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DAIRY FARM MANAGEMENT

BUSINESS SUMMARY NEW YORK 1989

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ABSTRACT

This summary and analysis of 409 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 104 cows per farm and 17,259 pounds of milk sold per cow in 1989. Net farm income excluding appreciation, which is the return to the operator's labor, management, capital, and other unpaid family labor, averaged $49,575 per farm. The rate of return to all capital invested in the farm business averaged 9.4 percent in 1989.

TABLE OF CONTENTS

LIST OF FIGURES AND CHARTS

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 1989, about 500 dairy farmers participated. Business records submitted by dairy farmers from 48 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 microcomputer in their offices and/or on the farm to process and return the individual farm business reports for immediate use. Regional reports are prepared by Cornell faculty and used by DFBS cooperators and other farmers to compare their farm 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 409 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 409 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

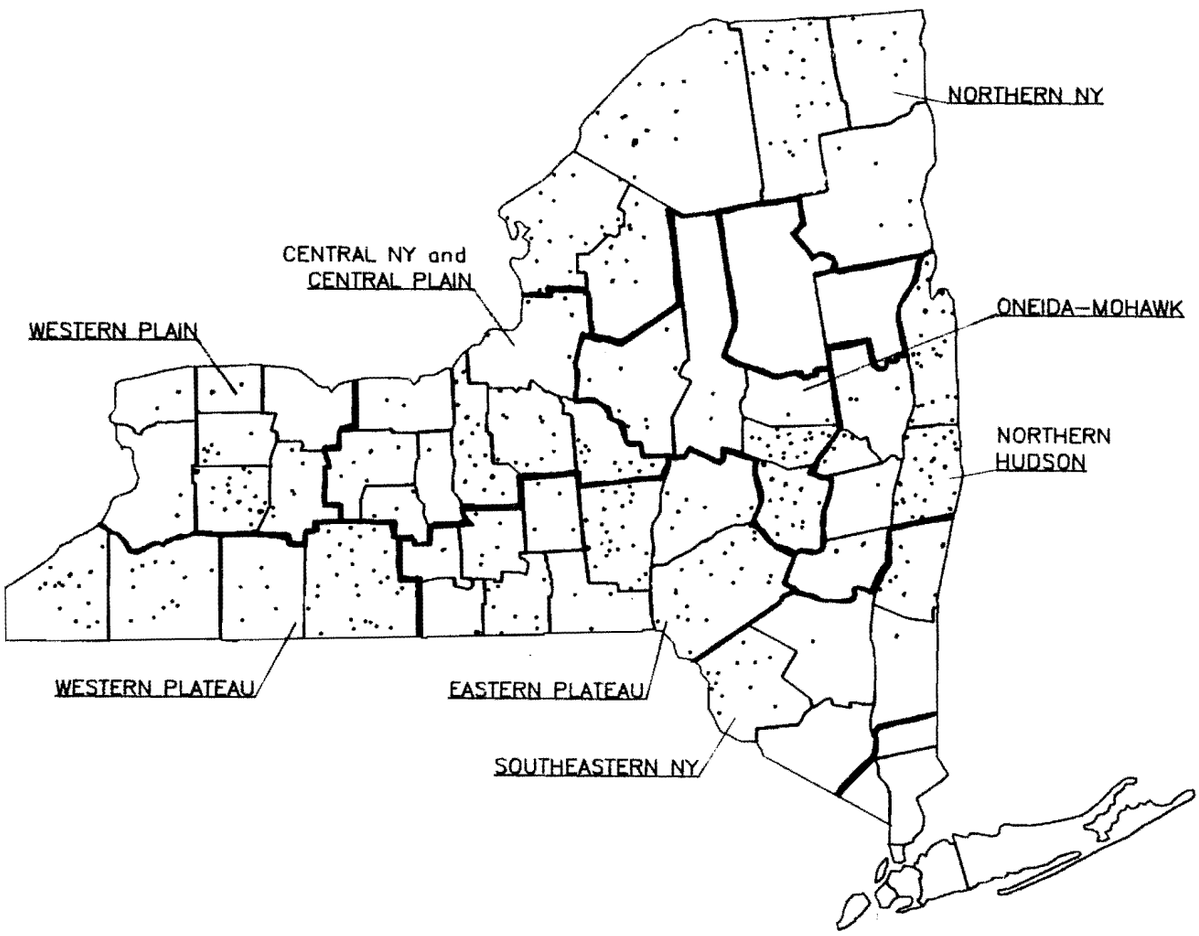
Accrual accounting procedures have been used to provide the most accurate accounting of farm receipts and farm expenses for measuring farm profits. An explanation of these procedures is found on page 6. Four measures of farm profits are calculated on pages 9 through 11. The balance sheet and cash flow 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

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

Figure 1. LOCATION OF THE 409 NEW YORK DAIRY FARMS IN THE 1989 DAIRY FARM BUSINESS SUMMARY



1989 Regional Summary Publications

Region	Publications	Author(s)
Northern New York	A.E. Ext. 90-8	Stuart F. Smith & Linda D. Putnam
Western Plain Region	A.E. Ext. 90-9	Stuart F. Smith & Linda D. Putnam
Central New York & Central Plain	A.E. Ext. 90-10	Wayne A. Knoblauch & Linda D. Putnam
Eastern Plateau Region	A.E. Ext. 90-11	Robert A. Milligan, Linda D. Putnam, Carl A. Crispell, Gerald A. LeClar, & William H. Gengenbach
Oneida-Mohawk Region	A.E. Ext. 90-13	Eddy L. LaDue, Mark E. Anibal & Jacqueline M. Mierek
Western Plateau Region	A.E. Ext. 90-14	George L. Casler
Northern Hudson Region	A.E. Ext. 90-15	Stuart F. Smith & Linda D. Putnam
Southeastern New York	A.E. Ext. 90-16	Stuart F. Smith & Linda D. Putnam

GROWTH AND PROGRESS ON NEW YORK DAIRY FARMS

Two hundred and nine farmers have participated in the dairy farm business summary for each of the years 1986, 1987, 1988, and 1989. Over this four year period, milk sold per farm increased by nearly 367,000 pounds or 21 percent as average herd size increased by 13 cows or 12 percent, and milk output per cow increased 1,288 pounds or eight percent.

Cow numbers, and milk output per farm and per cow, increased at relatively steady rates during this four year period although milk sold increased faster than herd size. The size of the farm labor force grew eight percent from 1986 to 1989 with one-half the increase occurring in the last year. Milk sold per worker increased 12 percent but grew at a decreasing rate over the four year period.

