percent</u>	<u>Labor Force</u>	<u>Average</u>	<u>Percent</u>
Sole Proprietorship	270	67	Operators	16.3 mo.	43
Partnership	115	28	Family	4.5 mo.	12
Corporation	21	5	Family unpaid	2.8 mo.	7
			Hired	14.4 mo.	38
			Total Months	38.0 mo.	100
<u>Barn Type</u>	<u>Number</u>	<u>Percent</u>			
Stanchion	225	55			
Freestall	150	37			
Combination	31	8			
<u>Milking System</u>	<u>Number</u>	<u>Percent</u>		<u>Average</u>	
Bucket & Carry	3	1	Operators (total = 550)	1.35	
Dumping Station	22	5	Age	44	
Pipeline	224	55	Education	13 yrs.	
Herringbone	142	35	Estimated Value of		
Other Parlor	15	4	Labor & Management	\$27,133	
<u>Milking Frequency</u>	<u>Number</u>	<u>Percent</u>			
2x/day	379	93	<u>Land Used</u>	<u>Number</u>	<u>Average</u>
3x/day	22	5	Total acres:		
Other	5	1	Owned	406	356
			Rented	349	270
<u>Business Records</u>	<u>Number</u>	<u>Percent</u>	<u>Tillable acres:</u>		
Account Book	174	43	Owned	406	198
Agrifax (mail-in)	62	15	Rented	346	122
ELFAC	31	8	Total	406	302
On-Farm Computer	53	13			
Other	86	21			

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

There were 550 full-time operator equivalents on the 406 dairy farms for an average of 1.35 operators per farm. The operators averaged 44 years of age and 13 years of formal education. Additional data on the labor force is in Table 35. All 406 farm businesses included in the regular dairy summary own farm real estate. Dairy farm renters are summarized separately later in this publication. However, 346 of the dairy farm owners rented an average of 122 acres of tillable land in 1988. The 406 farms averaged 302 total tillable acres per farm of which 104 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 nondairy livestock to allow more thorough analysis of dairy herd feeding costs. The costs of growing grain and roughage are not included in cash and accrual feed expenses.

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 insurance, 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 406 farms averaged \$546 per day and 89 percent of total farm accrual receipts.

Table 3.

CASH AND ACCRUAL FARM EXPENSES
406 New York Dairy Farms, 1988

Expense Item	Cash Paid	Change in Inventory or Prepaid Expense	Change in Accounts Payable	Accrual Expenses	Percent
<u>Hired Labor</u>	\$ 25,132	\$ -14*	\$ 64	\$ 25,182	13
<u>Feed</u>					
Dairy grain & conc.	62,711	-845	127	61,993	31
Dairy roughage	1,854	-37	28	1,845	1
Nondairy livestock	371	-1	0	370	<1
<u>Machinery</u>					
Mach. hire, rent/lease	2,086	0*	-31	2,055	1
Machinery repairs/parts	12,242	-12	31	12,261	6
Auto expense (farm share)	635	0*	-1	634	<1
Fuel, oil & grease	5,809	-16	36	5,829	3
<u>Livestock</u>					
Replacement livestock	1,954	0*	-4	1,950	1
Breeding	3,178	-8	-4	3,166	2
Vet & medicine	4,799	-27	16	4,788	2
Milk marketing	8,888	0*	-2	8,886	4
Cattle lease/rent	178	0*	8	186	<1
Other livestock expense	9,492	-39	13	9,466	5
<u>Crops</u>					
Fertilizer & lime	9,003	-306	17	8,714	4
Seeds & plants	3,848	-308	27	3,567	2
Spray, other crop exp.	3,299	0	28	3,327	2
<u>Real Estate</u>					
Land/bldg./fence repair	3,806	-49	62	3,819	2
Taxes	5,979	-61*	75	5,993	3
Rent & lease	4,123	10*	9	4,142	2
<u>Other</u>					
Insurance	3,888	-12*	-1	3,875	2
Telephone (farm share)	769	0*	-2	767	<1
Electricity (farm share)	5,741	3*	10	5,754	3
Interest paid	17,610	3*	-10	17,603	9
Miscellaneous	2,965	-1	-9	2,955	1
Total Operating	\$200,360	\$-1,720	\$487	\$199,127	100
Expansion livestock	\$ 2,253	\$ 0*	\$ 5	\$ 2,259	
Machinery depreciation				14,402	
Building depreciation				8,213	
TOTAL ACCRUAL EXPENSES				\$224,001	

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

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

Prepaid expenses (noted by * in the above table) are advance payments made for services and noninventory items. For example, advance payments for rent decreased an average of \$10 per farm in 1988, and that decrease is added to cash rent to determine the correct 1988 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 \$253,379 per farm. Total accrual receipts averaged \$262,510 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 \$27 per cow.

Table 4. CASH AND ACCRUAL FARM RECEIPTS
406 New York Dairy Farms, 1988

Receipt Item	Cash Receipts	Change in + Inventory	Change in Accounts + Receivable	Accrual = Receipts	Percent
Milk sales	\$221,638		\$2,415	\$224,052	85
Dairy cattle	16,281	\$3,666	-19	19,928	7
Dairy calves	4,183		2	4,185	2
Other livestock	430	69	0	499	<1
Crops	2,071	2,797	258	5,126	2
Government receipts	5,156	37*	-110	5,083	2
Custom machine work	306		-6	301	<1
Gas tax refund	214		2	216	<1
Other	3,100		88	3,188	1
- Nonfarm noncash capital**		(-) 67		(-) 67	
Total	\$253,379	\$6,502	\$2,631	\$262,510	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 live-stock 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 1987 to 1988. 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
406 New York Dairy Farms, 1988

Item	Average 406 Farms	Average Top 10% Farms*
Total accrual receipts	\$262,510	\$744,381
+ Appreciation: Livestock	5,107	7,261
Machinery	2,391	1,919
Real Estate	12,534	21,607
Other Stock/Cert.	253	696
= Total including appreciation	\$282,795	\$775,864
- Total accrual expenses	224,001	592,368
= Net Farm Income (with appreciation)	\$ 58,794	\$183,496
Net Farm Income (without appreciation)	\$ 38,509	\$152,013

*Average of 40 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
406 New York Dairy Farms, 1988

Item	Average 406 Farms		Average Top 10% Farms	
	With Apprec.	Without Apprec.	With Apprec.	Without Apprec.
Net farm income	\$58,794	\$38,509	\$183,496	\$152,013
- Family labor unpaid @ \$700 per month	1,950	1,950	1,645	1,645
= Return to Operator(s') Labor, Management, & Equity	\$56,844	\$36,559	\$181,851	\$150,368

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 above inflation that a farmer might expect to earn in comparable risk investments.

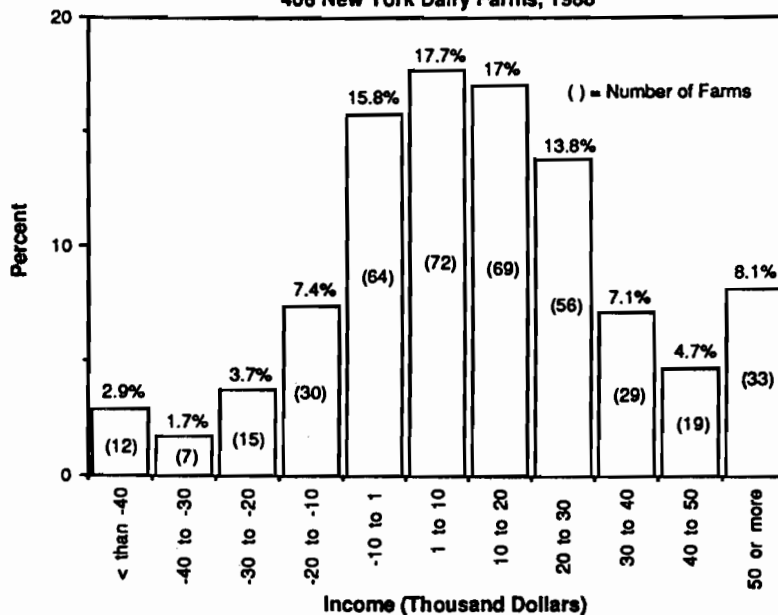
Labor and management income per operator measures the return to one full-time operator's labor and management. A full-time operator provides 12 months of labor and management.

Table 7. LABOR AND MANAGEMENT INCOME
406 New York Dairy Farms, 1988

Item	Average 406 Farms		Average Top 10% Farms
Return to operator(s') labor, management, & equity without appreciation	\$36,559		\$150,368
- Real interest @ 5% on \$409,571 equity capital for average & \$1,004,059 for the top 10%	20,479		50,203
= Labor & Management Income (1.35 operators)	\$16,080	(1.74)	\$100,165
Labor & Management Income per Operator	\$11,911		\$ 57,566

Labor and management income per operator averaged \$11,911 on these 406 dairy farms in 1988. 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 35 percent of the farms while 34 percent showed labor and management incomes of \$20,000 or more per operator.

Chart 1. DISTRIBUTION OF LABOR AND MANAGEMENT INCOMES PER OPERATOR
406 New York Dairy Farms, 1988



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
406 New York Dairy Farms, 1988

Item	Average 406 Farms	Average Top 10% Farms
Return to operators' labor, management, & equity capital with appreciation	\$56,844	\$181,851
- Value of operators' labor & management	<u>27,133</u>	<u>43,661</u>
= Return on equity capital with appreciation	\$29,711	\$138,190
+ Interest paid	\$17,603	\$36,959
= Return on total capital with appreciation	\$47,314	\$175,149
Return on equity capital without appreciation	\$ 9,426	\$106,707
Return on total capital without appreciation	\$27,029	\$143,666
Rate of return on average equity capital:		
with appreciation	7.3%	13.8%
without appreciation	2.3%	10.6%
Rate of return on average total capital:		
with appreciation	7.6%	12.0%
without appreciation	4.3%	9.9%

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
406 New York Dairy Farms, 1988

Item	Average
Labor & management income per farm	\$16,080
+ Cost of hired labor	25,182
+ Value of unpaid family labor	<u>1,950</u>
= Total Returns to All Labor & Management	\$43,212
Average worker equivalent	3.17
Returns per worker equivalent	\$13,632
Returns per hour (3,000 hours/worker/year)	\$4.54

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. 1988 FARM BUSINESS AND NONFARM BALANCE SHEET
406 New York Dairy Farms, 1988

Farm Assets			Farm Liabilities & Net Worth		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
<u>Current</u>			<u>Current</u>		
Farm cash, checking & savings	\$ 5,911	\$ 7,566	Accounts payable	\$ 4,929	\$ 5,427
Accounts rec.	18,413	21,040	Operating debt	4,176	5,772
Prepaid expenses	134	205	Short-term	3,051	3,743
Feed & supplies	47,000	51,446	Advanced Govt. Rec.	37	0
Total	\$ 71,458	\$ 80,257	Total	\$ 12,193	\$ 14,942
<u>Intermediate</u>			<u>Intermediate</u>		
Dairy cows:			Structured debt		
owned	\$ 88,501	\$94,026	1-10 years	\$ 76,594	\$ 78,612
leased	203	177	Financial lease		
Heifers	36,106	39,317	(cattle/mach.)	1,538	1,829
Bulls/other lvstk.	1,254	1,359	FLB & PCA stock	4,788	5,017
Mach./eq. owned	106,405	111,210	Total	\$ 82,920	\$ 85,458
Mach./eq. leased	1,335	1,652			
FLB & PCA stock	4,788	5,017	<u>Long-Term</u>		
Other stock & cert.	7,497	7,770	Structured debt		
Total	\$246,089	\$260,528	≥10 years	\$117,905	\$115,498
<u>Long-Term</u>			Financial lease		
Land/buildings:			(structures)	956	669
owned	\$288,489	\$301,236	Total	\$118,861	\$116,167
leased	956	669			
Total	\$289,445	\$301,905	Total Farm Liab.	\$213,974	\$216,567
Total Farm Assets	\$606,992	\$642,690	FARM NET WORTH	\$393,018	\$426,123
<u>Nonfarm Assets*</u>			<u>Nonfarm Liabilities*</u>		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Personal cash, chkg. & savings	\$ 6,265	\$ 6,714	Nonfarm Liab.	\$2,090	\$3,069
Cash value life ins.	4,013	4,842	NONFARM NET WORTH	\$63,359	\$73,961
Nonfarm real estate	36,788	44,130			
Auto (personal sh.)	2,695	3,357	<u>FARM & NONFARM*</u>		
Stocks & bonds	4,188	5,050	Total Assets	\$672,441	\$719,720
Household furn.	7,832	8,228	Total Liabilities	216,064	219,636
All other	3,668	4,709			
Total Nonfarm	\$65,449	\$77,030	TOTAL FARM & NON-FARM NET WORTH	\$456,377	\$500,084

*Average of 248 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 farm balance sheet analysis continues by examining financial and debt ratios and factors measuring levels of debt. Percent equity is calculated by dividing farm net worth by farm assets. Equity increases as the value of assets increase more than liabilities. The debt to asset ratio is compiled by dividing farm liabilities by farm 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.

Table 11. FARM BALANCE SHEET ANALYSIS
406 New York Dairy Farms, 1988

Item	Average 406 Farms	Average Top 10% Farms		
<u>Farm Financial Ratios:</u>				
Percent equity	66%	69%		
Debt/asset ratio: total	0.34	0.31		
long-term	0.38	0.30		
inter. & current	0.29	0.32		
<u>Change in Net Worth:</u>				
Without appreciation	\$12,820	\$65,908		
With appreciation	\$33,105	\$97,391		
<u>Farm Debt Analysis:</u>				
Accts. payable as % of total debt	3%	1%		
Long-term liab. as % of total debt	54%	43%		
Current & int. liab. as % of tot. debt	46%	57%		
<u>Farm Debt Levels:</u>		Per Tillable	Per Tillable	
	Per Cow	Acre Owned	Per Cow	Acre Owned
Total farm debt	\$2,063	\$1,094	\$1,773	\$1,131
Long-term debt	1,106	587	754	481
Intermediate & current debt	956	507	1,018	650

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
406 New York Dairy Farms, 1988

Item	Real Estate	Machinery/Equip.	Livestock
Value beg. of year	\$288,489	\$106,405	\$125,860
Purchases	\$14,918*	\$17,199	
+ Nonfarm noncash transfer**	723	103	
- Lost capital	4,275		
- Sales	1,448	487	
- Depreciation	<u>8,213</u>	<u>14,402</u>	
= Net investment	1,705	2,413	3,735
+ Appreciation	<u>11,042***</u>	<u>2,391</u>	<u>5,107</u>
Value end of year	\$301,236	\$111,210	\$134,702

*\$2,585 land and \$12,333 buildings and/or depreciable improvements.

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

***Excludes \$1,492 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 \$1,051 indicates that on average, farms had more inflows than were accounted for by outflows.

Table 13. ANNUAL CASH FLOW STATEMENT
406 New York Dairy Farms, 1988

Item	Average 406 Farms	Average Top 10% Farms
<u>Cash Inflows</u>		
Beginning farm cash, checking & savings	\$ 5,911	\$ 13,824
Cash farm receipts	253,379	697,915
Sale of assets: Machinery	487	1,425
Real estate	2,323	175
Other stock & certificates	593	1,692
Money borrowed (intermediate & long-term)	29,882	89,620
Money borrowed (short-term)	2,830	6,410
Increase in operating debt	1,596	11,349
Nonfarm income	3,849	3,708
Cash from nonfarm capital used in business	2,231	1,538
Money borrowed - nonfarm	951	0
Total	\$304,031	\$827,656
<u>Cash Outflows</u>		
Cash farm expenses	\$200,359	\$529,831
Capital purchases: Expansion livestock	2,253	14,160
Machinery	17,199	40,498
Real estate	14,918	71,862
Other stock & certificates	613	1,215
Principal payments (intermediate & long-term)	30,271	76,381
Principal payments (short-term)	2,137	2,760
Decrease in operating debt	0	0
Personal withdrawals & family expenditures, including nonfarm debt payments	27,664	62,933
Ending farm cash, checking & savings	7,566	24,292
Total	\$302,980	\$823,932
Imbalance (error)	\$ 1,051	\$ 3,723

Table 14.