Crop yields were affected by a variety of climatic conditions during this four year period. The most serious were the 1988 drought and poor planting and harvesting conditions in 1989. Much of the 1988 and 1989 increases in feed and crop expenses can be attributed to below normal production of forage crop quantity and quality.

Feed costs have increased dramatically since 1986 with the largest increase occurring in 1988. Twenty-seven percent of 1988 milk receipts or $608 per cow were used to purchase dairy grains and concentrates. Feed and crop expenses per hundredweight of milk sold have increased 22 percent in four years and jumped 18 percent from 1987 to 1989. 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 four percent from 1986 to 1987 then increased 14 percent from 1987 to 1989. Total costs per hundredweight followed the same pattern. The average price received per hundredweight of milk sold increased from $12.72 to $14.56 or 14.5 percent over the total time period. The margin or difference between the total costs of producing milk and the average price received improved from $-0.93 per hundredweight in 1986 to $+0.12 per hundredweight in 1989. This is the first positive return or profit over total costs since 1979.

Capital investments per cow have increased by almost 10 percent between 1986 and 1989. Machinery and equipment investments per cow have increased six percent in 1989 over 1988 and eight percent over 1986 and 1987. Real estate investments per cow have steadily increased. Capital turnover at 2.00 years in 1989 was at its lowest and healthiest point during this four year period.

Average net farm income without appreciation increased 103 percent over the four year period with significant improvement occurring in 1987 and 1989. The increase in labor and management income per operator has been more dramatic although the pattern is similar. Rates of return on farm capital increased in 1989 and now exceed the levels achieved in 1987. The 11.1 percent return on equity capital is the highest average return achieved since 1980.

Over this period net worth has exhibited a substantial 36 percent increase from $394,638 in 1986 to $538,319 in 1989. The debt to asset ratio has improved from 0.37 in 1986 to 0.31 in 1989. Farm debt per cow was $1,968 in 1989, down 4.6 percent from 1988 and eight percent from 1986.

In 1989, these 209 farms were larger, producing more milk, more efficient, and financially stronger than in the past three 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 1986-1989
Same 209 New York Dairy Farms

Selected Factors	1986	1987	1988	1989
Size of Business				
Average number of cows	107	112	116	120
Average number of heifers	87	87	90	93
Milk sold, cwt.	17,462	18,649	19,886	21,125
Worker equivalent	3.28	3.34	3.40	3.54
Total tillable acres	318	321	331	337
Rates of Production				
Milk sold per cow, pounds	16,374	16,732	17,207	17,662
Hay DM per acre, tons	2.9	2.9	2.7	2.8
Corn silage per acre, tons	14.4	17.0	14.0	13.5
Labor Efficiency				
Cows per worker	33	33	34	34
Milk sold per worker, pounds	532,226	558,201	584,167	596,833
Cost Control				
Grain & concentrate purchased as percent of milk sales	23%	23%	27%	26%
Dairy feed & crop expense per cwt. milk	$3.94	$4.07	$4.56	$4.81
Labor & machinery costs per cow	$792	$819	$834	$903
Oper. cost of producing cwt.milk	$9.47	$9.10	$9.42	$10.39
Total cost of producing cwt.milk	$13.65	$13.14	$13.37	$14.44
Milk receipts per cwt. milk	$12.72	$12.88	$13.07	$14.56
Capital Efficiency (avg. for year)				
Farm capital per cow	$5,761	$5,883	$6,073	$6,317
Machinery & equip. per cow	$1,060	$1,060	$1,085	$1,145
Real estate per cow	$2,723	$2,771	$2,832	$2,906
Livestock investment per cow	$1,154	$1,193	$1,247	$1,313
Capital turnover, years	2.27	2.11	2.15	2.00
Profitability				
Net farm income w/o apprec.	$29,298	$43,807	$45,911	$59,401
Net farm income w/apprec.	$45,289	$71,915	$66,765	$88,218
Labor & management income per operator/manager	$6,438	$16,069	$15,758	$23,601
Rate return on:				
equity capital w/apprec.	5.0%	10.6%	8.2%	11.1%
all capital w/apprec.	6.4%	9.6%	8.2%	10.4%
all capital w/o apprec.	3.8%	5.3%	5.2%	6.5%
Financial Summary, End Year				
Farm net worth	$394,638	$442,745	$479,467	$538,319
Change in net worth w/apprec.	$23,445	$46,111	$36,849	$53,364
Debt to asset ratio	0.37	0.35	0.34	0.31
Farm debt per cow	$2,141	$2,040	$2,062	$1,968

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 1989 are presented in the following table.

Table 2. BUSINESS CHARACTERISTICS AND RESOURCES USED
409 New York Dairy Farms, 1989

No. Dairy Livestock	Cows	Heifers
Beginning of Year	103	82
End of Year	108	84
Average for Year	104	83

Type of Business	Number	Percent
Sole Proprietorship	270	66
Partnership	118	29
Corporation	28	5

Barn Type	Number	Percent
Stanchion	231	56
Freestall	150	37
Combination	28	7

Milking System	Number	Percent
Bucket & Carry	5	1
Dumping Station	27	7
Pipeline	218	53
Herringbone	143	35
Other Parlor	16	4

Milking Frequency	Number	Percent
2x/day	375	92
3x/day	29	7
Other	5	1

Business Records	Number	Percent
Account Book	170	42
Agrifax (mail-in)	62	15
ELFAC	26	6
On-Farm Computer	62	15
Other	89	22

Dairy Records	Number	Percent
D.H.I.C.	313	77
Owner Sampler	43	10
Other	20	5
None	33	8

Labor Force	Average	Percent
Operators	16.7 mo.	42
Family	4.8 mo.	12
Family unpaid	3.0 mo.	8
Hired	15.1 mo.	38
Total Months	39.6 mo.	100

	Average
Operators (total = 569)	1.39
Age	44
Education	13 yrs.
Estimated Value of Labor & Management	$28,841

	Farms Reporting	
Land Used	Number	Average
Total acres:		
Owned	409	355
Rented	364	152
Tillable acres:		
Owned	409	199
Rented	362	132
Total	409	316

There were 569 full-time operator equivalents on the 409 dairy farms for an average of 1.39 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 34.

All 409 farm businesses included in the regular dairy summary own farm real estate. Dairy farm renters are summarized separately later in this publication. However, 362 of the dairy farm owners rented an average of 132 acres of tillable land in 1989. The 409 farms averaged 316 total tillable acres per farm of which 117 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. Expansion livestock and machinery and building depreciation are nonoperating costs 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 409 farms averaged $608 per day and 90 percent of total farm accrual expenses.

Table 3. CASH AND ACCRUAL FARM EXPENSES
409 New York Dairy Farms, 1989

Expense Item	Cash Paid +	Change in Inventory or Prepaid Expense +	Change in Accounts Payable =	Accrual Expenses	Percent
Hired Labor	$ 29,126	$ -23«	$ -26	$ 29,077	13
Feed					
Dairy grain & conc.	70,812	-1,287	-116	69,409	31
Dairy roughage	2,700	-234	-156	2,310	1
Nondairy livestock	465	-7	14	472	<1
Machinery					
Mach. hire, rent/lease	2,754	0«	-24	2,730	1
Machinery repairs/parts	14,079	-71	-174	13,834	6
Auto expense (farm share)	806	0«	0	806	<1
Fuel, oil & grease	6,129	-87	-61	5,981	3
Livestock					
Replacement livestock	2,959	0«	10	2,969	1
Breeding	3,339	-35	5	3,309	1
Vet & medicine	5,531	-61	-1	5,469	2
Milk marketing	8,756	0«	5	8,761	4
Cattle lease/rent	517	0«	-13	504	<1
Other livestock expense	10,411	-17	-33	10,361	5
Crops					
Fertilizer & lime	9,367	-425	124	9,066	4
Seeds & plants	4,279	-277	-17	3,985	2
Spray, other crop exp.	3,945	-243	7	3,709	2
Real Estate					
Land/bldg./fence repair	4,990	-103	-18	4,869	2
Taxes	6,347	-25«	75	6,397	3
Rent & lease	4,494	-26«	-21	4,447	2
Other					
Insurance	4,151	-66«	-4	4,081	2
Telephone (farm share)	703	0«	-1	702	<1
Electricity (farm share)	6,299	-1«	-18	6,280	3
Interest paid	18,946	0«	83	19,029	9
Miscellaneous	3,383	-56	13	3,340	1
Total Operating	$225,288	$-3,044	$-347	$221,897	100
Expansion livestock	$2,392	$0«	$ 0	$2,392	
Machinery depreciation				$14,934	
Building depreciation				$8,676	
TOTAL ACCRUAL EXPENSES				$247,899	

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 increased an average of $26 per farm in 1989, and that increase is subtracted from cash rent to determine the correct 1989 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 $288,692 per farm. Total accrual receipts averaged $297,474 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 $4 per cow.

Table 4. CASH AND ACCRUAL FARM RECEIPTS
409 New York Dairy Farms, 1989

Receipt Item	Cash Receipts	+	Change in Inventory	+	Change in Accounts Receivable	=	Accrual Receipts	Percent
Milk sales	$257,386				$3,757		$261,144	88
Dairy cattle	17,345		$4,731		23		22,098	7
Dairy calves	4,554				-1		4,552	1
Other livestock	534		19		0		554	<1
Crops	2,046		406		-31		2,421	1
Government receipts	3,177		-15*		74		3,236	1
Custom machine work	288				8		295	<1
Gas tax refund	249				6		255	<1
Other	3,112				34		3,147	1
- Nonfarm noncash capital**			(-) 228				(-) 228	
Total	$288,692		$4,912		$3,870		$297,474	100

*Change in advanced government receipts.
**Gifts or inheritances of cattle or crops included in inventory.

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

Accrual receipts represent the value of all farm commodities produced and services actually provided by the farmer during the year. Increases in livestock inventory caused by herd growth and/or quality, are included. Decreases in inventory caused by herd reduction are deducted. Changes in inventories of crops grown are accounted for. Changes in advanced government receipts are the amount government payments received for participating in a future year's program have changed from 1988 to 1989. 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. Gifts 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
409 New York Dairy Farms, 1989

Item	Average 409 Farms	Average Top 10% Farms*
Total accrual receipts	$297,474	$932,902
+ Appreciation: Livestock	11,022	16,984
Machinery	2,802	5,294
Real Estate	11,116	27,053
Other Stock/Cert.	272	1,549
= Total including appreciation	$322,686	$983,782
- Total accrual expenses	247,899	746,621
= Net Farm Income (with appreciation)	$74,787	$237,161
Net Farm Income (without appreciation)	$49,575	$186,281

*Average of 41 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
409 New York Dairy Farms, 1989

Item	Average 409 Farms		Average Top 10% Farms	
	With Apprec.	Without Apprec.	With Apprec.	Without Apprec.
Net farm income	$74,787	$49,575	$237,161	$186,281
- Family labor unpaid @ $750 per month	2,239	2,239	750	750
= Return to Operator(s') Labor, Management, & Equity	$72,548	$47,336	$185,531	$236,411

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.

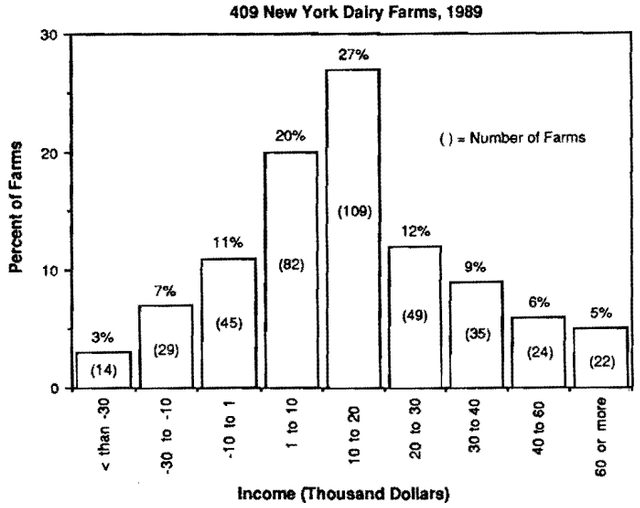
Labor and management income per operator measures the return to one full-time operator's labor and management. A full-time operator provides 12 months of labor and management.

Table 7. LABOR AND MANAGEMENT INCOME
409 New York Dairy Farms, 1989

Item	Average 409 Farms		Average Top 10% Farms
Return to operator(s') labor, management, & equity without appreciation	$47,336		$185,531
- Real interest @ 5% on $446,218 equity capital for average & $1,087,853 for the top 10%	22,311		54,393
= Labor & Management Income (1.39 operators)	$25,025	(1.70)	$131,138
Labor & Management Income per Operator	$18,004		$77,140

Labor and management income per operator averaged $18,004 on these 409 dairy farms in 1989. The range in labor and management income per operator was from less than -$40,000 to more than $70,000. Returns to labor and management were negative on 21 percent of the farms. Labor and management income per operator ranged from $0 to $19,999 on 47 percent of the farms while 32 percent showed labor and management incomes of $20,000 or more per operator.