ANNUAL CASH FLOW BUDGETING DATA
406 New York Dairy Farms, 1988

Item	Average 406 Farms		Average Top 10% Farms	
	Total	Per Cow	Total	Per Cow
Average number of cows	102		256	
<u>Accrual Operating Receipts</u>				
Milk	\$224,052	\$2,199	\$621,436	\$2,428
Dairy cattle	19,927	196	63,461	248
Dairy calves	4,185	41	11,442	45
Other livestock	499	5	1,205	5
Crops	5,126	50	20,500	80
Miscellaneous receipts	8,788	86	26,338	103
Total	\$262,578	\$2,577	\$744,381	\$2,908
<u>Accrual Operating Expenses</u>				
Hired labor	\$ 25,182	\$ 247	\$ 94,323	\$ 369
Dairy grain & concentrate	61,993	608	167,507	654
Dairy roughage	1,845	18	4,917	19
Nondairy feed	370	4	968	4
Machinery hire/rent/lease	2,055	20	3,497	14
Machinery repairs/parts & auto	12,895	127	29,607	116
Fuel, oil & grease	5,829	57	13,776	54
Replacement livestock	1,950	19	3,035	12
Breeding	3,166	31	7,905	31
Vet & medicine	4,788	47	14,514	57
Milk marketing	8,886	87	18,418	72
Cattle lease	186	2	553	2
Other livestock expense	9,466	93	24,367	95
Fertilizer & lime	8,714	86	21,291	83
Seeds & plants	3,567	35	8,143	32
Spray/other crop expense	3,327	33	9,540	37
Land, building, fence repair	3,819	37	10,080	39
Taxes	5,993	59	11,810	46
Real estate rent/lease	4,142	41	11,153	44
Insurance	3,875	38	8,110	32
Utilities	6,521	64	13,570	53
Miscellaneous	2,955	29	7,585	30
Total Less Interest Paid	\$181,524	\$1,782	\$484,669	\$1,894
<u>Net Accrual Operating Income</u>				
(without interest paid)	\$81,054	\$796	\$259,712	\$1,015
- Change in livestock/crop inv.	6,502	64	33,804	132
- Change in accounts rec.	2,631	26	12,663	49
+ Change in feed/supply inv.	-1,721	-17	-8,372	-33
+ Change in accounts payable*	499	5	434	2
NET CASH FLOW	\$70,699	\$694	\$205,307	\$ 802
- Net personal withdrawals & family expenditures	22,864	224	59,225	231
Available for Farm Debt				
Payments & Investments	\$47,835	\$470	\$146,082	\$ 571
- Farm Debt Payments**	49,535	486	114,438	447
Avail. for Farm Investments	\$-1,700	\$-16	\$ 31,644	\$ 124
- Capital Purchases: cattle, machinery & improvements	34,983	343	127,735	499
Capital Deficit	\$-36,683	\$-359	\$-96,091	\$ -375

*Excludes change in interest account payable.

**Includes any refinancing in 1988.

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 335 farms, and the top 10 percent of these farms, that completed Dairy Farm Business Summaries for both 1987 and 1988.

Table 15. FARM DEBT PAYMENTS PLANNED
New York Dairy Farms, 1988

Debt Payments	Same 335 Dairy Farms			Average Top 10% Farms		
	1988 Payments		Planned 1989	1988 Payments		Planned 1989
	Planned	Made*		Planned	Made	
Long-term	\$15,972	\$18,408	\$15,617	\$35,178	\$34,901	\$30,233
Intermediate-term	23,139	31,277	23,858	58,659	91,665	58,697
Short-term	2,464	2,403	2,094	9,145	3,202	5,172
Operating (net reduction)	586	0	2,617	1,335	0	18,235
Accounts payable (net reduction)	862	0	759	640	0	1,304
Total	\$43,023	\$52,089	\$44,944	\$104,956	\$129,769	\$113,641
Per cow	\$403	\$488		\$363	\$449	
Per cwt. 1988 milk	\$2.38	\$2.88		\$1.96	\$2.42	
Percent of total 1988 receipts	15%	19%		12%	15%	
Percent of 1988 milk receipts	18%	22%		15%	18%	

*If refinancing of loans occurred in 1988, the refinanced amount is reflected in debt payments made.

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, 1988

Item	Same 335 Dairy Farms	Average Top 10% Farms
Cash farm receipts	\$269,300	\$792,692
- Cash farm expenses	211,877	603,369
+ Interest paid	18,074	42,495
- Net personal withdrawals from farm**	24,199	63,422
(A) = Amount Available for Debt Service	\$ 51,298	\$168,396
(B) = Debt Payments Planned for 1988	\$ 43,023	\$104,956
(A ÷ B) = Cash Flow Coverage Ratio for 1988	1.19	1.60

**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
406 New York Dairy Farms, 1988

Item	Average 406 Farms			Average Top 10% Farms		
	<u>Owned</u>	<u>Rented</u>	<u>Total</u>	<u>Owned</u>	<u>Rented</u>	<u>Total</u>
<u>Land</u>						
Tillable	198	104	302	417	212	629
Nontillable	52	11	62	41	7	48
Other nontillable	<u>106</u>	<u>8</u>	<u>114</u>	<u>181</u>	<u>4</u>	<u>185</u>
Total	356	123	478	639	223	862
<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	402	158	2.6 tn DM	40	251	3.1 tn DM
Corn silage	374	81	14.1 tn 4.7 tn DM	40	205	15.0 tn 5.0 tn DM
Other forage	31	20	2.0 tn DM	3	34	2.0 tn DM
Total forage	406	232	3.3 tn DM	40	458	3.9 tn DM
Corn grain	201	67	102.4 bu	29	124	116.2 bu
Oats	86	30	45.4 bu	7	46	51.4 bu
Wheat	27	25	52.9 bu	6	37	50.2 bu
Other crops	46	27		11	38	
Tillable pasture	122	31		16	51	
Idle	150	44		18	82	
Total Tillable Acres	406	302		40	629	

Crop acres and yields compiled for the average represent only the number of farms reporting each crop. All but four of the 406 farms produced hay or hay crop silage in 1988. Ninety-two percent produced corn silage, 50 percent grew and harvested corn grain, and 21 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
406 New York Dairy Farms, 1988

Item	Average 406 Farms	Average Top 10% Farms
Total tillable acres per cow	2.96	2.46
Total forage acres per cow	2.27	1.79
Harvested forage dry matter, tons per cow	7.42	7.01

In the fourth year of collecting information on individual crop production costs, 236 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 406 farms and the expenses for individual crops are for the 236 farms which submitted data.

Table 19. CROP RELATED ACCRUAL EXPENSES
New York Dairy Farms, 1988

Expense	Average	Average 236 Farms Reporting Individual Crop Costs					
	406 Farms	Hay Crop		All	Corn	Corn	
	Total			Corn	Silage	Grain	
	Per Tillable Acre	Per Acre	Per Ton DM	Per Acre	Per Ton DM	Per Dry Shell Bu.	
Fertilizer & lime	\$28.89	\$11.27	\$4.37	\$24.81	\$ 5.25	\$0.24	
Seeds & plants	11.83	4.21	1.63	10.43	2.21	0.10	
Spray & other crop expense	<u>11.03</u>	<u>2.67</u>	<u>1.03</u>	<u>12.56</u>	<u>2.66</u>	<u>0.12</u>	
Total	\$51.75	\$18.15	\$7.03	\$47.80	\$10.12	\$0.46	
Average Top 10% Farms:							
		Average Top 20 Farms Reporting Individual Crop Costs					
Fertilizer & lime	\$33.83	\$10.28	\$3.36	\$24.66	\$4.93	\$0.21	
Seeds & plants	12.94	4.57	1.50	10.30	2.06	0.09	
Spray & other crop expense	<u>15.16</u>	<u>3.86</u>	<u>1.26</u>	<u>11.90</u>	<u>2.38</u>	<u>0.10</u>	
Total	\$61.92	\$18.71	\$6.12	\$46.86	\$9.37	\$0.40	

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
406 New York Dairy Farms, 1988

Machinery Expense Item	Average 406 Farms		Average Top 10% Farms	
	Total Expenses	Per Til. Acre	Total Expenses	Per Til. Acre
Fuel, oil & grease	\$ 5,828	\$ 19.32	\$13,775	\$ 21.89
Machinery repairs & parts	12,261	40.65	28,849	45.84
Machine hire, rent & lease	2,055	6.81	3,497	5.56
Auto expense (farm share)	634	2.10	758	1.20
Interest (5%)	5,440	18.04	11,170	17.75
Depreciation	<u>14,402</u>	<u>47.75</u>	<u>32,788</u>	<u>52.09</u>
Total	\$40,620	\$134.67	\$90,837	\$144.32

Table 21. CROP RELATED ACCRUAL EXPENSES BY HAY CROP PRODUCTION PER ACRE
236 New York Dairy Farms, 1988

Item	Tons of Hay Crop Dry Matter Per Acre				
	<2.0	2.0-2.4	2.5-2.9	3.0-3.4	≥3.5
Hay crop, tons DM/acre	1.5	2.3	2.7	3.2	4.0
Farms reporting crop expense breakdowns	58	61	42	39	36
Average number hay crop acres for farms reporting	156	147	145	129	174
<u>Accrual Crop Expense</u>					
<u>Per Acre of Hay Crop:</u>					
Fertilizer & lime	\$ 9.24	\$ 8.81	\$10.01	\$17.62	\$14.83
Seeds & plants	3.17	3.90	3.86	4.92	6.26
Spray & other crop expense	<u>1.12</u>	<u>1.87</u>	<u>2.80</u>	<u>2.48</u>	<u>6.43</u>
Total	\$13.53	\$14.58	\$16.67	\$25.02	\$27.52
<u>Accrual Crop Expense</u>					
<u>Per Ton DM of Hay Crop:</u>					
Fertilizer & lime	\$6.04	\$3.91	\$3.65	\$5.48	\$3.67
Seeds & plants	2.07	1.73	1.41	1.53	1.55
Spray & other crop expense	<u>0.73</u>	<u>0.83</u>	<u>1.02</u>	<u>0.77</u>	<u>1.59</u>
Total	\$8.84	\$6.47	\$6.08	\$7.78	\$6.81

Table 22. CROP RELATED ACCRUAL EXPENSES BY CORN PRODUCTION PER ACRE
227 New York Dairy Farms, 1988

Item	Tons Corn Silage/Acre			Dry Shell Bushels of Corn Grain Per Acre		
	0-12	13-17	≥18	0-87	88-112	≥113
Corn yield per acre	10.6	15.2	19.5	74.9	99.3	130.0
Farms reporting crop expense breakdowns	84	114	29	158	36	33
Average number corn acres for farms reporting	89	112	98	85	125	156
<u>Accrual Crop Exp./Acre of Corn</u>						
Fertilizer & lime	\$22.12	\$24.37	\$34.31	\$23.19	\$25.35	\$28.25
Seeds & plants	11.21	9.92	10.80	10.98	9.36	10.12
Spray & other crop expense	<u>10.86</u>	<u>13.11</u>	<u>14.50</u>	<u>13.48</u>	<u>11.15</u>	<u>11.67</u>
Total	\$44.19	\$47.40	\$59.61	\$47.65	\$45.86	\$50.05
<u>Accrual Crop Expense Per:*</u>						
	Ton DM of Corn Silage			Dry Shell Bushel of Corn Grain		
Fertilizer & lime	\$ 6.16	\$4.80	\$5.28	\$0.31	\$0.26	\$0.22
Seeds & plants	3.12	1.95	1.66	0.15	0.09	0.08
Spray & other crop expense	<u>3.02</u>	<u>2.58</u>	<u>2.23</u>	<u>0.18</u>	<u>0.11</u>	<u>0.09</u>
Total	\$12.30	\$9.33	\$9.17	\$0.64	\$0.46	\$0.39

*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 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 39 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
406 New York Dairy Farms, 1988

Item	Dairy Cows		Heifers				Calves	
	No.	Value	Bred		Open		No.	Value
Beg. year (owned)	101	\$88,501	31	\$20,533	26	\$10,737	24	\$4,836
+ Change w/o apprec.		2,387		839		362		78
+ Appreciation		<u>3,138</u>		<u>953</u>		<u>604</u>		<u>376</u>
End year (owned)	104	\$94,026	32	\$22,325	27	\$11,703	24	\$5,290
End incl. leased	105							
Average number	102		82	(all age groups)				

Average Top 10% Farms:

Beg. year (owned)	247	\$209,702	84	\$51,212	59	\$22,622	50	\$10,097
+ Change w/o apprec.		13,717		8,385		799		355
+ Appreciation		<u>4,058</u>		<u>1,647</u>		<u>846</u>		<u>642</u>
End year (owned)	263	\$227,477	97	\$61,244	60	\$24,267	52	\$11,094
End incl. leased	266							
Average number	256		200	(all age groups)				

There is a strong relationship between farm size and farm income on well managed dairy farms. When data is sorted by herd size categories this relationship becomes apparent. Net farm income increased 1,716 percent while labor and management income per operator jumped \$108,318 as herd size increased from less than 40 to over 300 cows per farm.

Table 24. COWS PER FARM AND FARM INCOME MEASURES
406 New York Dairy Farms, 1988

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	29	1.66	\$ 12,875	\$ 2,119
40 to 54	47	67	1.87	15,005	2,782
55 to 69	61	81	2.42	19,823	2,415
70 to 84	77	53	2.73	30,236	8,313
85 to 99	93	36	2.91	38,682	13,710
100 to 149	119	81	3.54	47,404	13,886
150 to 199	172	25	4.90	52,624	10,480
200 to 299	241	21	6.02	69,533	17,676
300 & over	453	13	10.18	233,809	110,437

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
406 New York Dairy Farms, 1988

Item	Average 406 Farms	Average Top 10% Farms
Total milk sold, lbs.	1,720,023	4,719,047
Milk sold per cow, lbs.	16,882	18,437
Average milk plant test, percent butterfat	3.74	3.57

Farms with higher rates of production tend to have higher profits. In 1988, the farms that sold more than 17,000 pounds of milk per cow had above average profit margins.

Table 26. MILK SOLD PER COW AND FARM INCOME MEASURES
406 New York Dairy Farms, 1988

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	23	80	\$14,127	\$177	\$-1,669
12,000 to 13,999	33	76	19,718	259	1,779
14,000 to 14,999	45	86	22,450	261	4,133
15,000 to 15,999	55	85	30,708	361	9,014
16,000 to 16,999	76	105	31,448	300	6,844
17,000 to 17,999	72	97	40,559	418	13,880
18,000 to 19,999	75	127	60,285	475	21,150
20,000 & over	27	145	78,831	544	36,926

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
406 New York Dairy Farms, 1988

Item	Average 406 Farms			Average Top 10% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
<u>Accrual Costs of Producing Milk</u>						
Operating costs	\$162,928	\$1,599	\$9.47	\$412,843	\$1,613	\$8.75
Total costs with- out op(s') labor, mgmt. & capital	\$187,493	\$1,840	\$10.90	\$471,068	\$1,840	\$9.98
Total Costs	\$235,105	\$2,308	\$13.67	\$564,932	\$2,207	\$11.97
<u>Accrual Receipts from Milk</u>	\$224,052	\$2,199	\$13.03	\$621,436	\$2,428	\$13.17

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 406 dairy farms averaged \$13.67 per hundredweight, \$0.64 more than the average price received for milk sold from these farms during 1988. In 1987 the total cost of producing milk averaged \$13.55 on 426 New York dairy farms, \$0.60 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 \$2.77 per hundredweight in 1988. The actual estimated returns averaged \$2.13 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 \$15.05 for herds with less than 85 cows, and \$13.15 for those with 85 cows or more, for a difference of \$1.90 per hundredweight. Farms selling less than 17,000 pounds of milk per cow had an average total cost of production of \$14.96 while those selling 17,000 pounds and over averaged approximately \$12.99 for a difference of \$1.97 per hundredweight.

Table 28. FARM COST OF PRODUCING MILK BY HERD SIZE AND MILK SOLD PER COW
406 New York Dairy Farms, 1988

Number of Cows	By Herd Size			By Milk Sold Per Cow			
	Cost per Hundredweight			Cost per Hundredweight			
	Oper- ating	Exclud- ing Op.s Labor, Mgt. & Cap.	Total	Pounds Milk Sold Per Cow	Oper- ating	Exclud- ing Op.s Labor, Mgt. & Cap.	Total
Under 40	\$ 8.97	\$10.71	\$15.57	Under 12,000	\$10.76	\$12.49	\$16.81
40 to 54	9.60	11.26	15.30	12,000 to 13,999	9.76	11.40	15.56
55 to 69	9.36	11.04	15.16	14,000 to 14,999	9.79	11.38	14.49
70 to 84	9.13	10.67	14.17	15,000 to 15,999	9.19	10.74	13.88
85 to 99	9.08	10.57	13.31	16,000 to 16,999	9.97	11.36	14.06
100 to 149	9.37	10.80	13.65	17,000 to 17,999	9.38	10.86	13.66
150 to 199	10.02	11.34	13.73	18,000 to 19,999	9.12	10.48	12.95
200 to 299	9.93	11.27	13.17	20,000 & over	9.18	10.38	12.35
300 & over	9.41	10.56	11.87				

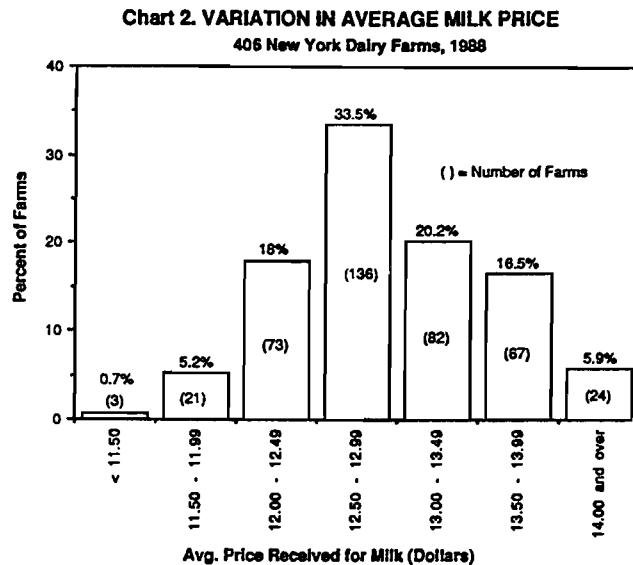
Costs of production are divided into 10 categories and presented for the 406 New York dairy farms and the top 10 percent farms (by net farm income, without appreciation) in Table 29 on page 23. Accrual non-milk receipts are deducted from accrual expenses on the assumption they were produced at cost. A \$2,800 increase in crop inventories and government receipts averaging \$5,083 per farm are included as a credit or negative cost of production under feed and crop expenses. Government receipts were primarily crop related in 1988.

Table 29. TOTAL COST OF PRODUCING MILK BASED ON WHOLE FARM DATA
406 New York Dairy Farms and Top 10 Percent of Farms, 1988

Cost Item	Average of 406 New York Dairy Farms		Average of Top 10% Farms	
	Total	Cost/Cwt. (17,200 cwt.)	Total	Cost/Cwt. (47,190 cwt.)
<u>Feed & Crop Expense</u>				
Dairy grain & concentrate	\$ 61,993		\$167,507	
Dairy roughage	1,845		4,917	
Nondairy feed	370		968	
Fertilizer & lime	8,714		21,291	
All other crop expenses	6,894		17,683	
- Crop sales & gov't receipts	<u>10,209</u>		<u>34,133</u>	
TOTAL	\$ 69,607	\$4.05	\$178,233	\$ 3.78
<u>Labor Costs</u>				
Value of operator's labor & management & family labor	\$29,083		\$ 45,306	
Hired labor	<u>25,182</u>		<u>94,323</u>	
TOTAL	\$ 54,265	\$3.15	\$139,629	\$ 2.96
<u>Machinery Costs</u>				
Depreciation	\$ 14,402		\$ 32,788	
Machine repairs, hire & auto	14,950		33,104	
Fuel, oil & grease	5,829		13,776	
- Gas tax ref & custom work	<u>517</u>		<u>1,427</u>	
TOTAL	\$ 34,664	\$2.02	\$ 78,241	\$ 1.66
<u>Livestock Expenses</u>				
Breeding fees, vet & medicine	\$ 7,954		\$ 22,419	
Other livestock expense	<u>9,466</u>		<u>24,367</u>	
TOTAL	\$ 17,420	\$1.01	\$ 46,786	\$ 0.99
<u>Milk Marketing</u>				
	\$ 8,886	\$0.52	\$ 18,418	\$ 0.39
<u>Livestock Ownership</u>				
Purchased livestock	\$ 4,209		\$ 17,195	
Cattle lease	186		553	
- Dairy cattle & lvstk. sales	<u>24,612*</u>		<u>76,109</u>	
TOTAL	\$-20,217	\$-1.18	\$-58,361	\$-1.24
<u>Real Estate Costs</u>				
Land, building & fence repair	\$ 3,819		\$ 10,080	
Taxes	5,993		11,810	
Rent/lease	4,142		11,153	
Building depreciation	<u>8,213</u>		<u>23,792</u>	
TOTAL	\$ 22,167	\$1.29	\$ 56,835	\$ 1.20
<u>Interest Expense</u>				
Interest paid	\$ 17,603		\$ 36,959	
Interest on equity @ 5%	<u>20,479</u>		<u>50,203</u>	
TOTAL	\$ 38,082	\$2.22	\$ 87,162	\$ 1.85
<u>Miscellaneous</u>				
Telephone & electricity	\$ 6,521		\$ 13,570	
Miscellaneous (incl. insurance)	6,830		15,695	
- Miscellaneous income	<u>3,188</u>		<u>11,278</u>	
TOTAL	\$ 10,163	\$0.59	\$ 17,987	\$ 0.38
TOTAL COST OF PRODUCING MILK	\$235,037	\$13.67	\$564,930	\$11.97
- Operator's labor, management & capital	<u>47,612</u>	<u>2.77</u>	<u>93,864</u>	<u>1.99</u>
TOTAL COST EXCLUDING OPERATOR'S LABOR, MANAGEMENT & CAPITAL	\$187,425	\$10.90	\$471,066	\$ 9.98

*Includes \$67 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 406 farms was \$13.03 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.



Fifty-one percent of the farms received from \$12.00 to \$12.99 per hundredweight of milk sold. Forty-three percent of the farms received \$13.00 or more per hundredweight while six 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
406 New York Dairy Farms, 1988

Item	Average 406 Farms		Average Top 10% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purc. dairy grain & conc.	\$608	\$3.60	\$654	\$3.55
Purchased dairy roughage	18	0.11	19	0.10
Total Purchased Dairy Feed	\$626	\$3.71	\$674	\$3.65
Purchased grain & conc.				
as % of milk receipts		28%		27%
Purchased feed & crop exp.	\$780	\$4.62	\$826	\$4.48
Purchased feed & crop exp.				
as % of milk receipts		35%		34%
Breeding	\$31	\$0.18	\$31	\$0.17
Veterinary & medicine	47	0.28	57	0.31
Milk marketing	87	0.52	72	0.39
Cattle lease	2	0.01	2	0.01
Other livestock expense	93	0.55	95	0.52

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
406 New York Dairy Farms, 1988

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
\$6.00 or more	31	82	6.7	15,020	\$ 6,688	\$-7,653
5.50 to 5.99	31	107	6.6	16,085	31,163	7,626
5.00 to 5.49	71	114	7.5	16,646	32,180	6,405
4.50 to 4.99	88	114	7.4	17,577	44,019	15,781
4.00 to 4.49	72	104	7.9	17,075	45,604	17,478
3.50 to 3.99	66	92	7.7	16,704	39,310	11,810
3.00 to 3.49	33	83	7.0	17,470	51,088	20,441
Less than 3.00	14	77	7.6	17,129	52,833	20,211

On the average, farms with purchased feed and crop expenses exceeding \$5.00 per hundredweight of milk sold reported below average farm profits. Milk output per cow was also below average on these three groups of farms. Profitability did not decline as feed and crop expenses were controlled because milk production was maintained at profitable levels.

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
406 New York Dairy Farms, 1988

Item (Average for Year)	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	\$197,152	\$6,133	\$2,072	\$3,156
Real estate		\$2,902		\$1,493
Machinery & equipment	\$34,803	\$1,083	\$366	
Capital turnover, years	2.21			
<u>Average Top 10% Farms:</u>				
Farm capital	\$226,697	\$5,696	\$2,316	\$3,496
Real estate		\$2,552		\$1,566
Machinery & equipment	\$35,283	\$887	\$361	
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
406 New York Dairy Farms, 1988

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	18	166	\$4,074	\$145,031	\$29,226	\$61,333
1.5 to 1.99	91	146	5,258	187,079	26,244	60,834
2.0 to 2.49	138	98	6,220	199,620	12,325	38,420
2.5 to 2.99	95	75	7,107	207,325	5,174	27,795
3.0 to 3.49	35	82	7,718	217,773	-2,779	22,365
3.5 & over	29	54	9,396	237,820	-8,104	9,288

The 40 farms with the highest net farm incomes (without appreciation) were considerably above the average of all 406 farms in the three measures of labor efficiency. The top 10 percent sold 35 percent more milk per worker than the average of all farms.

Table 34. LABOR EFFICIENCY
406 New York Dairy Farms, 1988

Labor Efficiency	Average 406 Farms		Average Top 10% Farms	
	Total	Per Worker	Total	Per Worker
Cows, average number	102	32	256	40
Milk sold, pounds	1,720,023	542,708	4,719,047	733,768
Tillable acres	302	95	629	98

The labor force averaged 3.17 full-time worker equivalents per farm. Forty-three percent of the labor was supplied by the farm operator/managers. There were two operators on 146 farms, three on 29 farms, and four 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 \$13 per cow less on the 40 farms in the top decile.

Table 35. LABOR FORCE INVENTORY AND COST ANALYSIS
406 New York Dairy Farms, 1988

Labor Force	Months	Age	Years of Educ.	Value of Labor & Mgmt.
Operator number 1	11.66	46	13	\$19,789
Operator number 2	3.80	40	14	6,050
Operator number 3	0.76	39	13	1,171
Operator number 4	0.09	35	13	<u>123</u>
Family paid	4.54			Total \$27,133
Family unpaid	2.79			
Hired	<u>14.41</u>			
Total	37.99	÷ 12 = 3.17 Worker Equivalent		
		1.35 Operator/Manager Equiv.		
<u>Average Top 10% Farms:</u>				
Total	77.18	÷ 12 = 6.43 Worker Equivalent		
Operators'	20.95	÷ 12 = 1.74 Operator/Manager Equiv.		

Labor Costs	Average 406 Farms			Average Top 10% Farms		
	Total	Per Cow	Per Til. Acre	Total	Per Cow	Per Til. Acre
Value op.s' lab. (\$1,000/mo)	\$16,298	\$160	\$ 54.03	\$ 20,950	\$ 82	\$ 33.29
Family unpd. (\$700/mo.)	1,950	19	6.46	1,645	6	2.61
Hired	25,183	247	83.49	94,323	369	149.86
Total Labor	\$43,431	\$426	\$143.98	\$116,918	\$457	\$185.76
Machinery Cost	40,620	399	134.67	90,837	355	144.32
Total Labor & Mach.	\$84,051	\$825	\$278.65	\$207,755	\$812	\$330.08

The relationship of labor efficiency to net farm income is very positive on the 406 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
406 New York Dairy Farms, 1988

Pounds of Milk Sold Per Worker	No. of Farms	No. of Cows	Pounds Milk Per Cow	Net Farm Income (w/o apprec.)	Labor & Mgmt. Income Per Operator
Under 300,000	30	48	14,275	\$ 10,566	\$-3,265
300,000 to 399,999	75	60	14,876	19,280	2,217
400,000 to 499,999	108	77	16,135	28,894	6,959
500,000 to 599,999	91	108	16,841	36,667	10,208
600,000 to 699,999	62	128	17,590	50,934	18,304
700,000 & over	40	233	18,365	106,403	53,478

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
406 New York Dairy Farms, 1988

Item	Average 406 Farms	Average Top 10% Farms
<u>Livestock</u>		
Breeding fees per cow	\$31	\$31
Veterinary & medicine per cow	\$47	\$57
Other livestock expense per cow	\$93	\$95
Milk marketing per cow	\$87	\$72
Milk marketing per hundredweight milk	\$0.52	\$0.39
<u>Real Estate</u>		
Land, building, & fence repair per cow	\$37	\$39
Taxes per cow	\$59	\$46
Taxes per \$1,000 year-end real estate value	\$20	\$18
Rent paid per cow	\$41	\$44
Rent paid per acre rented	\$34	\$50
Total real estate expense per cow	\$137	\$129
<u>Capital Cost</u>		
Interest paid per cow	\$173	\$144
Interest on equity per cow	\$201	\$196
Interest paid as percent of average debt	8.2%	8.1%
Machinery depreciation as percent of beginning inventory plus purchases	12%	13%
Total depreciation per cow	\$222	\$221
<u>Fixed & Variable Costs*</u>		
Total fixed costs per cow	\$789	\$729
Total variable costs per cow	\$1,627	\$1,788
Variable costs per hundredweight milk sold	\$9.65	\$9.70

*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 eight percent below the 406 farm average. This results from more intensive use and better management of the resources associated with fixed costs. Variable costs were five cents higher 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 406 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
406 New York Dairy Farms, 1988

<u>Number of Factors Better Than Average</u>	<u>Number of Farms</u>	<u>Percent of Farms</u>	<u>Net Farm Income without Appreciation</u>
4 factors better than average	28	7	\$105,017
3 factors better than average	70	17	71,362
2 factors better than average	114	28	35,602
1 factor better than average	126	31	21,724
0 factors better than average	68	17	13,280

*Factors were:

Size - number of cows - average 102.

Rate of production - pounds of milk sold per cow - average 16,882

Labor efficiency - pounds of milk sold per worker - average 542,708

Cost control - purchased feed and crop expense per hundredweight milk - average \$4.62

The 28 farms with four factors better than average averaged 204 cows, 18,684 pounds of milk sold per cow, 717,956 pounds of milk sold per worker, and \$3.99 per hundredweight purchased feed and crop expense. Net farm income averaged \$105,017 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 406 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
406 New York Dairy Farms, 1988

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
7.6	302	5,478,274	20,561	4.2	21	50	832,165
4.5	150	2,555,561	18,872	3.5	18	40	666,980
3.6	118	1,965,272	18,058	3.1	16	36	603,280
3.2	99	1,667,766	17,409	2.9	15	33	561,713
2.9	84	1,377,121	16,886	2.6	15	31	514,877
<hr/>							
2.6	72	1,156,002	16,298	2.4	14	29	467,076
2.3	62	1,000,552	15,785	2.2	13	27	432,494
2.1	55	857,485	15,024	2.0	12	25	397,092
1.9	47	716,763	14,142	1.7	11	22	347,768
1.3	36	542,182	11,650	1.2	8	17	266,376
<hr/>							
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		
\$286	14%	\$219	\$ 500	\$ 449	\$3.00		
401	20	282	618	564	3.64		
463	23	324	682	623	3.93		
522	26	358	726	678	4.22		
572	27	387	763	735	4.49		
<hr/>							
615	29	415	805	785	4.71		
655	31	442	854	824	4.94		
700	32	480	919	874	5.19		
767	35	539	1,000	939	5.54		
886	39	664	1,142	1,086	6.47		

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
406 New York Dairy Farms, 1988

Dairy 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.
\$2,974	\$16.53	\$ 878	\$ 5.97	\$1,697	\$11.22
2,723	15.33	1,170	7.50	1,980	12.42
2,594	14.89	1,309	8.18	2,092	13.03
2,496	14.62	1,409	8.72	2,206	13.45
2,413	14.37	1,506	9.19	2,303	13.85
2,339	14.17	1,588	9.62	2,383	14.45
2,251	13.98	1,671	10.06	2,489	14.93
2,149	13.72	1,775	10.51	2,613	15.68
1,984	13.30	1,923	11.11	2,749	16.59
1,663	12.65	2,122	12.96	3,085	19.26

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
\$191,562	\$152,016	\$190,109	\$150,408	\$100,436	\$82,939
91,674	64,178	89,579	62,028	36,434	27,820
71,488	47,392	69,860	45,854	25,726	19,437
59,330	39,075	57,028	37,325	19,032	14,022
48,938	32,619	47,001	30,813	13,156	10,174
40,055	25,596	38,398	24,169	7,890	6,156
32,386	20,332	30,714	17,339	2,740	2,308
24,193	13,859	21,562	11,857	-4,487	-3,781
16,077	6,208	13,720	3,924	-11,265	-9,151
-5	-11,890	-1,766	-13,815	-33,523	-34,040

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 44-48.

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 406 New York Dairy Farms, 1988

	Average 406 New York Farms	Average Top 10% Farms*		
<u>How farm assets are being used</u> (average for the year):				
Total assets (capital) per cow	\$6,133	\$5,696		
Farm assets in livestock	21%	21%		
Farm assets in farm real estate	47%	45%		
Farm assets in machinery	18%	16%		
<u>Measures of debt capacity & debt structure:</u>				
Equity in the business	66%	69%		
Farm debt per cow	\$2,063	\$1,773		
Long term debt/asset ratio**	0.38	0.30		
Intermediate & current term debt/asset ratio**	0.29	0.32		
Intermediate & current term debt as % of total	46%	57%		
<u>Debt repayment ability:***</u>				
Cash flow coverage ratio	1.19	1.60		
Debt payments made per cow	\$488	\$449		
Debt payments made as % of milk check	22%	18%		
<u>Indicators of annual financial progress:</u>				
	<u>Amount</u>	<u>Percent</u>	<u>Amount</u>	<u>Percent</u>
Annual change in farm assets	+\$35,698	+5.9%	+\$132,630	+9.5%
Annual change in farm debts	+\$2,593	+1.2%	+\$35,239	+8.1%
Annual change in farm net worth	+\$33,105	+8.4%	+\$97,391	+10.2%

*Forty 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 335 farms (31 farms for top 10 percent) that participated in Summary Program both in 1987 and 1988.

The most profitable farms carried \$290 less debt per cow, had a greater ability to make 1988 debt payments, and equity in their business was three percent more than that of the average.

Average farm assets grew faster than inflation during 1988 and although there was a small increase in farm debts, average net farm worth increased more than eight 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 406 New York Dairy Farms, 1988

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	
\$ 61	\$845	5.65	3%	\$ 112	
203	660	1.84	9	660	
293	572	1.42	14	1,196	
373	510	1.21	18	1,585	
435	462	1.09	20	1,941	
494	415	0.96	23	2,264	
563	361	0.83	27	2,630	
639	300	0.68	31	2,995	
742	222	0.52	36	3,465	
1,161	-23	-0.29	59	4,687	
Solvency				Profitability	
Leverage Ratio*	Percent Equity	Debt/Asset Ratio		% Rate of Return on:	
		Current & Intermediate	Long Term	Equity	Investment**
0.02	98	0.01	0.00	25	17
0.13	90	0.04	0.01	13	12
0.24	82	0.10	0.12	10	10
0.36	75	0.17	0.24	8	8
0.48	69	0.23	0.33	6	7
0.58	65	0.29	0.45	4	6
0.74	58	0.36	0.54	2	4
0.97	52	0.41	0.63	-0	3
1.35	43	0.50	0.77	-4	0
5.20	28	0.73	1.20	-16	-4
Efficiency (Capital)					
Capital Turnover (years)	Real Estate Investment Per Cow		Machinery Investment Per Cow		Total Farm Assets Per Cow
1.51	\$1,503		\$ 508		\$ 4,110
1.81	1,964		709		4,849
1.98	2,282		829		5,231
2.13	2,533		944		5,620
2.29	2,748		1,057		5,989
2.43	3,016		1,155		6,334
2.56	3,286		1,267		6,806
2.73	3,771		1,448		7,358
3.05	4,352		1,700		8,214
3.91	6,438		2,268		10,357

*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-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 \$233,809 per farm for the 300 or more herd size group and \$12,875 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). However, farm net worth increases substantially as herd size increases. The average net worth for all size farms increased during 1988.