Chart 1. DISTRIBUTION OF LABOR AND MANAGEMENT INCOMES PER OPERATOR
409 New York Dairy Farms, 1989



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
409 New York Dairy Farms, 1989

Item	Average 409 Farms	Average Top 10% Farms
Return to operators' labor, management, & equity capital with appreciation	$72,548	$236,411
- Value of operators' labor & management	28,841	46,711
= Return on equity capital with appreciation	$43,707	$189,700
+ Interest paid	$19,029	$47,405
= Return on total capital with appreciation	$62,736	$237,105
Return on equity capital without appreciation	$18,495	$138,820
Return on total capital without appreciation	$37,524	$186,225
Rate of return on average equity capital:		
with appreciation	9.8%	17.4%
without appreciation	4.1%	12.8%
Rate of return on average total capital:		
with appreciation	9.4%	14.6%
without appreciation	5.6%	11.5%

Returns Per Unit of Input

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

Table 9. RETURNS TO ALL LABOR AND MANAGEMENT
409 New York Dairy Farms, 1989

Item	Average
Labor & management income per farm	$25,025
+ Cost of hired labor	29,077
+ Value of unpaid family labor	2,239
= Total Returns to All Labor & Management	$56,341
Average worker equivalent	3.30
Returns per worker equivalent	$17,073
Returns per hour (3,000 hours/worker/year)	$5.69

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. 1989 FARM BUSINESS AND NONFARM BALANCE SHEET
409 New York Dairy Farms, 1989

Farm Assets	Jan. 1	Dec. 31	Farm Liabilities & Net Worth	Jan. 1	Dec. 31
Current			Current		
Farm cash, checking & savings	$ 6,999	$ 8,431	Accounts payable	$ 5,960	$ 5,614
Accounts rec.	20,862	24,732	Operating debt	6,558	8,011
Prepaid expenses	240	382	Short-term	2,730	2,765
Feed & supplies	50,395	53,702	Advanced Govt. Rec.	4	19
Total	$ 78,496	$ 87,247	Total	$ 15,251	$16,409
Intermediate			Intermediate		
Dairy cows:			Structured debt		
owned	$ 93,574	$104,781	1-10 years	$ 82,479	$ 85,071
leased	382	422	Financial lease		
Heifers	39,210	43,682	(cattle/mach.)	1,931	2,048
Bulls/other lvstk.	1,179	1,272	FLB & PCA stock	4,752	3,199
Mach./eq. owned	113,580	123,651	Total	$ 89,161	$ 90,318
Mach./eq. leased	1,548	1,625			
FLB & PCA stock	4,752	3,199	Long-Term		
Other stock & cert.	7,799	7,922	Structured debt		
Total	$262,025	$286,555	≥10 years	$115,739	$114,012
Long-Term			Financial lease		
Land/buildings:			(structures)	689	448
owned	$303,220	$315,785	Total	$116,428	$114,460
leased	689	448			
Total	$303,909	$316,233	Total Farm Liab.	$220,841	$221,187
Total Farm Assets	$644,430	$690,035	FARM NET WORTH	$423,589	$468,848

Nonfarm Assets*	Jan. 1	Dec. 31	Nonfarm Liabilities* & Net Worth	Jan. 1	Dec. 31
Personal cash, chkg. & savings	$ 5,697	$ 6,444	Nonfarm Liab.	$2,622	$3,312
Cash value life ins.	5,196	5,725	NONFARM NET WORTH	$69,074	$72,066
Nonfarm real estate	38,306	38,756			
Auto (personal sh.)	3,225	3,730	FARM & NONFARM*	Jan. 1	Dec. 31
Stocks & bonds	4,903	5,791	Total Assets	$716,126	$765,413
Household furn.	8,638	8,953	Total Liabilities	223,463	224,499
All other	5,732	5,979			
Total Nonfarm	$71,696	$75,378	TOTAL FARM & NON-FARM NET WORTH	$492,663	$540,914

*Average of 250 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
409 New York Dairy Farms, 1989

Item	Average 409 Farms	Average Top 10% Farms
Farm Financial Ratios:		
Percent equity	68%	69%
Debt/asset ratio: total	0.32	0.31
long-term	0.36	0.29
inter. & current	0.29	0.33
Change in Net Worth:		
Without appreciation	$20,048	$100,590
With appreciation	$45,260	$151,470
Farm Debt Analysis:		
Accts. payable as % of total debt	3%	2%
Long-term liab. as % of total debt	52%	40%
Current & int. liab. as % of tot. debt	48%	60%

Farm Debt Levels:	Per Cow	Per Tillable Acre Owned	Per Cow	Per Tillable Acre Owned
Total farm debt	$2,048	$1,111	$1,697	$1,193
Long-term debt	1,060	575	680	478
Intermediate & current debt	988	536	1,017	715

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
409 New York Dairy Farms, 1989

Item	Real Estate		Machinery/Equip.		Livestock
Value beg. of year		$303,220		$113,580	$133,964
Purchases	$16,310*		$22,939		
+ Nonfarm noncash transfer**	309		53		
- Lost capital	3,736				
- Sales	2,248		789		
- Depreciation	8,676		14,934		
= Net investment		1,959		7,269	4,749
+ Appreciation		10,606***		2,802	11,022
Value end of year		$315,785		$123,651	$149,735

*$3,417 land and $12,893 buildings and/or depreciable improvements.
**Gifts and inheritances of property transferred into the farm business from outside.
***Excludes $510 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 $1,017 indicates that on average, farms had more inflows than were accounted for by outflows.

Table 13. ANNUAL CASH FLOW STATEMENT
409 New York Dairy Farms, 1989

Item	Average 409 Farms	Average Top 10% Farms
Cash Inflows		
Beginning farm cash, checking & savings	$ 6,999	$ 16,874
Cash farm receipts	288,692	894,730
Sale of assets: Machinery	789	1,467
Real estate	2,389	2,148
Other stock & certificates	334	1,073
Money borrowed (intermediate & long-term)	29,568	81,348
Money borrowed (short-term)	2,395	9,123
Increase in operating debt	1,454	8,173
Nonfarm income	4,379	4,374
Cash from nonfarm capital used in business	2,059	417
Money borrowed - nonfarm	704	373
Total	$339,762	$1,020,100
Cash Outflows		
Cash farm expenses	$225,287	682,734
Capital purchases: Expansion livestock	2,392	17,457
Machinery	22,939	65,782
Real estate	16,310	66,336
Other stock & certificates	185	445
Principal payments (intermediate & long-term)	28,704	84,769
Principal payments (short-term)	2,360	8,597
Decrease in operating debt	0	0
Personal withdrawals & family expenditures, including nonfarm debt payments	32,137	72,507
Ending farm cash, checking & savings	8,431	20,763
Total	$338,745	$1,019,389
Imbalance (error)	$ 1,017	$ 711

CASH FLOW BUDGETING DATA
409 New York Dairy Farms, 1989

Item	Average 409 Farms Total	Average 409 Farms Per Cow	Average Top 10% Farms Total	Average Top 10% Farms Per Cow
Average number of cows	104		296	
Accrual Operating Receipts				
Milk	$261,144	$2,507	$813,825	$2,747
Dairy cattle	22,099	212	81,651	276
Dairy calves	4,553	44	13,548	46
Other livestock	553	5	1,928	6
Crops	2,421	23	1,295	4
Miscellaneous receipts	6,933	67	20,655	70
Total	$297,702	$2,858	$932,902	$3,149
Accrual Operating Expenses				
Hired labor	$ 29,077	$ 279	$125,731	$ 424
Dairy grain & concentrate	69,409	666	211,061	712
Dairy roughage	2,310	22	6,098	21
Nondairy feed	472	5	273	1
Machinery hire/rent/lease	2,730	26	8,921	30
Machinery repairs/parts & auto	14,641	141	37,601	127
Fuel, oil & grease	5,981	57	14,655	49
Replacement livestock	2,969	29	7,504	25
Breeding	3,309	32	8,618	29
Vet & medicine	5,469	53	19,138	65
Milk marketing	8,761	84	19,402	65
Cattle lease	504	5	2,476	8
Other livestock expense	10,361	99	27,127	91
Fertilizer & lime	9,066	87	25,245	85
Seeds & plants	3,985	38	12,078	41
Spray/other crop expense	3,709	36	11,866	40
Land, building, fence repair	4,869	47	14,364	48
Taxes	6,397	61	13,687	46
Real estate rent/lease	4,447	43	14,461	49
Insurance	4,081	39	8,820	30
Utilities	6,982	67	16,672	56
Miscellaneous	3,340	32	10,037	34
Total Less Interest Paid	$202,868	$1,948	$615,837	$2,078
Net Accrual Operating Income (without interest paid)	$94,834	$910	$317,065	$1,070
- Change in livestock/crop inv.	4,912	47	23,241	78
- Change in accounts rec.	3,870	37	14,930	50
+ Change in feed/supply inv.	-3,044	-29	-18,840	-64
+ Change in accounts payable*	-429	-4	-1,184	-4
NET CASH FLOW	$82,579	$793	$258,870	$ 874
- Net personal withdrawals & family expenditures	27,054	260	67,760	229
Available for Farm Debt Payments & Investments	$55,525	$533	$191,110	$ 645
- Farm Debt Payments	49,628	476	137,310	463
Avail. for Farm Investments	$ 5,897	$ 57	$ 53,800	$ 182
- Capital Purchases: cattle, machinery & improvements	41,826	402	150,020	506
Capital Deficit	$-35,929	$-345	$-96,220	$ -324

*Excludes change in interest account payable.

Repayment Analysis

The second step in cash flow planning is to compare and evaluate debt payments planned and made last year, and estimate the payments required in the current year. It is helpful to compare and evaluate a farm's repayment position by using debt payments per unit of production and receipt/debt payment ratios. The data presented below are for the 332 farms, and the top 10 percent of these farms, that completed Dairy Farm Business Summaries for both 1988 and 1989.

Table 15. FARM DEBT PAYMENTS PLANNED
New York Dairy Farms, 1989

	Same 332 Dairy Farms			Average Top 10% Farms		
	1989 Payments		Planned	1989 Payments		Planned
Debt Payments	Planned	Made	1990	Planned	Made	1990
Long-term	$15,832	$17,561	$15,721	$ 31,972	$ 38,320	$ 28,457
Intermediate-term	24,104	30,584	26,982	65,072	97,142	82,660
Short-term	2,657	2,626	1,792	9,812	7,758	6,332
Operating (net reduction)	2,489	0	1,882	17,075	0	7,907
Accounts payable (net reduction)	761	683	897	1,155	0	2,277
Total	$45,843	$51,453	$47,275	$125,086	$143,220	$127,633
Per cow	$427	$479		$411	$471	
Per cwt. 1989 milk	$2.45	$2.75		$2.17	$2.48	
Percent of total 1989 receipts	15%	17%		13%	15%	
Percent of 1989 milk receipts	17%	19%		15%	17%	

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, 1989

Item	Same 332 Dairy Farms	Average Top 10% Farms
Cash farm receipts	$303,002	$924,560
- Cash farm expenses	234,438	700,658
+ Interest paid	19,351	49,969
- Net personal withdrawals from farm**	28,697	69,575
(A) = Amount Available for Debt Service	$ 59,218	$204,296
(B) = Debt Payments Planned for 1989	$ 45,843	$125,086
(A ÷ B) = Cash Flow Coverage Ratio for 1989	1.29	1.63

**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
409 New York Dairy Farms, 1989

Item	Average 409 Farms			Average Top 10% Farms		
Land	**Owned**	**Rented**	**Total**	**Owned**	**Rented**	**Total**
Tillable	199	117	316	445	253	698
Nontillable	52	10	62	64	7	71
Other nontillable	104	8	112	196	11	207
Total	355	135	490	705	271	976
Crop Yields	**Farms**	**Acres**	**Prod/Acre**	**Farms**	**Acres**	**Prod/Acre**
Hay crop	406	165	2.7 tn DM	41	276	3.0 tn DM
Corn silage	375	88	13.4 tn	40	264	13.2 tn
			4.5 tn DM			4.4 tn DM
Other forage	45	23	1.8 tn DM	7	38	2.5 tn DM
Total forage	409	247	3.2 tn DM	41	540	3.7 tn DM
Corn grain	188	69	100.9 bu	28	134	107.0 bu
Oats	80	32	54.2 bu	7	41	59.5 bu
Wheat	30	39	42.6 bu	9	57	50.3 bu
Other crops	51	27		10	33	
Tillable pasture	117	30		10	45	
Idle	166	38		24	49	
Total Tillable Acres	409	316		41	698	

Crop acres and yields compiled for the average represent only the number of farms reporting each crop. All but three of the 409 farms produced hay or hay crop silage in 1989. Ninety-two percent produced corn silage, 46 percent grew and harvested corn grain, and 20 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
409 New York Dairy Farms, 1989

Item	Average 409 Farms	Average Top 10% Farms
Total tillable acres per cow	3.03	2.36
Total forage acres per cow	2.37	1.82
Harvested forage dry matter, tons per cow	7.68	6.67

In the fifth year of collecting information on individual crop production costs, 187 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 409 farms and the expenses for individual crops are for the 187 farms which submitted data.