Crop yields generally increased as herd size increased, but fertilizer and lime expenses and machinery cost per tillable acre also increased (Table 44). Milk sold per cow generally increased as herd size increased, ranging from 15,833 pounds on the farms with 40 to 54 cows to 19,113 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 20 at the lowest herd size category up to 45 at the largest size category.

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 45 on page 44 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 total 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 45-48 (Tables 46-49) 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.

Comparison by Milking System: Farms with herringbone parlors had the highest farm capital per worker and the highest cows per worker (Table 50). Farms with herringbone parlors were also larger and had the greatest profitability.

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.

Ten Year Comparisons: Average Cost of Producing Milk: Selected business factors and average data on the cost of producing milk from all specialized dairy farms included in each annual summary from 1979 through 1988 are presented in Tables 53 and 54. This 10 year comparison identifies steady growth in productivity and remarkable cost management as outstanding characteristics on these New York dairy farms.

The whole farm method of calculating the costs of producing milk described on pages 21 and 22 is used in compiling Table 54. The return per hundredweight to operator labor, capital, and management is the average farm price of milk minus the operating cost of milk production, depreciation, and unpaid family labor.

Receipts and Expenses per Hundredweight of Milk and Per Cow: Average itemized accrual receipts and expenses per cow and per hundredweight of milk sold are listed for all 406 dairy farms, 156 dairy farms selling less than 16,000 pounds of milk per cow, and 250 dairy farms selling 16,000 pounds per cow and more in Table 55 on page 54. Total operating expenses averaged 26 percent higher per cow but 22 cents per hundredweight lower on the more productive farms.

Table 56 on page 55 provides the same list of average accrual receipts and expenses for all 406 dairy farms plus a two group herd size comparison. Farms with 100 cows or more had total operating expenses that averaged 10 percent higher per cow and 39 cents more per hundredweight of milk than the farms with less than 100 cows. However, accrual receipts averaged 44 cents higher per hundredweight on the larger farms.

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 57. The largest average farm size, highest average rates of production, and highest average farm profits came from Region 2.

Other Comparisons: Dairy-renter farms were smaller than the 406 owner-operated farms, and were less profitable than the average specialized dairy farm (Table 58). A.E. Ext. 88-19 contains detailed information on dairy-renters. A publication containing 1988 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 406 specialized dairy farms is presented for the farm in Table 60.

Table 42.

FARM BUSINESS SUMMARY BY HERD SIZE
406 New York Dairy Farms, 1988

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		29	67	81	53	36
<u>ACCRUAL EXPENSES</u>						
Hired labor		\$ 2,392	\$ 4,607	\$ 9,317	\$ 14,404	\$ 19,414
Dairy grain & concentrate		18,877	27,003	34,299	43,702	56,902
Dairy roughage		2,095	1,749	916	1,524	580
Nondairy feed		348	144	263	685	63
Machine hire/rent/lease		915	1,517	1,421	1,436	1,229
Machine repairs/parts		3,293	4,837	7,323	8,357	13,107
Auto expense (farm share)		469	415	687	665	781
Fuel, oil & grease		1,554	2,208	3,423	4,240	5,632
Replacement livestock		1,926	1,023	1,516	1,318	1,523
Breeding		1,104	1,568	2,064	2,436	3,102
Veterinary & medicine		1,269	1,675	2,645	3,397	4,035
Milk marketing		3,505	4,900	5,727	7,365	7,354
Cattle lease/rent		10	52	0	352	14
Other livestock expense		2,963	4,874	5,534	6,974	9,024
Fertilizer & lime		1,698	3,465	5,162	6,944	8,272
Seeds & plants		732	1,340	1,961	2,953	3,680
Spray & other crop expense		718	1,021	1,713	2,178	3,045
Land/building/fence repair		1,398	1,478	2,359	2,200	3,661
Taxes & rent		2,979	5,209	6,374	7,877	8,324
Telephone & electricity		2,877	3,635	4,572	5,304	5,994
Interest paid		6,223	9,444	10,280	12,466	15,535
Misc. (including insurance)		2,576	3,135	4,550	5,601	6,315
Total Operating Expenses		\$59,921	\$ 85,299	\$112,106	\$142,378	\$177,586
Expansion livestock		672	337	176	537	1,253
Machinery depreciation		4,924	6,528	9,639	11,715	15,214
Building depreciation		2,415	3,573	4,964	5,960	6,460
Total Accrual Expenses		\$67,932	\$ 95,737	\$126,885	\$160,590	\$200,513
<u>ACCRUAL RECEIPTS</u>						
Milk sales		\$69,058	\$ 96,366	\$126,139	\$162,315	\$206,315
Dairy cattle		6,296	7,934	10,340	15,094	18,421
Dairy calves		1,809	2,074	2,580	2,899	3,494
Other livestock		479	131	115	369	318
Crops		1,936	977	2,558	4,576	4,331
Misc. receipts		1,230	3,258	4,976	5,572	6,316
Total Accrual Receipts		\$80,807	\$110,742	\$146,708	\$190,826	\$239,195
<u>PROFITABILITY ANALYSIS</u>						
Net farm income (w/o apprec.)		\$12,875	\$15,005	\$19,823	\$30,236	\$38,682
Net farm income (w/apprec.)		\$20,258	\$28,129	\$33,894	\$45,986	\$61,521
Labor & mgmt. income		\$2,331	\$3,228	\$3,284	\$11,721	\$17,960
Number of operators		1.10	1.16	1.36	1.41	1.31
Labor & mgmt. inc./oper.		\$2,119	\$2,782	\$2,415	\$8,313	\$13,710
Rates of return on:						
Equity capital w/o apprec.		-4.3%	-4.0%	-2.6%	0.5%	2.9%
Equity capital w/apprec.		0.0%	2.8%	2.2%	5.2%	9.1%
All capital w/o apprec.		-0.4%	0.5%	0.6%	2.9%	4.7%
All capital w/apprec.		2.5%	4.7%	3.9%	6.1%	8.9%

Table 42 (continued) FARM BUSINESS SUMMARY BY HERD SIZE
406 New York Dairy Farms, 1988

Item	Farm Size:	100 to 149 Cows	150 to 199 Cows	200 to 299 Cows	300 or More Cows
Number of farms		81	25	21	13
<u>ACCRUAL EXPENSES</u>					
Hired labor		\$ 25,129	\$ 52,976	\$ 79,337	\$ 200,247
Dairy grain & concentrate		68,636	107,553	153,329	323,183
Dairy roughage		1,652	1,725	3,503	11,127
Nondairy feed		301	0	374	2,971
Machine hire/rent/lease		3,137	2,027	3,590	6,976
Machine repairs/parts		14,690	24,337	32,025	44,595
Auto expense (farm share)		606	548	1,040	949
Fuel, oil & grease		7,046	11,674	14,884	22,566
Replacement livestock		1,505	180	12,690	2,072
Breeding		3,404	5,874	6,885	13,345
Veterinary & medicine		4,970	8,862	12,037	29,107
Milk marketing		11,218	16,822	17,375	28,057
Cattle lease/rent		112	864	0	1,700
Other livestock expense		10,996	14,902	21,193	44,593
Fertilizer & lime		10,849	15,467	24,072	30,893
Seeds & plants		4,544	6,168	9,696	12,581
Spray & other crop expense		4,179	5,727	9,390	16,835
Land/building/fence repair		3,965	7,811	10,295	18,413
Taxes & rent		12,154	17,290	16,508	36,340
Telephone & electricity		7,515	10,434	13,990	22,305
Interest paid		20,245	30,488	38,183	82,861
Misc. (including insurance)		7,728	11,427	15,598	27,380
Total Operating Expenses		\$224,581	\$353,156	\$505,994	\$ 979,096
Expansion livestock		1,445	2,175	3,046	42,433
Machinery depreciation		16,826	23,211	33,872	51,018
Building depreciation		8,646	13,367	19,946	47,793
Total Accrual Expenses		\$251,498	\$391,909	\$562,858	\$1,120,340
<u>ACCRUAL RECEIPTS</u>					
Milk sales		\$256,607	\$376,291	\$530,450	\$1,148,224
Dairy cattle		19,533	33,320	50,614	122,913
Dairy calves		4,526	6,676	10,489	20,435
Other livestock		556	472	2,292	2,655
Crops		6,714	9,520	11,087	26,097
Misc. receipts		10,966	18,255	27,459	33,826
Total Accrual Receipts		\$298,902	\$444,533	\$632,391	\$1,354,149
<u>PROFITABILITY ANALYSIS</u>					
Net farm income (w/o apprec.)		\$47,404	\$52,624	\$69,533	\$233,809
Net farm income (w/apprec.)		\$71,193	\$100,639	\$98,371	\$280,953
Labor & mgmt. income		\$20,551	\$16,348	\$25,100	\$162,342
Number of operators		1.48	1.56	1.42	1.47
Labor & mgmt. inc./oper.		\$13,886	\$10,480	\$17,676	\$110,437
Rate of return on:					
Equity capital w/o apprec.		2.8%	2.5%	3.9%	13.4%
Equity capital w/apprec.		7.6%	9.4%	7.2%	16.8%
All capital w/o apprec.		4.6%	4.6%	5.4%	11.3%
All capital w/apprec.		7.9%	9.2%	7.6%	13.3%

Table 43. FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
406 New York Dairy Farms, 1988

Item	Farms with: Less than 40 Cows		40 to 54 Cows		55 to 69 Cows	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS						
Farm cash/chkg./sav.	\$ 4,457	\$ 3,074	\$ 2,714	\$ 2,675	\$ 3,845	\$ 4,036
Accounts receivable	5,424	6,196	8,003	9,132	10,443	11,770
Prepaid expenses	0	15	0	0	74	52
Feed & supplies	11,232	13,321	16,895	17,800	26,495	28,566
Livestock*	42,673	45,140	56,489	60,707	79,513	83,341
Machinery & equipment*	43,066	46,651	54,871	57,184	77,112	79,800
FLB & PCA stock	935	912	1,403	1,289	2,559	2,629
Other stock & cert.	1,333	1,131	2,194	2,311	3,363	3,660
Land & buildings*	<u>133,717</u>	<u>139,670</u>	<u>163,123</u>	<u>169,451</u>	<u>213,256</u>	<u>223,496</u>
Total Farm Assets	\$242,837	\$256,110	\$305,692	\$320,550	\$416,659	\$437,350
Pers. cash/chkg./sav.	\$ 1,701	\$ 2,830	\$ 2,898	\$ 3,147	\$ 8,002	\$ 9,051
Cash value of life ins.	1,045	1,171	2,772	3,806	3,668	3,967
Nonfarm real estate	17,714	20,095	29,421	34,017	34,463	37,286
Auto (personal share)	1,386	2,943	2,892	3,659	3,040	3,456
Stocks & bonds	2,509	3,068	1,618	2,885	3,577	3,682
Household furnishings	7,095	7,619	8,468	9,336	7,775	7,790
All other	<u>4,939</u>	<u>4,436</u>	<u>2,587</u>	<u>2,757</u>	<u>1,870</u>	<u>2,462</u>
Tot. Nonfarm Assets**	\$ 36,389	\$ 42,162	\$ 50,657	\$ 59,608	\$ 62,394	\$ 67,694
Total Farm & Nonfarm Assets	\$279,226	\$298,272	\$356,349	\$380,158	\$479,053	\$505,044
LIABILITIES						
Accounts payable	\$ 1,502	\$ 1,478	\$ 4,338	\$ 4,799	\$ 3,275	\$ 3,769
Operating debt	388	451	1,462	1,912	851	1,026
Short term	933	1,648	1,216	1,265	1,481	1,291
Advanced gov't. rec.	0	0	0	0	0	0
Intermediate***	23,857	23,556	38,415	38,787	46,980	47,843
Long term*	<u>54,881</u>	<u>53,469</u>	<u>78,049</u>	<u>74,337</u>	<u>80,272</u>	<u>79,627</u>
Total Farm Liab.	\$ 81,562	\$ 80,602	\$123,480	\$121,099	\$132,859	\$133,556
Tot. Nonfarm Liab.**	<u>805</u>	<u>1,247</u>	<u>2,009</u>	<u>2,308</u>	<u>2,738</u>	<u>6,958</u>
Total Farm & Nonfarm Liabilities	\$ 82,367	\$ 81,849	\$125,489	\$123,407	\$135,597	\$140,514
Farm Net Worth (Equity Capital)	\$161,275	\$175,508	\$182,212	\$199,451	\$283,801	\$303,794
Farm & Nonfarm Net Worth	\$196,859	\$216,423	\$230,860	\$256,751	\$343,456	\$364,530
FINANCIAL MEASURES						
	Less than 40 Cows		40 to 54 Cows		55 to 69 Cows	
Percent equity	69%		62%		69%	
Debt/asset ratio-long term	0.38		0.44		0.36	
Debt/asset ratio-inter. & current	0.23		0.31		0.25	
Change in net worth with apprec.	\$14,232		\$17,238		\$19,993	
Total farm debt per cow	\$2,303		\$2,577		\$2,154	
Debt payments made per cow	\$430		\$445		\$432	
Debt payments as % of milk sales	21%		21%		21%	
Amount avail. for debt service	\$14,628		\$23,140		\$28,374	
Cash flow coverage ratio for 1988	1.08		1.15		1.20	

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1988.

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

Table 43 (cont'd) FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
406 New York Dairy Farms, 1988

Item	Farms with:		85 to 99 Cows	
	70 to 84 Cows		Jan. 1	Dec. 31
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash/chkg./savings	\$ 4,510	\$ 5,046	\$ 3,641	\$ 6,787
Accounts receivable	14,084	15,293	16,866	19,378
Prepaid expenses	0	4	0	0
Feed & supplies	34,010	37,259	41,775	46,435
Livestock*	97,948	104,483	115,682	124,050
Machinery & equipment*	92,466	95,936	108,882	112,275
FLB & PCA stock	3,019	3,159	3,693	3,717
Other stock & cert.	4,751	5,093	2,489	3,235
Land & buildings*	<u>232,751</u>	<u>239,667</u>	<u>240,295</u>	<u>255,043</u>
Total Farm Assets	\$483,539	\$505,940	\$533,323	\$570,919
Pers. cash/chkg./savings	\$ 7,611	\$ 7,892	\$ 12,975	\$ 11,777
Cash value of life ins.	4,076	6,006	3,144	3,960
Nonfarm real estate	6,368	6,368	30,100	48,300
Auto (personal share)	3,311	4,115	2,716	2,404
Stocks & bonds	2,287	3,771	6,916	7,214
Household furnishings	8,600	8,776	6,280	6,400
All other	<u>2,392</u>	<u>2,370</u>	<u>4,590</u>	<u>7,585</u>
Total Nonfarm Assets**	\$ 34,644	\$ 39,297	\$ 66,722	\$ 87,641
Total Farm & Nonfarm Assets	\$518,183	\$545,237	\$600,045	\$658,560
LIABILITIES				
Accounts payable	\$ 5,742	\$ 4,956	\$ 5,422	\$ 5,940
Operating debt	1,422	2,410	2,663	4,065
Short term	1,712	2,109	3,093	981
Advanced gov't. rec.	176	0	0	0
Intermediate***	54,621	56,760	75,449	75,857
Long term*	<u>92,638</u>	<u>89,206</u>	<u>101,029</u>	<u>98,083</u>
Total Farm Liab.	\$156,310	\$155,441	\$187,656	\$184,926
Total Nonfarm Liab.**	<u>1,080</u>	<u>1,058</u>	<u>1,128</u>	<u>3,084</u>
Total Farm & Nonfarm Liabilities	\$157,390	\$156,499	\$188,784	\$188,010
Farm Net Worth (Equity Capital)	\$327,229	\$350,500	\$345,667	\$385,993
Farm & Nonfarm Net Worth	\$360,793	\$388,738	\$411,261	\$470,550
FINANCIAL MEASURES				
	70 to 84 Cows		85 to 99 Cows	
Percent equity	69%		68%	
Debt/asset ratio-long term	0.37		0.38	
Debt/asset ratio-inter. & current	0.25		0.27	
Change in net worth with apprec.	\$23,271		\$40,327	
Total farm debt per cow	\$1,968		\$1,926	
Debt payments made per cow	\$470		\$579	
Debt payments as % of milk sales	22%		27%	
Amount avail. for debt service	\$32,687		\$43,561	
Cash flow coverage ratio for 1988	1.15		1.05	

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1988.