Table 19. CROP RELATED ACCRUAL EXPENSES
New York Dairy Farms, 1989

Expense	Average 409 Farms Total Per Tillable Acre	Average 187 Farms Reporting Individual Crop Costs: Hay Crop Per Acre	Hay Crop Per Ton DM	All Corn Per Acre	Corn Silage Per Ton DM	Corn Grain Per Dry Shell Bu.
Fertilizer & lime	$28.72	$20.14	$ 7.64	$47.86	$10.73	$0.47
Seeds & plants	12.62	7.64	2.90	23.09	5.18	0.23
Spray & other crop expense	11.75	4.88	1.85	25.47	5.71	0.25
Total	$53.09	$32.66	$12.39	$96.42	$21.62	$0.95
Average Top 10% Farms:		Average Top 16 Farms Reporting Individual Crop Costs				
Fertilizer & lime	$36.12	$23.54	$ 7.75	$44.01	$10.22	$0.40
Seeds & plants	17.28	12.09	3.98	24.01	5.58	0.22
Spray & other crop expense	16.98	9.98	3.29	28.53	6.62	0.26
Total	$70.38	$45.61	$15.02	$96.55	$22.42	$0.88

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
409 New York Dairy Farms, 1989

Machinery Expense Item	Average 409 Farms Total Expenses	Average 409 Farms Per Til. Acre	Average Top 10% Farms Total Expenses	Average Top 10% Farms Per Til. Acre
Fuel, oil & grease	$ 5,982	$ 18.95	$ 14,656	$ 20.97
Machinery repairs & parts	13,835	43.83	36,186	51.77
Machine hire, rent & lease	2,731	8.65	8,921	12.76
Auto expense (farm share)	806	2.55	1,415	2.02
Interest (5%)	5,931	18.79	12,216	17.48
Depreciation	14,934	47.31	36,442	52.13
Total	$44,219	$140.07	$109,836	$157.13

Table 21. CROP RELATED ACCRUAL EXPENSES BY HAY CROP PRODUCTION PER ACRE
187 New York Dairy Farms, 1989

Item	Tons of Hay Crop Dry Matter Per Acre				
	<2.0	2.0-2.4	2.5-2.9	3.0-3.4	≥3.5
Hay crop, tons DM/acre	1.6	2.2	2.7	3.2	4.1
Farms reporting crop expense breakdowns	38	48	39	32	30
Average number hay crop acres for farms reporting	162	165	146	131	160
Accrual Crop Expense Per Acre of Hay Crop:					
Fertilizer & lime	$14.76	$21.50	$18.33	$25.08	$22.65
Seeds & plants	6.41	7.34	8.33	8.25	8.36
Spray & other crop expense	2.14	3.20	7.08	7.27	6.48
Total	$23.31	$32.04	$33.74	$40.60	$37.49
Accrual Crop Expense Per Ton DM of Hay Crop:					
Fertilizer & lime	$ 8.56	$ 9.75	$ 6.74	$ 7.88	$5.74
Seeds & plants	3.72	3.33	3.06	2.59	2.12
Spray & other crop expense	1.24	1.45	2.60	2.29	1.64
Total	$13.52	$14.53	$12.40	$12.76	$9.50

Table 22. CROP RELATED ACCRUAL EXPENSES BY CORN PRODUCTION PER ACRE
182 New York Dairy Farms, 1989

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	9.9	14.9	19.5	73.4	99.9	130.7
Farms reporting crop expense breakdowns	82	70	23	33	33	28
Average number corn acres for farms reporting	115	117	125	121	138	160
Accrual Crop Exp./Acre of Corn						
Fertilizer & lime	$46.42	$ 50.28	$ 46.15	$47.10	$42.55	$ 48.18
Seeds & plants	22.70	22.82	24.98	25.42	22.66	24.86
Spray & other crop expense	22.44	27.25	30.49	26.40	24.07	28.32
Total	$91.56	$100.35	$101.62	$98.92	$89.28	$101.36
Accrual Crop Expense Per:*	Ton DM of Corn Silage			Dry Shell Bushel of Corn Grain		
Fertilizer & lime	$13.81	$ 9.55	$ 7.17	$0.63	$0.43	$0.37
Seeds & plants	6.76	4.33	3.88	0.34	0.23	0.19
Spray & other crop expense	6.68	5.17	4.74	0.35	0.24	0.22
Total	$27.25	$19.05	$15.79	$1.32	$0.90	$0.78

*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. Hay crop expenses per ton of dry matter remained fairly constant except for farms reporting yields greater than 3.5 tons of dry matter per acre. The lower dry matter costs on this group of 30 farms can be attributed to significantly higher yields with controlled expenses per acre.

Dairy Program Analysis

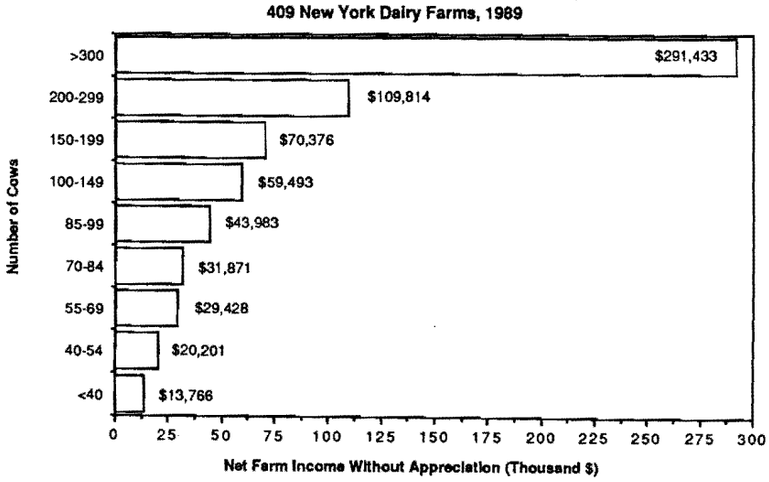
An analysis of the dairy enterprise can be the most important step in evaluating the strengths and weaknesses of the dairy farm business. Changes in dairy herd size and market values are identified in the table below. The change in inventory value without appreciation is attributed to physical changes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