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

Table 43 (cont'd) FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
406 New York Dairy Farms, 1988

	Farms with:		100 to 149 Cows		150 to 199 Cows	
Item			Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS						
Farm cash/chkg./savings	\$	10,907	\$	15,024	\$	9,184 \$ 15,950
Accounts receivable		22,149		25,052		34,103 37,876
Prepaid expenses		0		62		57 0
Feed & supplies		55,111		60,700		79,415 86,404
Livestock*		149,876		159,687		223,016 233,323
Machinery & equipment*		136,228		141,737		179,605 182,784
FLB & PCA stock		6,146		5,896		13,047 12,959
Other stock & cert.		5,952		6,261		16,900 16,437
Land & buildings*		327,973		335,407		468,814 493,711
Total Farm Assets		\$714,342		\$749,826		\$1,024,141 \$1,079,444
Pers. cash/chkg./savings	\$	5,805	\$	5,810	\$	2,693 \$ 2,738
Cash value of life ins.		5,260		5,825		10,159 12,195
Nonfarm real estate		91,000		110,969		42,571 51,143
Auto (personal share)		2,101		2,189		1,971 4,979
Stocks & bonds		2,549		3,483		836 945
Household furnishings		6,500		7,138		9,750 9,964
All other		2,871		2,711		1,854 14,863
Total Nonfarm Assets**		\$116,086		\$138,124		\$ 69,834 \$ 96,827
Total Farm & Nonfarm Assets		\$830,428		\$887,950		\$1,093,975 \$1,176,271
LIABILITIES						
Accounts payable	\$	4,179	\$	4,376	\$	9,549 \$ 10,589
Operating debt		2,860		2,775		5,399 9,025
Short term		3,442		2,818		3,088 7,270
Advanced gov't. rec.		69		0		0 0
Intermediate***		99,192		99,795		137,202 129,905
Long term*		135,158		131,475		197,395 196,886
Total Farm Liab.		\$244,900		\$241,239		\$ 352,633 \$ 353,676
Total Nonfarm Liab.**		1,147		945		1,177 575
Total Farm & Nonfarm Liabilities		\$246,047		\$242,184		\$ 353,810 \$ 354,251
Farm Net Worth (Equity Capital)		\$469,442		\$508,587		\$ 671,508 \$ 725,768
Farm & Nonfarm Net Worth		\$584,381		\$645,766		\$ 740,165 \$ 822,020
FINANCIAL MEASURES						
		100 to 149 Cows		150 to 199 Cows		
Percent equity		68%		67%		
Debt/asset ratio-long term		0.39		0.40		
Debt/asset ratio-inter. & current		0.26		0.27		
Change in net worth with apprec.		\$39,145		\$54,260		
Total farm debt per cow		\$2,010		\$2,033		
Debt payments made per cow		\$471		\$501		
Debt payments as % of milk sales		22%		24%		
Amount avail. for debt service		\$55,340		\$70,113		
Cash flow coverage ratio for 1988		1.09		1.06		

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1988.

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

Table 43 (cont'd) FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
406 New York Dairy Farms, 1988

Item	Farms with:		More than 300 Cows	
	200 to 299 Cows		More than 300 Cows	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash/chkg./savings	\$ 6,852	\$ 6,047	\$ 11,551	\$ 17,077
Accounts receivable	42,654	46,641	80,033	102,600
Prepaid expenses	0	381	3,601	5,032
Feed & supplies	110,563	120,265	261,579	288,123
Livestock*	294,678	310,431	496,895	564,900
Machinery & equipment*	196,810	218,866	314,866	338,523
FLB & PCA stock	13,911	15,602	15,888	21,595
Other stock & cert.	22,919	22,927	66,023	68,053
Land & buildings*	606,656	616,437	1,032,410	1,132,831
Total Farm Assets	\$1,295,043	\$1,357,597	\$2,282,846	\$2,538,735
Pers. cash/chkg./savings	\$ 10,227	\$ 11,091	\$ 1,616	\$ 8,145
Cash value of life ins.	7,164	7,318	1,451	1,505
Nonfarm real estate	25,273	24,818	25,600	34,000
Auto (personal share)	3,773	4,159	2,935	3,900
Stocks & bonds	25,527	28,617	16,473	17,730
Household furnishings	10,000	10,455	8,600	9,200
All other	16,588	18,481	13,919	5,930
Total Nonfarm Assets**	\$ 98,552	\$ 104,939	\$ 70,595	\$ 80,411
Total Farm & Nonfarm Assets	\$1,393,595	\$1,462,536	\$2,353,441	\$2,619,146
LIABILITIES				
Accounts payable	\$ 9,504	\$ 13,705	\$ 9,653	\$ 11,539
Operating debt	10,964	10,809	57,635	89,818
Short term	12,095	19,329	15,232	24,590
Advanced gov't. rec.	0	0	0	0
Intermediate***	210,412	211,558	392,319	463,532
Long term*	209,592	207,354	469,520	461,387
Total Farm Liab.	\$ 452,568	\$ 462,755	\$ 944,359	\$1,050,866
Total Nonfarm Liab.**	12,723	10,245	0	0
Total Farm & Nonfarm Liabilities	\$ 465,291	\$ 473,000	\$ 944,359	\$1,050,866
Farm Net Worth (Equity Capital)	\$ 842,475	\$ 894,843	\$1,338,487	\$1,487,869
Farm & Nonfarm Net Worth	\$ 928,304	\$ 989,536	\$1,409,082	\$1,568,280
FINANCIAL MEASURES				
	200 to 299 Cows		More than 300 Cows	
Percent equity	66%		59%	
Debt/asset ratio-long term	0.34		0.41	
Debt/asset ratio-inter. & current	0.34		0.42	
Change in net worth with apprec.	\$52,367		\$149,382	
Total farm debt per cow	\$1,851		\$2,198	
Debt payments made per cow	\$537		\$496	
Debt payments as % of milk sales	23%		20%	
Amount avail. for debt service	\$120,532		\$303,053	
Cash flow coverage ratio for 1988	1.22		1.56	

*Includes discounted lease payments.

**Average of farms reporting nonfarm assets and liabilities for 1988.

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

Table 44.

SELECTED BUSINESS FACTORS BY HERD SIZE
406 New York Dairy Farms, 1988

Item	Farms with: 40 Cows	Less than 40 Cows	40 to 54 Cows	55 to 69 Cows	70 to 84 Cows	85 to 99 Cows
Number of farms	29	67	81	53	36	
<u>Cropping Program Analysis</u>						
Total Tillable acres	107	156	219	252	296	
Tillable acres rented*	31	49	67	76	108	
Hay crop acres*	78	98	131	139	168	
Corn silage acres*	15	28	37	48	63	
Hay crop, tons DM/acre	2.0	2.2	2.4	2.5	2.6	
Corn silage, tons/acre	12.6	13.4	12.7	13.9	13.8	
Oats, bushels/acre	3.0	33.4	58.1	42.8	41.5	
Forage DM per cow, tons	6.7	7.4	7.7	7.5	7.9	
Tillable acres/cow	3.2	3.3	3.6	3.3	3.2	
Fert. & lime exp./til. acre	\$15.84	\$22.18	\$23.56	\$27.58	\$27.97	
Total machinery costs	\$13,368	\$18,263	\$26,363	\$31,093	\$41,459	
Machinery cost/tillable acre	\$125	\$117	\$120	\$123	\$140	
<u>Dairy Analysis</u>						
Number of cows	33	47	61	77	93	
Number of heifers	22	36	51	66	77	
Milk sold, lbs.	544,550	742,474	979,950	1,252,616	1,608,344	
Milk sold/cow, lbs.	16,264	15,833	16,006	16,165	17,356	
Operating cost of prod. milk/cwt.	\$8.97	\$9.60	\$9.36	\$9.13	\$9.08	
Total cost of prod. milk/cwt.	\$15.57	\$15.30	\$15.16	\$14.17	\$13.31	
Price/cwt. milk sold	\$12.68	\$12.98	\$12.87	\$12.96	\$12.83	
Purchased dairy feed/cow	\$626	\$613	\$575	\$584	\$620	
Purchased dairy feed/cwt. milk	\$3.85	\$3.87	\$3.59	\$3.61	\$3.57	
Purchased grain & conc. as % of milk receipts	27%	28%	27%	27%	28%	
Purchased feed & crop expense/cwt. milk	\$4.43	\$4.66	\$4.50	\$4.57	\$4.51	
<u>Capital Efficiency</u>						
Farm capital/worker	\$150,202	\$167,498	\$176,466	\$181,148	\$189,902	
Farm capital/cow	7,451	6,677	6,975	6,385	5,958	
Farm capital/til. acre owned	3,240	2,926	2,809	2,811	2,937	
Real estate/cow	4,082	3,546	3,567	3,048	2,673	
Machinery investment/cow	1,340	1,195	1,281	1,216	1,193	
Capital turnover, years	2.83	2.53	2.66	2.39	2.11	
<u>Labor Efficiency</u>						
Worker equivalent	1.66	1.87	2.42	2.73	2.91	
Operator/manager equivalent	1.10	1.16	1.36	1.41	1.31	
Milk sold/worker, lbs.	327,861	397,172	404,979	458,644	553,188	
Cows/worker	20	25	25	28	32	
Work units/worker	205	263	285	303	352	
Labor cost/cow	\$532	\$444	\$449	\$425	\$406	
Labor cost/tillable acre	\$166	\$133	\$126	\$131	\$127	

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

Table 44 (continued) SELECTED BUSINESS FACTORS BY HERD SIZE
406 New York Dairy Farms, 1988

Item	Farms with:	100 to 149 Cows	150 to 199 Cows	200 to 299 Cows	300 or More Cows
Number of farms		81	25	21	13
<u>Cropping Program Analysis</u>					
Total tillable acres		367	500	618	919
Tillable acres rented*		134	216	214	295
Hay crop acres*		190	241	243	309
Corn silage acres*		84	140	226	382
Hay crop, tons DM/acre		2.6	2.8	2.8	3.4
Corn silage, tons/acre		14.7	13.6	14.2	15.1
Oats, bushels/acre		44.7	58.3	35.3	54.6
Forage DM per cow, tons		7.7	7.6	7.2	6.5
Tillable acres/cow		3.1	2.9	2.6	2.0
Fert. & lime exp./til. acre		\$29.56	\$30.94	\$38.94	\$33.63
Total machinery costs		\$49,168	\$70,776	\$95,583	\$141,975
Machinery cost/tillable acre		\$134	\$142	\$155	\$155
<u>Dairy Analysis</u>					
Number of cows		119	172	241	453
Number of heifers		96	148	179	343
Milk sold, lbs.		1,959,901	2,864,891	4,099,894	8,665,733
Milk sold/cow, lbs.		16,531	16,656	17,036	19,113
Operating cost of prod. milk/cwt.		\$9.37	\$10.02	\$9.93	\$9.41
Total cost of prod. milk/cwt.		\$13.65	\$13.73	\$13.17	\$11.87
Price/cwt. milk sold		\$13.09	\$13.13	\$12.94	\$13.25
Purchased dairy feed/cow		\$593	\$635	\$652	\$737
Purchased dairy feed/cwt. milk		\$3.59	\$3.81	\$3.83	\$3.86
Purchased grain & conc. as % of milk receipts		27%	29%	29%	28%
Purchased feed & crop expense/cwt. milk		\$4.58	\$4.77	\$4.88	\$4.55
<u>Capital Efficiency</u>					
Farm capital/worker		\$206,856	\$214,798	\$220,180	\$236,828
Farm capital/cow		6,175	6,115	5,511	5,317
Farm capital/til. acre owned		3,142	3,703	3,283	3,870
Real estate/cow		2,798	2,798	2,541	2,388
Machinery investment/cow		1,172	1,053	864	721
Capital turnover, years		2.27	2.14	2.01	1.72
<u>Labor Efficiency</u>					
Worker equivalent		3.54	4.90	6.02	10.18
Operator/manager equivalent		1.48	1.56	1.42	1.47
Milk sold/worker, lbs.		553,786	585,070	680,615	851,294
Cows/worker		33	35	40	45
Work units/worker		351	371	405	438
Labor cost/cow		\$383	\$425	\$405	\$482
Labor cost/tillable acre		\$124	\$146	\$158	\$238

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

Table 45. SELECTED BUSINESS FACTORS BY TYPE OF BARN
AND HERD SIZE
406 New York Dairy Farms, 1988

Item	Farms with:		Freestall	
	Conventional	Freestall	Conventional	Freestall
	≤60 Cows	>60 Cows	≤120 Cows	>120 Cows
Number of farms	117	139	65	85
<u>Cropping Program Analysis</u>				
Total Tillable acres	149	292	259	560
Tillable acres rented*	45	98	85	209
Hay crop acres*	96	168	133	237
Corn silage acres*	28	55	59	181
Hay crop, tons DM/acre	2.2	2.5	2.5	2.9
Corn silage, tons/acre	12.8	14.0	14.7	14.3
Oats, bushels/acre	39.4	48.7	40.9	45.3
Forage DM per cow, tons	7.3	7.8	7.5	7.2
Tillable acres/cow	3.2	3.4	3.1	2.6
Fert. & lime exp./til. acre	\$21.87	\$24.92	\$29.68	\$34.57
Total machinery costs	\$18,754	\$35,266	\$37,311	\$82,010
Machinery cost/tillable acre	\$126	\$121	\$144	\$146
<u>Dairy Analysis</u>				
Number of cows	46	87	84	217
Number of heifers	35	72	69	171
Milk sold, lbs.	745,373	1,428,224	1,381,093	3,797,957
Milk sold/cow, lbs.	16,150	16,485	16,496	17,468
Operating cost of prod. milk/cwt.	\$9.49	\$9.25	\$9.36	\$9.64
Total cost of prod. milk/cwt.	\$15.35	\$13.97	\$14.14	\$12.88
Price/cwt. milk sold	\$12.90	\$12.88	\$13.03	\$13.15
Purchased dairy feed/cow	\$620	\$587	\$608	\$660
Purchased dairy feed/cwt. milk	\$3.84	\$3.56	\$3.68	\$3.78
Purc. grain & conc. as % milk rec.	28%	27%	27%	28%
Purc. feed & crop exp./cwt. milk	\$4.59	\$4.47	\$4.67	\$4.70
<u>Capital Efficiency</u>				
Farm capital/worker	\$165,397	\$190,032	\$191,181	\$220,397
Farm capital/cow	\$6,874	\$6,367	\$6,391	\$5,688
Farm capital/til. acre owned	\$3,050	\$2,829	\$3,075	\$3,523
Real estate/cow	\$3,637	\$3,056	\$2,944	\$2,574
Machinery investment/cow	\$1,242	\$1,186	\$1,264	\$915
Capital turnover, years	2.58	2.38	2.33	1.97
<u>Labor Efficiency</u>				
Worker equivalent	1.92	2.90	2.80	5.61
Operator/manager equivalent	1.17	1.44	1.40	1.43
Milk sold/worker, lbs.	388,601	492,003	493,473	676,903
Cows/worker	24	30	30	39
Work units/worker	252	325	322	395
Labor cost/cow	\$427	\$390	\$388	\$431
Labor cost/tillable acre	\$132	\$115	\$126	\$167
<u>Profitability & Balance Sheet Analysis</u>				
Net farm income (w/o apprec.)	\$15,113	\$32,593	\$31,035	\$86,118
Labor & mgmt. income/operator	\$2,387	\$8,213	\$8,928	\$31,202
Farm debt/cow	\$2,424	\$1,935	\$2,265	\$2,018
Percent equity	65%	70%	65%	65%

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

Table 46. FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARM
117 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1988

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv- alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
3.0	58	1,069,621	20,399	3.8	20	40	672,046
2.4	56	952,284	18,512	3.1	18	33	562,928
2.2	54	883,230	17,716	2.8	17	29	469,994
2.1	51	828,725	17,216	2.6	15	27	433,894
2.0	49	760,558	16,604	2.4	14	25	414,271
2.0	46	716,896	16,054	2.3	13	24	385,463
1.7	43	676,549	15,273	2.0	12	23	353,856
1.5	40	628,044	14,721	1.9	10	21	330,435
1.3	37	566,471	13,809	1.7	10	19	292,749
1.0	29	427,103	11,901	1.2	7	15	226,460

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
\$318	23%	\$197	\$ 554	\$ 455	\$3.02
418	28	250	692	550	3.57
466	31	315	755	600	3.93
518	33	364	804	644	4.22
554	35	392	841	713	4.47
593	36	426	899	759	4.68
641	38	451	941	812	4.90
710	40	488	1,013	872	5.18
781	44	538	1,069	952	5.58
896	50	647	1,192	1,092	6.70

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.
\$2,631	\$ 6.23	\$12.22	\$66,048	\$40,605	\$26,515	\$25,175
2,411	7.69	13.25	45,717	31,042	18,240	15,171
2,289	8.23	14.00	38,199	24,592	12,447	10,259
2,200	8.68	14.57	31,413	20,824	8,024	6,890
2,122	9.22	15.09	27,367	16,987	5,314	4,522
2,064	9.64	15.62	22,397	13,416	2,240	2,113
1,975	10.09	16.24	19,247	9,008	-1,921	-1,703
1,886	10.53	16.70	16,846	6,522	-5,605	-5,125
1,756	11.26	17.41	10,388	2,017	-9,948	-8,298
1,545	13.48	21.06	-402	-9,679	-24,960	-21,802

Table 47. FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
139 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1988