Table 23. DAIRY HERD INVENTORY
409 New York Dairy Farms, 1989

	Dairy Cows		Heifers					
			Bred		Open		Calves	
Item	No.	Value	No.	Value	No.	Value	No.	Value
Beg. year (owned)	103	$ 93,574	31	$22,114	27	$11,703	24	$5,394
+ Change w/o apprec.		3,549		536		393		251
+ Appreciation		7,658		1,692		1,046		553
End year (owned)	106	$104,781	32	$24,342	27	$13,142	25	$6,198
End incl. leased	108							
Average number	104		83	(all age groups)				
Average Top 10% Farms:								
Beg. year (owned)	279	$240,960	93	$58,807	65	$26,344	59	$13,344
+ Change w/o apprec.		23,461		6,096		-1,946		1,457
+ Appreciation		11,464		3,031		1,323		988
End year (owned)	306	$275,885	107	$67,934	56	$25,721	65	$15,789
End incl. leased	313							
Average number	296		226	(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 as shown in Chart 2. Net farm income increased 2,017 percent while labor and management income per operator jumped $147,657 as herd size increased from less than 40 to over 300 cows per farm.

Chart 2. NET FARM INCOME (WITHOUT APPRECIATION) BY HERD SIZE
409 New York Dairy Farms, 1989



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 24. MILK PRODUCTION
409 New York Dairy Farms, 1989

Item	Average 409 Farms	Average Top 10% Farms
Total milk sold, lbs.	1,797,462	5,579,216
Milk sold per cow, lbs.	17,259	18,832
Average milk plant test, percent butterfat	3.67	3.71

Farms with higher rates of production tend to have higher profits. In 1989, the farms that sold more than 17,000 pounds of milk per cow had above average profit margins.

Table 25. MILK SOLD PER COW AND FARM INCOME MEASURES
409 New York Dairy Farms, 1989

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	21	71	$9,209	$130	$-6,909
12,000 to 13,999	35	71	21,341	301	1,740
14,000 to 14,999	34	81	24,849	307	4,722
15,000 to 15,999	52	88	35,696	406	11,838
16,000 to 16,999	77	100	42,021	420	14,186
17,000 to 17,999	71	116	59,139	510	23,354
18,000 to 19,999	81	105	54,282	517	18,993
20,000 & over	38	181	126,421	698	60,261

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

Table 26. ACCRUAL RECEIPTS FROM DAIRY AND COST OF PRODUCING MILK
409 New York Dairy Farms, 1989

Item	Average 409 Farms			Average Top 10% Farms		
	Total	Per Cow	Per Cwt.	Total	Per Cow	Per Cwt.
Accrual Costs of Producing Milk						
Operating costs	$187,959	$1,805	$10.46	$561,620	$1,895	$10.07
Total costs without op(s') labor, mgmt. & capital	$213,808	$2,053	$11.89	$628,294	$2,120	$11.26
Total Costs	$264,960	$2,544	$14.74	$729,398	$2,462	$13.07
Accrual Receipts from Milk	$261,144	$2,507	$14.53	$813,825	$2,747	$14.59

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 409 dairy farms averaged $14.74 per hundredweight, $0.21 more than the average price received for milk sold from these farms during 1989. In 1988 the total cost of producing milk averaged $13.67 on 406 New York dairy farms, $0.64 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 $2.85 per hundredweight in 1989. The actual estimated returns averaged $2.64 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 $16.38 for herds with less than 85 cows, and $14.32 for those with 85 cows or more, for a difference of $2.06 per hundredweight. Farms selling less than 17,000 pounds of milk per cow had an average total cost of production of $16.67 while those selling 17,000 pounds and over averaged approximately $14.12 for a difference of $2.55 per hundredweight.

Table 27. FARM COST OF PRODUCING MILK BY HERD SIZE AND MILK SOLD PER COW
409 New York Dairy Farms, 1989

By Herd Size				By Milk Sold Per Cow			
	Cost per Hundredweight				Cost per Hundredweight		
Number of Cows	Operating	Excluding Op.s Labor, Mgt. & Cap.	Total	Pounds Milk Sold Per Cow	Operating	Excluding Op.s Labor, Mgt. & Cap.	Total
Under 40	$10.18	$12.17	$17.64	Under 12,000	$12.77	$14.78	$20.14
40 to 54	10.23	12.04	16.30	12,000 to 13,999	10.76	12.67	16.86
55 to 69	10.12	11.89	16.04	14,000 to 14,999	11.16	12.78	16.26
70 to 84	10.39	12.03	15.52	15,000 to 15,999	10.40	11.86	15.15
85 to 99	10.35	12.01	15.25	16,000 to 16,999	10.59	12.05	14.96
100 to 149	10.32	11.67	14.61	17,000 to 17,999	10.37	11.75	14.42
150 to 199	10.94	12.32	14.90	18,000 to 19,999	10.45	11.85	14.75
200 to 299	10.70	11.88	13.81	20,000 & over	9.94	11.24	13.18
300 & over	10.56	11.69	13.03				

Costs of production are divided into 10 categories and presented for the 409 New York dairy farms and the top 10 percent farms (by net farm income, without appreciation) in Table 28 on page 23. Accrual non-milk receipts are deducted from accrual expenses on the assumption they were produced at cost. A $406 increase in crop inventories and government receipts averaging $3,236 per farm are included as a credit or negative cost of production under feed and crop expenses. Government receipts were primarily crop related in 1989.