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
4.7	141	2,455,689	19,800	4.1	21	47	755,830
3.7	112	1,887,601	18,638	3.5	17	38	651,861
3.3	98	1,724,659	18,106	3.1	16	35	591,353
3.1	93	1,531,719	17,463	2.8	15	33	541,449
2.9	83	1,396,207	16,959	2.6	15	31	510,816
2.6	78	1,286,389	16,331	2.4	14	29	476,869
2.5	73	1,172,462	15,846	2.2	13	28	445,549
2.4	67	1,086,160	15,340	2.0	12	26	410,818
2.1	64	992,080	14,294	1.7	11	23	373,760
1.8	61	822,664	11,490	1.2	8	19	293,815

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
\$272	24%	\$221	\$526	\$429	\$3.01
371	28	285	647	541	3.57
433	30	327	698	607	3.82
502	32	358	750	658	4.02
565	33	391	787	701	4.27
605	35	418	838	751	4.53
648	37	441	879	801	4.77
700	39	475	939	847	5.03
757	41	519	1,035	915	5.36
883	48	660	1,173	1,068	6.14

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.
\$2,590	\$ 6.33	\$11.06	\$113,623	\$69,808	\$45,158	\$40,726
2,425	7.33	12.27	79,373	54,563	33,225	23,975
2,339	7.95	12.97	67,707	46,491	26,185	19,075
2,256	8.42	13.28	59,750	41,639	20,956	15,497
2,174	8.91	13.58	51,694	35,314	16,765	11,634
2,120	9.27	14.05	46,333	31,497	11,988	8,446
2,024	9.76	14.55	40,463	26,457	6,807	4,985
1,940	10.27	15.13	34,299	21,668	-1,047	-585
1,820	10.94	16.09	24,116	11,595	-9,842	-7,205
1,480	12.89	18.79	2,703	-10,487	-30,954	-21,750

Table 48. FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
65 Freestall Barn Dairy Farms with 120 or Less Cows, New York, 1988

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
4.2	115	2,135,755	20,957	3.9	21	46	738,383
3.5	108	1,909,121	19,580	3.4	20	39	637,748
3.3	105	1,771,060	18,347	3.1	18	36	582,787
3.1	100	1,688,234	17,512	2.9	16	34	559,711
3.0	92	1,505,063	16,867	2.8	15	31	525,414
2.8	84	1,365,945	16,271	2.5	15	29	474,472
2.6	78	1,191,775	15,778	2.3	14	28	455,536
2.3	70	1,061,328	14,891	2.0	12	27	429,339
2.1	59	872,566	13,601	1.6	11	25	376,468
1.6	42	610,624	11,393	1.1	8	18	277,940

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
\$258	23%	\$234	\$ 530	\$ 480	\$2.91
416	28	302	662	587	3.65
454	31	346	719	629	3.98
511	35	369	767	685	4.47
583	37	396	807	761	4.78
635	38	439	852	800	5.00
672	40	510	900	839	5.28
712	41	561	1,036	896	5.51
781	44	603	1,153	995	5.89
883	53	767	1,344	1,152	6.95

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.
\$2,677	\$ 5.99	\$11.76	\$122,057	\$80,538	\$50,935	\$41,222
2,502	7.65	12.36	86,612	59,942	36,940	28,176
2,361	8.34	13.01	72,241	46,332	27,220	20,081
2,269	8.71	13.42	60,248	40,507	22,245	14,792
2,175	9.29	14.01	51,410	36,770	16,212	11,783
2,106	9.77	14.68	43,786	28,683	12,431	9,286
2,060	10.07	15.56	33,786	21,707	7,906	5,326
1,965	10.61	16.33	22,275	15,781	-1,726	-1,838
1,792	11.56	17.14	11,783	9,142	-10,710	-7,666
1,567	13.45	18.97	226	-13,498	-24,719	-22,741

Table 49. FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
85 Freestall Barn Dairy Farms with More Than 120 Cows, New York, 1988

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
12.1	532	10,258,979	21,283	4.8	19	60	1,027,141
7.7	309	5,748,053	19,739	4.1	18	47	839,146
6.5	253	4,450,040	18,818	3.8	17	44	742,700
6.0	224	3,683,829	17,827	3.4	16	41	685,010
5.4	194	3,237,071	17,274	3.1	15	39	648,889
4.8	173	2,920,311	16,940	2.9	14	37	613,465
4.2	153	2,550,953	16,266	2.6	13	34	579,478
3.9	136	2,313,893	15,745	2.4	12	33	555,146
3.6	127	2,088,296	14,707	2.1	11	31	510,554
2.9	121	1,660,164	12,411	1.5	10	27	423,675

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
\$316	24%	\$263	\$ 543	\$ 487	\$3.17
454	30	295	642	644	3.97
527	32	320	726	737	4.32
587	34	349	756	775	4.53
623	36	382	784	811	4.71
653	37	407	831	839	4.91
675	39	423	900	869	5.13
702	41	453	947	912	5.30
776	42	507	989	949	5.60
897	47	617	1,093	1,057	6.31

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.
\$2,767	\$ 5.23	\$10.40	\$367,659	\$308,013	\$225,699	\$195,726
2,585	7.66	11.77	223,987	166,492	115,331	74,508
2,466	8.92	12.33	158,470	114,554	69,277	48,997
2,365	9.39	12.87	123,985	87,002	50,003	37,563
2,293	9.85	13.20	105,605	71,945	39,841	24,763
2,232	10.29	13.63	90,906	62,101	27,489	18,851
2,145	10.51	13.88	74,583	44,749	15,425	12,052
2,045	10.77	14.36	63,368	33,199	-177	133
1,949	11.11	14.85	41,941	20,940	-15,048	-12,035
1,650	12.23	16.60	12,620	-12,543	-50,857	-43,219

Table 50. SELECTED BUSINESS FACTORS BY MILKING SYSTEMS
403 New York Dairy Farms, 1988

Item	Dumping Station	Pipeline	Herringbone Parlor	Other Parlors
Number of farms	22	224	142	15
Percent of farms	5%	56%	35%	4%
<u>Cropping Program Analysis</u>				
Total Tillable acres	240	225	422	430
Tillable acres rented*	72	76	148	161
Hay crop acres*	129	135	191	202
Corn silage acres*	31	43	127	108
Hay crop, tons DM/acre	1.7	2.5	2.8	2.3
Corn silage, tons/acre	11.1	13.8	14.3	14.7
Oats, bushels/acre	28.3	52.3	42.3	34.0
Forage DM per cow, tons	6.7	7.7	7.3	7.0
Tillable acres/cow	4.8	3.2	2.7	3.0
Fert. & lime exp./tillable acre	\$13.95	\$25.31	\$33.14	\$30.25
Total machinery costs	\$17,891	\$28,892	\$61,796	\$54,195
Machinery cost/tillable acre	\$74	\$128	\$146	\$126
<u>Dairy Analysis</u>				
Number of cows	51	70	157	143
Number of heifers	41	57	126	107
Milk sold, lbs.	702,513	1,163,653	2,711,904	2,368,126
Milk sold/cow, lbs.	13,874	16,603	17,257	16,615
Oper. cost of prod. milk/cwt.	\$9.66	\$9.33	\$9.54	\$9.69
Total cost of prod. milk/cwt.	\$15.71	\$14.38	\$13.12	\$13.55
Price/cwt. milk sold	\$12.59	\$12.91	\$13.13	\$12.97
Purchased dairy feed/cow	\$495	\$604	\$650	\$615
Purchased dairy feed/cwt. milk	\$3.57	\$3.64	\$3.77	\$3.70
Purc. grain & conc. as % milk receipts	26%	27%	28%	27%
Purc. feed & crop expense/cwt. milk	\$4.33	\$4.51	\$4.70	\$4.68
<u>Capital Efficiency</u>				
Farm capital/worker	\$154,585	\$182,241	\$214,819	\$190,389
Farm capital/cow	\$6,349	\$6,542	\$5,844	\$5,989
Farm capital/tillable acre owned	\$1,913	\$3,057	\$3,352	\$3,161
Real estate/cow	\$3,548	\$3,210	\$2,640	\$3,010
Machinery investment/cow	\$987	\$1,217	\$1,012	\$864
Capital turnover, years	2.92	2.41	2.05	2.16
<u>Labor Efficiency</u>				
Worker equivalent	2.08	2.52	4.28	4.48
Operator/manager equivalent	1.20	1.34	1.40	1.41
Milk sold/worker, lbs.	337,820	462,502	634,329	528,207
Cows/worker	24	28	37	32
Work units/worker	267	302	378	332
Labor cost/cow	\$471	\$428	\$416	\$499
Labor cost/tillable acre	\$99	\$133	\$155	\$165
<u>Profitability & Balance Sheet Analysis</u>				
Net farm income (w/o apprec.)	\$10,962	\$25,925	\$62,092	\$47,923
Labor & mgmt. income/operator	\$-1,515	\$6,346	\$22,009	\$12,306
Farm debt/cow	\$2,454	\$2,109	\$2,044	\$1,964
Percent equity	62%	68%	65%	67%

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

Table 51. FARM BUSINESS SUMMARIES FOR SINGLE PROPRIETORSHIPS,
PARTNERSHIPS, AND CORPORATIONS
406 New York Dairy Farms, 1988

Item	270 Single Prop.	115 Partnerships	21 Corporations
ACCRUAL EXPENSES			
Hired labor	\$ 22,017	\$ 22,839	\$ 78,726
Feed	55,619	73,509	123,711
Machinery	18,074	23,131	42,666
Livestock	24,645	31,286	61,715
Crops	12,638	18,332	38,880
Real estate	11,478	15,701	36,222
Other	<u>27,515</u>	<u>34,299</u>	<u>56,856</u>
Total Operating Expenses	\$171,986	\$219,097	\$438,776
Expansion livestock	929	2,405	18,552
Machinery depreciation	11,990	17,261	29,766
Building depreciation	<u>6,590</u>	<u>8,779</u>	<u>25,990</u>
Total Accrual Expenses	\$191,495	\$247,542	\$513,084
ACCRUAL RECEIPTS			
Milk sales	\$189,292	\$254,669	\$503,312
Livestock	20,359	26,694	67,901
Crops	3,113	5,571	28,569
All other	<u>6,761</u>	<u>9,821</u>	<u>27,897</u>
Total Accrual Receipts	\$219,521	\$296,755	\$627,679
PROFITABILITY ANALYSIS			
Net farm income (without appreciation)	\$28,026	\$49,213	\$114,595
Net farm income (with appreciation)	\$46,825	\$71,435	\$143,370
Labor & management income	\$8,895	\$24,128	\$64,321
Number of operators	1.05	2.01	1.70
Labor & management income per operator	\$8,471	\$12,004	\$37,836
BUSINESS FACTORS			
Worker equivalent	2.82	3.58	5.38
Number of cows	88	115	209
Number of heifers	70	92	179
Acres of hay crops*	143	166	261
Acres of corn silage*	62	87	160
Total tillable acres	258	344	634
Pounds of milk sold	1,457,340	1,965,850	3,751,180
Pounds of milk sold per cow	16,604	17,030	17,932
Tons hay crop dry matter per acre	2.5	2.5	3.2
Tons corn silage per acre	13.9	14.3	14.9
Cows per worker	31	32	39
Pounds of milk sold per worker	516,606	548,609	697,122
Purc. grain & conc. as % of milk receipts	28%	28%	24%
Feed & crop expense per cwt. milk	\$4.66	\$4.66	\$4.29
Fertilizer & lime per crop acre	\$27.32	\$30.00	\$33.79
Machinery cost per tillable acre	\$135	\$135	\$131
Average price per cwt. milk	\$12.99	\$12.95	\$13.42

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

Table 52. FARM FAMILY FINANCIAL SITUATION FOR SINGLE PROPRIETORSHIPS,
PARTNERSHIPS, AND CORPORATIONS
406 New York Dairy Farms, 1988

Item	Farms with: <u>270 Single Prop.</u>		<u>115 Partnerships</u>		<u>21 Corporations</u>	
	Jan. 1	Dec. 31	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS						
Farm cash/chkg./sav.	\$ 4,858	\$ 5,985	\$ 5,551	\$ 8,391	\$ 21,415	\$ 23,376
Accounts receivable	15,658	17,638	21,312	23,767	37,960	49,853
Prepaid expenses	44	45	254	415	625	1,120
Feed & supplies	37,066	40,202	55,599	59,775	127,623	150,407
Livestock*	110,388	117,598	141,771	150,614	241,591	270,895
Machinery & equip.*	93,713	98,622	122,197	127,228	208,922	217,275
FLB & PCA stock	3,547	3,745	6,581	6,819	10,927	11,507
Other stock & cert.	5,865	6,097	8,490	8,889	23,046	23,153
Land & buildings*	<u>248,362</u>	<u>258,141</u>	<u>325,602</u>	<u>340,716</u>	<u>619,635</u>	<u>652,044</u>
Total Farm Assets	\$519,502	\$548,074	\$687,358	\$726,613	\$1,291,744	\$1,399,630
Pers. cash/chkg./sav.	\$ 6,744	\$ 7,187	\$ 2,875	\$ 3,239	\$ 9,500	\$ 10,667
Cash value life ins.	4,109	5,056	3,169	3,413	5,600	5,775
Nonfarm real estate	33,282	39,010	60,857	79,000	17,333	17,333
Auto (personal share)	2,613	3,110	3,159	4,994	2,833	2,333
Stocks & bonds	4,169	4,872	3,260	5,146	10,270	10,603
Household furnishings	8,147	8,555	6,814	7,220	2,917	2,833
All other	<u>3,740</u>	<u>4,698</u>	<u>2,363</u>	<u>4,100</u>	<u>8,799</u>	<u>8,663</u>
Tot. Nonfarm Assets**	\$ 62,803	\$ 72,489	\$ 82,497	\$107,113	\$ 57,252	\$ 58,208
Total Farm & Nonfarm Assets	\$582,305	\$620,563	\$769,855	\$833,726	\$1,348,996	\$1,457,838
LIABILITIES						
Accounts payable	\$ 4,542	\$ 4,844	\$ 5,691	\$ 6,437	\$ 5,733	\$ 7,389
Operating debt	2,579	4,444	7,469	8,554	6,674	7,619
Short term	2,241	2,456	3,934	3,904	8,619	19,412
Advanced gov't. rec.	36	0	45	0	0	0
Intermediate***	71,731	72,836	90,208	90,923	186,873	217,811
Long term*	<u>114,814</u>	<u>111,404</u>	<u>123,963</u>	<u>123,730</u>	<u>142,954</u>	<u>135,997</u>
Total Farm Liab.	\$195,943	\$195,983	\$231,310	\$233,547	\$ 350,853	\$ 388,228
Total Nonfarm Liab.**	<u>1,959</u>	<u>3,002</u>	<u>3,219</u>	<u>3,990</u>	<u>0</u>	<u>0</u>
Total Farm & Nonfarm Liabilities	\$197,902	\$198,985	\$234,529	\$237,537	\$ 350,853	\$ 388,228
Farm Net Worth (Equity Capital)	\$323,559	\$352,090	\$456,047	\$493,066	\$ 940,892	\$1,011,402
Farm & Nonfarm Net Worth	\$384,403	\$421,578	\$535,326	\$596,189	\$ 998,143	\$1,069,610
FINANCIAL MEASURES						
Percent equity			64%		68%	72%
Debt/asset ratio-long term			0.43		0.36	0.21
Debt/asset ratio-inter. & current			0.29		0.28	0.34
Change in net worth with apprec.			\$28,531		\$37,018	\$70,510
Total farm debt per cow			\$2,178		\$1,979	\$1,773
Debt payments made per cow			\$505		\$506	\$325
Debt payments as % of milk sales			23%		23%	14%
Amount avail. for debt service			\$39,073		\$56,652	\$110,810
Proj. cash flow coverage ratio for 1989			1.00		1.17	1.52

*Includes discounted lease payments. **Average of 207 single proprietorships reporting nonfarm assets and liabilities, 35 partnerships, and 6 corporations.

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

Table 53.

TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1979 to 1988

Item	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Number of farms	610	600	553	572	510	458	404	414	426	406
<u>Cropping Program</u>										
Total tillable acres	228	246	257	262	272	280	280	288	305	302
Tillable acres rented	58	76	83	83	91	94	93	100	105	104
Hay crop acres	129	131	131	135	139	143	142	147	153	156
Corn silage acres	62	60	59	70	72	76	69	67	67	74
Hay crop, tons DM/acre	2.7	2.5	2.5	2.6	2.5	2.7	2.7	2.7	2.7	2.6
Corn silage, tons/acre	113.6	14.5	14.9	14.0	13.5	14.0	14.3	14.3	16.2	14.1
Fert. & lime exp. /tillable acre	\$29	\$29	\$32	\$33	\$31	\$32	\$32	\$26	\$27	\$29
Machinery cost/cow	\$344	\$425	\$465	\$432	\$413	\$433	\$426	\$400	\$413	\$398
<u>Dairy Analysis</u>										
Number of cows	75	75	79	82	88	89	89	95	101	102
Number of heifers	53	56	59	67	72	76	73	77	79	82
Milk sold, cwt.	10,698	10,761	11,420	12,105	13,432	13,735	14,001	15,374	16,498	17,200
Milk sold/cow, lbs.	14,264	14,300	14,456	14,762	15,264	15,433	15,679	16,237	16,351	16,882
Purchased dairy feed/cwt. milk	\$3.27	\$3.47	\$3.51	\$3.27	\$3.44	\$3.28	\$3.04	\$3.10	\$3.21	\$3.71
Purc. grain & conc. as % milk receipts	27%	27%	26%	24%	25%	24%	23%	24%	24%	28%
Purc. feed & crop exp./cwt. milk	\$4.24	\$4.49	\$4.67	\$4.53	\$4.62	\$4.53	\$4.13	\$4.00	\$4.11	\$4.62
<u>Capital Efficiency</u>										
Farm capital/cow	\$5,063	\$5,539	\$5,676	\$5,517	\$5,421	\$5,520	\$5,801	\$5,792	\$5,894	\$6,133
Real estate/cow	\$2,437	\$2,602	\$2,693	\$2,664	\$2,668	\$2,731	\$2,726	\$2,758	\$2,805	\$2,902
Mach. invest./cow	\$911	\$1,015	\$1,078	\$1,047	\$1,038	\$1,057	\$1,083	\$1,062	\$1,057	\$1,083
Capital turnover, yrs.	2.3	2.2	2.4	2.5	2.4	2.3	2.5	2.3	2.2	2.2
<u>Labor Efficiency</u>										
Worker equivalent	2.70	2.70	2.75	2.83	3.00	3.08	3.17	3.17	3.19	3.17
Operator/manager eq.	1.20	1.30	1.25	1.30	1.32	1.31	1.34	1.33	1.32	1.35
Milk sold/worker, lbs.	400,674	403,000	415,273	427,739	447,733	445,942	442,125	497,555	516,728	542,708
Cows/worker	28	28	29	29	29	29	28	31	32	32
Labor cost/cow	\$289	\$326	\$335	\$352	\$344	\$366	\$387	\$385	\$400	\$426
<u>Profitability & Financial Analysis</u>										
Labor & mgmt. income/oper.	\$7,598	\$1,565	\$-4,261	\$3,451	\$5,514	\$2,262	\$2,850	\$3,837	\$11,042	\$11,911
Farm net worth	\$261,398	\$288,022	\$301,975	\$306,589	\$322,001	\$336,210	\$325,664	\$348,909	\$398,209	\$426,123
Percent equity	65%	66%	64%	63%	63%	64%	63%	62%	65%	66%

Table 54.

TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1979 to 1988

Item	1979	1980	1981	1982	1983	1984	1985*	1986*	1987*	1988*
<u>Cash Operating Expenses</u>										
Hired labor	\$.99	\$ 1.09	\$ 1.20	\$ 1.29	\$ 1.25	\$ 1.39	\$ 1.38	\$ 1.38	\$ 1.49	\$ 1.46
Purchased feed	3.37	3.60	3.62	3.40	3.59	3.46	3.09	3.15	3.26	3.73
Machinery repairs & rent	.69	.75	.81	.81	.77	.80	.78	.75	.88	.83
Auto expenses (farm share)	.04	.04	.04	.04	.04	.03	.03	.04	.04	.04
Fuel, oil & grease	.43	.54	.62	.59	.49	.50	.48	.34	.35	.34
Replacement livestock	.50	.29	.23	.19	.16	.10	.10	.13	.13	.11
Breeding fees	.15	.16	.18	.19	.19	.20	.20	.19	.19	.18
Veterinary & medicine	.22	.24	.28	.29	.28	.29	.27	.28	.28	.28
Milk marketing	.32	.35	.40	.50	.93	1.03	.80	.84	.74	.52
Other dairy expenses	.42	.47	.49	.52	.54	.55	.53	.52	.53	.56
Lime & fertilizer	.62	.66	.72	.71	.63	.66	.63	.49	.50	.51
Seeds & plants	.20	.20	.23	.23	.21	.22	.23	.21	.21	.21
Spray & other crop expense	.16	.16	.21	.18	.19	.20	.22	.20	.19	.19
Land, building, fence repair	.21	.21	.22	.21	.18	.18	.17	.16	.20	.22
Taxes	.28	.31	.35	.34	.34	.33	.34	.33	.35	.35
Insurance	.20	.24	.23	.23	.21	.20	.22	.22	.22	.23
Telephone & elec. (farm share)	.25	.28	.32	.35	.36	.36	.37	.39	.38	.38
Interest paid	1.00	1.17	1.43	1.54	1.40	1.40	1.25	1.18	1.04	1.02
Misc. (including rent)	.31	.37	.41	.43	.44	.44	.40	.41	.45	.41
Total Operating Expenses	\$10.36	\$11.13	\$11.99	\$12.04	\$12.20	\$12.34	\$11.50	\$11.22	\$11.43	\$11.57
Less: Nonmilk cash receipts	1.78	1.67	1.58	1.47	1.49	1.74	1.58	1.52	1.84	1.86
Increase in feed & supplies**	.40	.43	.11	.03	.26	.18	.05	.01	.16	.16
Increase in livestock	.38	.39	.25	.35	.24	.16	.18	.12	.10	.08
OPERATING COST OF MILK PRODUCTION	\$ 7.80	\$ 8.64	\$10.05	\$10.19	\$10.21	\$10.26	\$ 9.69	\$ 9.57	\$ 9.33	\$ 9.47
<u>Overhead Expenses</u>										
Depreciation: mach. & bldgs.	\$ 1.06	\$ 1.43	\$ 1.56	\$ 1.60	\$ 1.56	\$ 1.65	\$ 1.64	\$ 1.54	\$ 1.43	\$ 1.31
Unpaid labor	.13	.14	.14	.14	.12	.12	.12	.13	.10	.11
Operator(s) labor***	.91	1.05	.99	.93	.89	.87	.97	.86	.87	.95
Operator(s) mgmt. (5% of cash rec.)	.68	.72	.76	.75	.76	.76	.72	.71	.74	.74
Interest on farm eq. cap. (5%)	1.22	1.34	1.32	1.27	1.20	1.22	1.16	1.10	1.15	1.19
Total Overhead Expenses	\$ 4.00	\$ 4.68	\$ 4.77	\$ 4.69	\$ 4.53	\$ 4.62	\$ 4.61	\$ 4.34	\$ 4.28	\$ 4.30
TOTAL COST OF MILK PRODUCTION	\$11.80	\$13.32	\$14.82	\$14.88	\$14.74	\$14.88	\$14.30	\$13.91	\$13.61	\$13.77
AVERAGE FARM PRICE OF MILK	\$11.90	\$12.81	\$13.66	\$13.56	\$13.64	\$13.49	\$12.90	\$12.65	\$12.89	\$13.03
* Return per cwt. to operator labor, capital, & management	\$2.91	\$2.60	\$1.91	\$1.63	\$1.75	\$1.46	\$1.45	\$1.41	\$2.04	\$2.14
Rate of return on farm eq. cap.	5.4%	3.1%	0.6%	-0.2%	0.4%	-0.7%	-1.0%	-0.7%	1.9%	1.8%

*Accrual receipts and expenses. **Increase in grown feeds, 1985-1988. ***1979 = \$650/month, 1980-1984 = \$750/month, 1985 = \$800/month, 1986 = \$850/month, 1987 = \$900/month, 1988 = \$1,000/month of operator labor.

* excludes depreciation unpaid labor

Table 55. FARM RECEIPTS AND EXPENSES PER COW AND PER
HUNDREDWEIGHT FOR TWO LEVELS OF MILK PRODUCTION
406 New York Dairy Farms, 1988

Item	406 Dairy Farms		156 Dairy Farms w/ Milk/Cow <16,000#		250 Dairy Farms w/ Milk/Cow ≥16,000#	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<u>ACCRUAL RECEIPTS</u>						
Milk sales	\$2,199	\$13.03	\$1,847	\$13.09	\$2,359	\$13.00
Dairy cattle	195	1.16	156	1.11	213	1.18
Dairy calves	41	.24	36	.26	43	.24
Other livestock	5	.03	7	.05	4	.02
Crops	50	.30	39	.28	55	.31
Government receipts	50	.30	42	.30	53	.29
All other	<u>35</u>	<u>.22</u>	<u>31</u>	<u>.21</u>	<u>37</u>	<u>.21</u>
TOTAL ACCRUAL RECEIPTS	\$2,575	\$15.28	\$2,158	\$15.30	\$2,764	\$15.25
<u>ACCRUAL EXPENSES</u>						
Labor: Hired	\$ 247	\$ 1.46	\$ 149	\$ 1.06	\$ 292	\$ 1.61
Feed: Dairy grain & conc.	608	3.60	522	3.70	648	3.57
Dairy roughage	18	.11	22	.16	16	.09
Nondairy	4	.02	2	.01	4	.02
Machinery: Machine hire/ rent/ lease	20	.12	17	.12	22	.12
Mach. repairs/parts	120	.71	106	.75	127	.70
Auto expense (farm share)	6	.04	8	.06	5	.03
Fuel, oil, grease	57	.34	54	.38	59	.32
Livestock: Replacement livestock	19	.11	31	.22	14	.08
Breeding	31	.18	23	.16	35	.19
Vet & medicine	47	.28	31	.22	54	.30
Milk marketing	87	.52	81	.57	90	.50
Cattle lease/rent	2	.01	2	.02	2	.01
Other livestock expense	93	.55	74	.52	102	.56
Crops: Fertilizer & lime	86	.51	75	.53	90	.50
Seeds & plants	35	.21	29	.21	38	.21
Spray & other crop expense	33	.19	24	.17	37	.20
Real Estate: Land/ building/fence repairs	37	.22	30	.21	41	.23
Taxes	59	.35	57	.40	60	.33
Rent & lease	41	.24	34	.24	44	.24
Other: Insurance	38	.23	34	.24	40	.22
Telephone (farm share)	8	.04	9	.06	7	.04
Electricity (farm share)	56	.33	54	.38	58	.32
Interest paid	173	1.02	173	1.23	173	.95
Miscellaneous	<u>29</u>	<u>.17</u>	<u>19</u>	<u>.13</u>	<u>34</u>	<u>.19</u>
TOTAL OPERATING EXPENSES	\$1,954	\$11.56	\$1,660	\$11.75	\$2,092	\$11.53
Expansion livestock	22	.13	14	.10	26	.14
Machinery depreciation	141	.84	133	.94	145	.80
Building depreciation	<u>81</u>	<u>.48</u>	<u>67</u>	<u>.48</u>	<u>87</u>	<u>.48</u>
TOTAL ACCRUAL EXPENSES	\$2,198	\$13.01	\$1,874	\$13.27	\$2,350	\$12.95

Table 56.

FARM RECEIPTS AND EXPENSES PER COW AND PER
HUNDREDWEIGHT FOR TWO HERD SIZE CATEGORIES
406 New York Dairy Farms, 1988

Item	406 Dairy Farms		266 Dairy Farms with <100 Cows		140 Dairy Farms with ≥100 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
<u>ACCRUAL RECEIPTS</u>						
Milk sales	\$2,199	\$13.03	\$2,102	\$12.89	\$2,264	\$13.11
Dairy cattle	195	1.16	183	1.12	204	1.18
Dairy calves	41	.24	41	.25	41	.24
Other livestock	5	.03	4	.02	6	.03
Crops	50	.30	44	.27	54	.32
Government receipts	50	.30	39	.24	57	.33
All other	35	.22	32	.20	37	.22
TOTAL ACCRUAL RECEIPTS	\$2,575	\$15.28	\$2,445	\$14.99	\$2,663	\$15.43
<u>ACCRUAL EXPENSES</u>						
Labor: Hired	\$ 247	\$ 1.46	\$ 157	\$.96	\$ 307	\$ 1.78
Feed: Dairy grain & conc.	608	3.60	575	3.53	631	3.65
Dairy roughage	18	.11	21	.13	16	.09
Nondairy	4	.02	5	.03	3	.02
Machinery: Machine hire/ rent/ lease	20	.12	22	.14	19	.11
Mach. repairs/parts	120	.71	117	.72	123	.71
Auto expense (farm share)	6	.04	10	.06	4	.02
Fuel, oil, grease	57	.34	54	.33	59	.34
Livestock: Replacement livestock	19	.11	23	.14	17	.10
Breeding	31	.18	33	.20	30	.17
Vet & medicine	47	.28	42	.26	51	.29
Milk marketing	87	.52	94	.58	83	.48
Cattle lease/rent	2	.01	1	.01	2	.01
Other livestock expense	93	.55	94	.58	92	.53
Crops: Fertilizer & lime	86	.51	83	.51	87	.51
Seeds & plants	35	.21	34	.21	36	.21
Spray & other crop expense	33	.19	27	.17	36	.21
Real Estate: Land/ building/fence repair	37	.22	35	.22	39	.23
Taxes	59	.35	67	.41	54	.31
Rent & lease	41	.24	34	.21	45	.26
Other: Insurance	38	.23	44	.27	34	.20
Telephone (farm share)	8	.04	10	.06	6	.03
Electricity (farm share)	56	.33	62	.38	52	.30
Interest paid	173	1.02	174	1.06	172	1.00
Miscellaneous	29	.17	27	.17	30	.17
TOTAL OPERATING EXPENSES	\$1,954	\$11.56	\$1,845	\$11.34	\$2,028	\$11.73
Expansion livestock	22	.13	8	.05	32	.18
Machinery depreciation	141	.84	153	.94	134	.77
Building depreciation	81	.48	76	.47	83	.48
TOTAL ACCRUAL EXPENSES	\$2,198	\$13.01	\$2,082	\$12.80	\$2,277	\$13.16

Table 57. COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
420 New York Dairy Farms, 1988*

Item	Region**			
	1	2	3	4
Number of farms	136	93	79	112
<u>ACCRUAL EXPENSES</u>				
Hired labor	\$ 19,419	\$ 49,735	\$ 15,668	\$ 18,319
Feed	57,832	94,906	48,674	55,876
Machinery	18,922	32,045	14,532	18,796
Livestock	22,953	40,899	20,157	30,913
Crops	13,462	26,449	10,526	14,417
Real estate	12,197	20,712	9,582	13,838
Other	<u>26,163</u>	<u>47,521</u>	<u>25,377</u>	<u>26,864</u>
Total Operating	\$170,948	\$312,267	\$144,516	\$179,023
Expansion livestock	670	7,051	400	1,402
Machinery depreciation	12,885	21,543	13,224	11,574
Building depreciation	<u>6,693</u>	<u>14,204</u>	<u>6,004</u>	<u>6,641</u>
Total Accrual Expenses	\$191,196	\$355,065	\$164,144	\$198,640
<u>ACCRUAL RECEIPTS</u>				
Milk sales	\$190,561	\$354,220	\$163,801	\$197,074
Livestock	19,817	44,197	17,396	19,520
Crops	3,129	13,717	2,088	6,428
All other	<u>6,712</u>	<u>16,442</u>	<u>5,204</u>	<u>8,837</u>
Total Accrual Receipts	\$220,221	\$428,576	\$188,489	\$231,859
<u>PROFITABILITY ANALYSIS</u>				
Net farm income (w/o appreciation)	\$29,025	\$73,511	\$24,345	\$33,219
Net farm income (w/appreciation)	\$49,496	\$96,849	\$37,236	\$56,169
Labor & management income	\$8,613	\$43,228	\$8,120	\$10,044
Number of operators	1.34	1.45	1.28	1.42
Labor & management income/operator	\$6,428	\$29,812	\$6,344	\$7,073
<u>BUSINESS FACTORS</u>				
Worker equivalent	2.93	4.29	2.70	2.90
Number of cows	89	152	80	90
Number of heifers	71	122	65	71
Acres of hay crops***	149	166	157	159
Acres of corn silage***	61	119	55	66
Total tillable acres	275	439	245	285
Pounds of milk sold	1,467,858	2,744,857	1,299,533	1,453,245
Pounds of milk sold/cow	16,421	18,033	16,257	16,131
Tons hay crop dry matter/acre	2.4	2.9	2.3	2.7
Tons corn silage/acre	13.5	14.6	14.0	13.9
Cows/worker	31	35	30	31
Pounds of milk sold/worker	501,790	639,378	480,858	501,068
Percent grain & conc.				
is of milk receipts	29%	26%	28%	27%
Feed & crop expense/cwt. milk	\$4.84	\$4.39	\$4.51	\$4.83
Fertilizer & lime/crop acre	\$27.46	\$31.94	\$24.41	\$30.12
Machinery cost/tillable acre	\$134	\$139	\$131	\$124
Average price/cwt. milk	\$12.98	\$12.90	\$12.60	\$13.56

*Includes 14 dairy cash-crop farms. **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 58. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
52 New York Dairy-Renter Farms,* 1988

ACCRUAL EXPENSES			ACCRUAL RECEIPTS		
Labor: Hired	\$ 11,510		Milk sales	\$150,140	
Feed: Dairy grain & conc.	42,023		Dairy cattle	15,054	
Dairy roughage	6,077		Dairy calves	3,237	
Nondairy	96		Other livestock	127	
Machinery: Mach. hire/rent/lease	2,258		Crops	5,010	
Mach. repairs/parts	7,357		Government receipts	2,506	
Auto expense (farm share)	434		Custom machine work	455	
Fuel, oil, grease	3,749		Gas tax refund	77	
Livestock: Replacement lvstk.	5,092		Other	1,603	
Breeding	2,818				
Vet & medicine	3,143		TOTAL ACCRUAL RECEIPTS	\$178,210	
Milk marketing	7,505				
Cattle lease/rent	296		PROFITABILITY ANALYSIS		
Other livestock expense	7,343		Net farm inc. (w/o apprec.)	\$27,409	
Crops: Fertilizer & lime	4,913		Net farm inc. (w/apprec.)	\$34,275	
Seeds & plants	2,204		Labor & mgt. income/farm	\$17,508	
Spray & other crop expense	1,726		Number of operators	1.28	
Real Estate: Land/building/			Labor & mgt. income/oper.	\$13,678	
fence repair	1,792		Rate of return on equity		
Taxes	1,473		capital including apprec.	4.8%	
Rent & lease	12,652		BUSINESS FACTORS		
Other:			Number of cows	71	
Insurance	2,689		Number of heifers	53	
Telephone (farm share)	568		Worker equivalent	2.49	
Electricity (farm share)	4,475		Total tillable acres	204	
Interest paid	5,174		Milk sold per cow, lbs.	16,365	
Miscellaneous	1,738		Hay DM per acre, tons	2.4	
TOTAL OPERATING EXPENSES	\$139,105		Corn silage per acre, tons	13.4	
Expansion livestock	1,538		Milk sold per worker, lbs.	464,868	
Machinery depreciation	9,010		Grain/conc. as % milk sales	28%	
Building depreciation	1,148		Feed & crop exp./cwt. milk	\$4.92	
TOTAL ACCRUAL EXPENSES	\$150,801		Labor & mach. costs/cow	\$776	
			Average price/cwt. milk	\$12.96	
ASSETS			LIABILITIES		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Farm cash/chkg./sav.	\$ 5,869	\$ 5,861	Accounts payable	\$ 3,266	\$ 4,105
Accounts receivable	12,334	13,995	Operating debt	2,731	2,982
Prepaid expenses	1	10	Short-term	1,407	1,347
Feed & supplies	30,669	32,370	Advanced gov't. rec.	0	0
Dairy cows**	61,997	67,324	Intermediate***	49,637	49,769
Heifers	22,241	24,292	Long-term**	6,272	7,202
Bulls & other lvstk.	310	425	Total Farm Liab.	\$ 63,313	\$ 65,406
Machinery & equip**	65,937	68,041	Nonfarm Liab.****	7,465	6,959
FLB & PCA stock	1,195	1,034	Total Farm & Nonfarm		
Other stock & cert.	4,606	4,908	Liabilities	\$ 70,778	\$ 72,365
Land & buildings**	13,666	14,977			
Total Farm Assets	\$218,825	\$233,236	Farm Net Worth	\$155,512	\$167,830
Nonfarm Assets****	48,867	63,088	Farm & Nonfarm		
Total Farm & Nonfarm			Net Worth	\$196,914	\$223,959
Assets	\$267,692	\$296,324			

*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 24 farms reporting nonfarm assets and liabilities.

Bulls & other lvstk.	1,254	1,359	Total Farm Liab.	\$213,974	\$216,567
Machinery & equip.*	107,740	112,862	Nonfarm Liab.***	2,090	3,069
FLB & PCA stock	4,788	5,017	Total Farm & Nonfarm		
Other stock & cert.	7,497	7,770	Liabilities	\$216,064	\$219,636
Land & buildings*	289,445	301,905			
Total Farm Assets	\$606,992	\$642,690	Farm Net Worth	\$393,018	\$426,123
Nonfarm Assets***	65,449	77,030	Farm & Nonfarm		
Total Farm & Nonfarm			Net Worth	\$456,377	\$500,084
Assets	\$672,441	\$719,720			

*Includes discounted lease payments. **Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ***Average of 248 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)
40 New York Dairy Farms, 1988

<u>ACCRUAL EXPENSES</u>			<u>ACCRUAL RECEIPTS</u>		
Labor: Hired	\$ 94,323		Milk sales		\$621,436
Feed: Dairy grain & conc.	167,507		Dairy cattle		63,462
Dairy roughage	4,917		Dairy calves		11,442
Nondairy	968		Other livestock		1,205
Machinery: Mach. hire/rent/lease	3,497		Crops		20,500
Mach. repairs/parts	28,849		Government receipts		13,633
Auto expense (farm share)	758		Custom machine work		651
Fuel, oil, grease	13,776		Gas tax refund		776
Livestock: Replacement lvstk.	3,035		Other		<u>11,278</u>
Breeding	7,905				
Vet & medicine	14,514		TOTAL ACCRUAL RECEIPTS		\$744,381
Milk marketing	18,418				
Cattle lease/rent	553		<u>PROFITABILITY ANALYSIS</u>		
Other livestock expense	24,367		Net farm inc. (w/o apprec.)		\$152,013
Crops: Fertilizer & lime	21,291		Net farm inc. (w/apprec.)		\$183,496
Seeds & plants	8,143		Labor & mgt. income/farm		\$100,165
Spray & other crop expense	9,540		Number of operators		1.74
Real Estate: Land/building/			Labor & mgt. income/oper.		\$57,566
fence repair	10,080		Rate of return on equity		
Taxes	11,810		capital including apprec.		13.8%
Rent & lease	11,153				
Other:			<u>BUSINESS FACTORS</u>		
Insurance	8,110		Number of cows		256
Telephone (farm share)	1,113		Number of heifers		200
Electricity (farm share)	12,457		Worker equivalent		6.43
Interest paid	36,959		Total tillable acres		629
Miscellaneous	<u>7,585</u>		Milk sold per cow, lbs.		18,437
TOTAL OPERATING EXPENSES	\$521,628		Hay DM per acre, tons		3.1
			Corn silage per acre, tons		15.0
Expansion livestock	\$ 14,160		Milk sold per worker, lbs.		733,768
Machinery depreciation	32,788		Grain/conc. as % milk sales		27%
Building depreciation	<u>23,792</u>		Feed & crop exp./cwt. milk		\$4.48
TOTAL ACCRUAL EXPENSES	\$592,368		Labor & mach. costs/cow		\$812
			Average price/cwt. milk		\$13.17
<u>ASSETS</u>			<u>LIABILITIES</u>		
Farm cash/chkg./sav.	Jan. 1 \$ 13,824	Dec. 31 \$ 24,292	Accounts payable	Jan. 1 \$ 4,070	Dec. 31 \$ 4,237
Accounts receivable	47,370	60,033	Operating debt	21,857	33,207
Prepaid expenses	1,170	1,835	Short-term	7,755	11,405
Feed & supplies	146,234	163,741	Advanced gov't. rec.	130	0
Dairy cows*	209,789	227,541	Intermediate**	195,927	222,015
Heifers	83,931	96,605	Long-term*	<u>206,529</u>	<u>200,644</u>
Bulls & other lvstk.	1,613	2,299	Total Farm Liab.	\$436,269	\$471,508
Machinery & equip*	220,235	233,588	Nonfarm Liab.***	<u>363</u>	<u>121</u>
FLB & PCA stock	9,017	11,419	Total Farm & Nonfarm		
Other stock & cert.	27,448	27,667	Liabilities	\$436,632	\$471,629
Land & buildings*	<u>631,002</u>	<u>675,244</u>			
Total Farm Assets	\$1,391,633	\$1,524,263	Farm Net Worth	\$955,364	\$1,052,755
Nonfarm Assets***	<u>67,497</u>	<u>73,951</u>	Farm & Nonfarm		
Total Farm & Nonfarm			Net Worth	\$1,022,498	\$1,126,585
Assets	\$1,459,130	\$1,598,214			

*Includes discounted lease payments. **Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ***Average of 12 farms reporting nonfarm assets and liabilities.

Table 60. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
Average of 406 New York Dairy Farms, 1988

<u>ACCRUAL EXPENSES</u>			<u>ACCRUAL RECEIPTS</u>		
Labor: Hired	\$ 25,182		Milk sales	\$224,052	
Feed: Dairy grain & conc.	61,993		Dairy cattle	19,928	
Dairy roughage	1,845		Dairy calves	4,185	
Nondairy	370		Other livestock	499	
Machinery: Mach. hire/rent/lease	2,055		Crops	5,126	
Mach. repairs/parts	12,261		Government receipts	5,083	
Auto expense (farm share)	634		Custom machine work	301	
Fuel, oil, grease	5,829		Gas tax refund	216	
Livestock: Replacement lvstk.	1,950		Other	3,188	
Breeding	3,166		- Nonfarm noncash capital	(-) 67	
Vet & medicine	4,788		TOTAL ACCRUAL RECEIPTS	\$262,510	
Milk marketing	8,886		<u>PROFITABILITY ANALYSIS</u>		
Cattle lease/rent	186		Net farm inc. (w/o apprec.)	\$38,509	
Other livestock expense	9,466		Net farm inc. (w/apprec.)	\$58,794	
Crops: Fertilizer & lime	8,714		Labor & mgt. income/farm	\$16,080	
Seeds & plants	3,567		Number of operators	1.35	
Spray & other crop expense	3,327		Labor & mgt. income/oper.	\$11,911	
Real Estate: Land/building/ fence repair	3,819		Rate of return on equity capital including apprec.	7.3%	
Taxes	5,993		<u>BUSINESS FACTORS</u>		
Rent & lease	4,142		Number of cows	102	
Other:			Number of heifers	82	
Insurance	3,875		Worker equivalent	3.17	
Telephone (farm share)	767		Total tillable acres	302	
Electricity (farm share)	5,754		Milk sold per cow, lbs.	16,882	
Interest paid	17,603		Hay DM per acre, tons	2.6	
Miscellaneous	2,955		Corn silage per acre, tons	14.1	
TOTAL OPERATING EXPENSES	\$199,127		Milk sold per worker, lbs.	542,708	
Expansion livestock	2,259		Grain/conc. as % milk sales	28%	
Machinery depreciation	14,402		Feed & crop exp./cwt. milk	\$4.62	
Building depreciation	8,213		Labor & mach. costs/cow	\$825	
TOTAL ACCRUAL EXPENSES	\$224,001		Average price/cwt. milk	\$13.03	
<u>ASSETS</u>			<u>LIABILITIES</u>		
	Jan. 1	Dec. 31		Jan. 1	Dec. 31
Farm cash/chkg./sav.	\$ 5,911	\$ 7,566	Accounts payable	\$ 4,929	\$ 5,427
Accounts receivable	18,413	21,040	Operating debt	4,176	5,772
Prepaid expenses	134	205	Short-term	3,051	3,743
Feed & supplies	47,000	51,446	Advanced gov't. rec.	37	0
Dairy cows*	88,704	94,203	Intermediate**	82,920	85,458
Heifers	36,106	39,317	Long-term*	118,861	116,167
Bulls & other lvstk.	1,254	1,359	Total Farm Liab.	\$213,974	\$216,567
Machinery & equip.*	107,740	112,862	Nonfarm Liab.***	2,090	3,069
FLB & PCA stock	4,788	5,017	Total Farm & Nonfarm		
Other stock & cert.	7,497	7,770	Liabilities	\$216,064	\$219,636
Land & buildings*	289,445	301,905			
Total Farm Assets	\$606,992	\$642,690	Farm Net Worth	\$393,018	\$426,123
Nonfarm Assets***	65,449	77,030	Farm & Nonfarm		
Total Farm & Nonfarm			Net Worth	\$456,377	\$500,084
Assets	\$672,441	\$719,720			

*Includes discounted lease payments. **Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ***Average of 248 farms reporting nonfarm assets and liabilities.

NOTES

APPENDIX

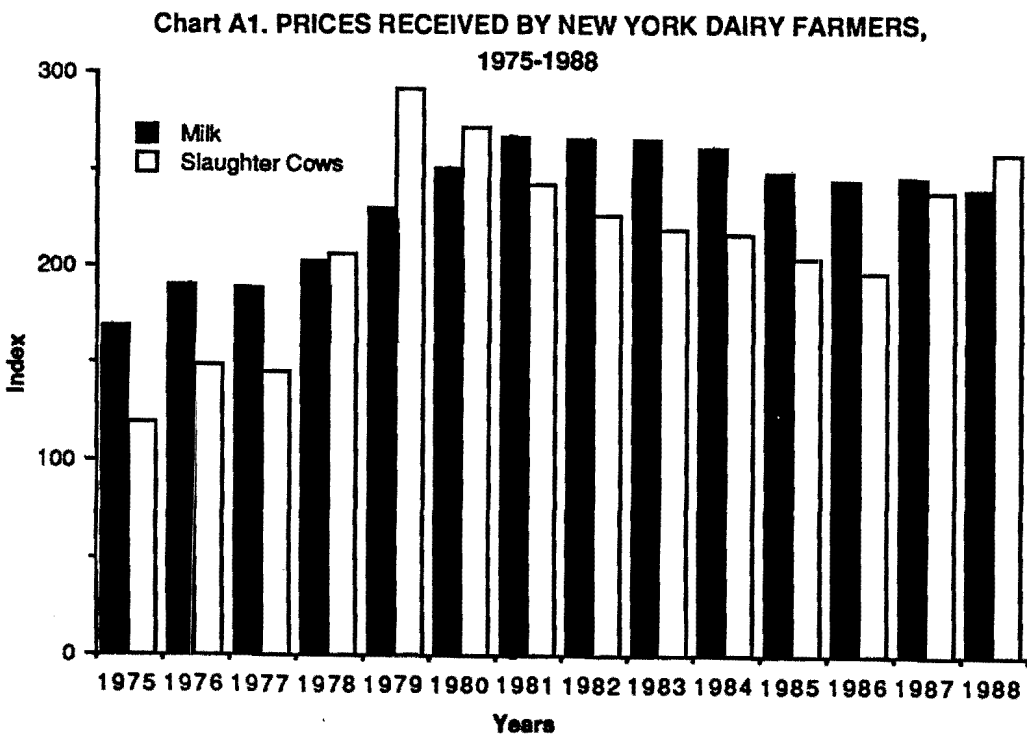
THE ECONOMIC ENVIRONMENT FACING
NEW YORK DAIRY FARMERS

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 and increased slightly in 1987. The 1988 milk price averaged \$0.30 per hundredweight lower than in 1987, and is the lowest average price received since 1979. The average monthly farm price exceeded 1987 levels during the last three months of 1988. Slaughter cow prices hit a six-year low in 1975, peaked in 1979, and declined through the early 1980's. The 1988 slaughter cow price averaged \$3.48 per hundredweight higher than in 1987.

Table A1. PRICES RECEIVED BY NEW YORK DAIRY FARMERS, 1975-1988

Year	All Milk (\$/cwt)	Slaughter Cows (\$/cwt)	Monthly Farm Price of Milk	
			(\$/cwt)	
			1987	1988
1975	8.75	20.60	January	13.40 12.50
1976	9.83	25.40	February	13.10 12.30
1977	9.75	25.00	March	12.50 11.90
1978	10.50	35.30	April	12.10 11.50
1979	11.90	49.80	May	11.70 11.20
			June	11.70 11.00
1980	13.00	46.30	July	12.20 11.60
1981	13.80	41.30	August	12.70 12.30
1982	13.70	38.60	September	13.30 13.00
1983	13.70	37.20	October	13.50 13.60
1984	13.50	36.90	November	13.40 13.90
			December	12.90 13.70
1985	12.80	34.90		
1986	12.60	33.60		
1987	12.70	40.70		
1988	12.40	44.18		

SOURCE: NYCRS, New York Crop and Livestock Report.



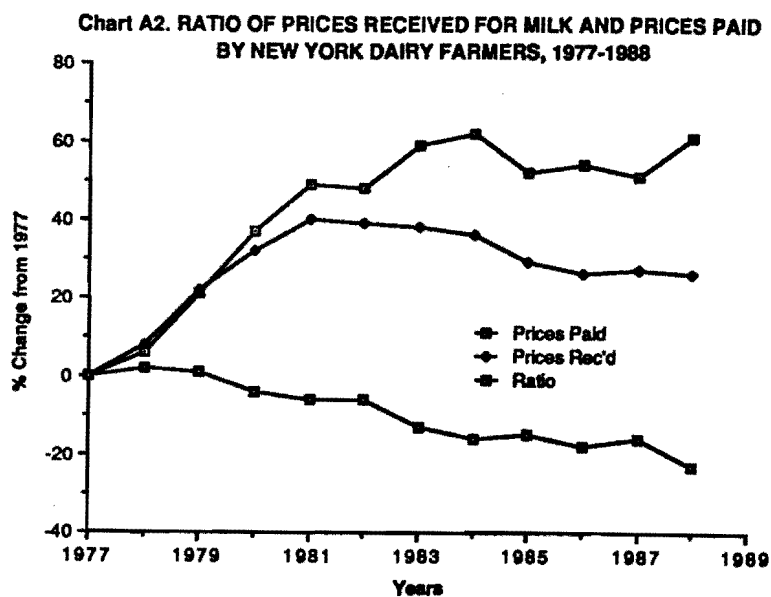
The prices dairy farmers pay for a given quantity of goods and services has a major influence on farm production costs. The astute manager will keep close watch on unit costs and utilize the most economical goods and services.

Table A2. PRICES PAID BY NEW YORK FARMERS FOR SELECTED ITEMS, 1978-1988

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)
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	4.01***
1986	162.90	200**	65.60	0.840**	16,600	4.41***
1987	152.80**	190**	64.90	0.765**	16,700	4.60***
1988	180.75**	208**	64.20	0.810**	17,150	5.01***

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.



SOURCE: NYCRS, New York Agricultural Statistics.