Table 28. TOTAL COST OF PRODUCING MILK BASED ON WHOLE FARM DATA
409 New York Dairy Farms and Top 10 Percent of Farms, 1989

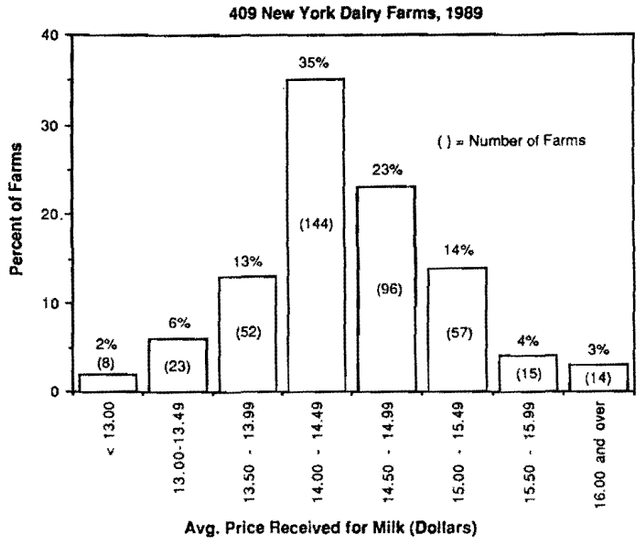
Cost Item	Average of 409 New York Dairy Farms		Average of Top 10% Farms	
	Total	Cost/Cwt.	Total	Cost/Cwt.
		(17,975 cwt.)		(55,792 cwt.)
Feed & Crop Expense				
Dairy grain & concentrate	$ 69,409		$211,061	
Dairy roughage	2,310		6,098	
Nondairy feed	472		273	
Fertilizer & lime	9,066		25,245	
All other crop expenses	7,694		23,944	
- Crop sales & gov't receipts	5,657		9,711	
TOTAL	$ 83,294	$ 4.63	$256,910	$ 4.61
Labor Costs				
Value of operator's labor & management & family labor	$ 31,080		$ 47,461	
Hired labor	29,077		125,731	
TOTAL	$ 60,157	$ 3.35	$173,192	$ 3.10
Machinery Costs				
Depreciation	$ 14,934		$ 36,442	
Machine repairs, hire & auto	17,370		46,523	
Fuel, oil & grease	5,981		14,655	
- Gas tax ref & custom work	550		1,078	
TOTAL	$ 37,735	$ 2.10	$ 96,542	$ 1.73
Livestock Expenses				
Breeding fees, vet & medicine	$ 8,778		$ 27,756	
Other livestock expense	10,361		27,127	
TOTAL	$ 19,139	$ 1.06	$ 54,883	$ 0.98
Milk Marketing	$ 8,761	$ 0.49	$ 19,402	$ 0.35
Livestock Ownership				
Purchased livestock	$ 5,361		$ 24,961	
Cattle lease	504		2,476	
- Dairy cattle & lvstk. sales	27,204*		97,127	
TOTAL	$-21,339	$-1.19	$-69,690	$-1.25
Real Estate Costs				
Land, building & fence repair	$ 4,869		$ 14,364	
Taxes	6,397		13,687	
Rent/lease	4,447		14,461	
Building depreciation	8,676		29,482	
TOTAL	$ 24,389	$ 1.36	$ 71,994	$ 1.29
Interest Expense				
Interest paid	$ 19,029		$ 47,405	
Interest on equity @ 5%	22,311		54,393	
TOTAL	$ 41,340	$ 2.30	$101,798	$ 1.82
Miscellaneous				
Telephone & electricity	$ 6,982		$ 16,671	
Miscellaneous (incl. insurance)	7,421		18,857	
- Miscellaneous income	2,919		11,161	
TOTAL	$ 11,484	$ 0.64	$ 24,367	$ 0.44
TOTAL COST OF PRODUCING MILK	$264,960	$14.74	$729,398	$13.07
- Operator's labor, management & capital	51,152	2.85	101,104	1.81
TOTAL COST EXCLUDING OPERATOR'S LABOR, MANAGEMENT & CAPITAL	$213,808	$11.89	$628,294	$11.26

*Includes $228 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 409 farms was $14.53 but there was considerable variation among the individual farms. The variation in average price received and the distribution of farms around the mean is shown below.

Chart 3. VARIATION IN AVERAGE MILK PRICE

409 New York Dairy Farms, 1989



Fifty-eight percent of the farms received from $14.00 to $14.99 per hundredweight of milk sold. Twenty-one percent of the farms received $15.00 or more per hundredweight and 21 percent received less than $14.00 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 29. DAIRY RELATED ACCRUAL EXPENSES
409 New York Dairy Farms, 1989

Item	Average 409 Farms		Average Top 10% Farms	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.
Purc. dairy grain & conc.	$666	$3.86	$712	$3.78
Purchased dairy roughage	22	0.13	21	0.11
Total Purchased Dairy Feed	$688	$3.99	$733	$3.89
Purchased grain & conc. as % of milk receipts	27%		26%	
Purchased feed & crop exp.	$850	$4.92	$899	$4.77
Purchased feed & crop exp. as % of milk receipts	34%		33%	
Breeding	$32	$0.18	$29	$0.15
Veterinary & medicine	53	0.30	65	0.34
Milk marketing	84	0.49	65	0.35
Cattle lease	5	0.03	8	0.04
Other livestock expense	99	0.58	92	0.49

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 0.80 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 30. PURCHASED FEED AND CROP EXPENSE PER HUNDREDWEIGHT OF MILK AND FARM INCOME MEASURES
409 New York Dairy Farms, 1989

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
$6.50 or more	34	76	7.5	14,870	$17,867	$-1,151
6.00 to 6.49	28	105	7.2	16,010	31,875	5,934
5.50 to 5.99	49	123	8.0	17,222	51,384	17,383
5.00 to 5.49	69	108	7.6	17,182	54,851	22,947
4.50 to 4.99	89	123	7.4	18,262	62,373	26,162
4.00 to 4.49	62	102	8.2	17,649	51,334	18,123
3.50 to 3.99	46	77	7.6	16,506	40,936	14,014
Less than 3.50	32	89	8.2	17,216	58,040	22,531

On the average, farms with purchased feed and crop expenses exceeding $6.00 per hundredweight of milk sold reported well below average farm profits. Milk output per cow was also well below average on these two groups of farms. Reducing feed and crop expenses does not necessarily lead to higher profits particularly when milk output per cow falls below average.

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 31. CAPITAL EFFICIENCY
409 New York Dairy Farms, 1989

Item (Average for Year)	Per Worker	Per Cow	Per Tillable Acre	Per Tillable Acre Owned
Farm capital	$202,159	$6,407	$2,114	$3,353
Real estate		$2,977		$1,558
Machinery & equipment	$36,419	$1,154	$381	
Capital turnover, years		2.07		
Average Top 10% Farms:				
Farm capital	$221,830	$5,464	$2,316	$3,638
Real estate		$2,377		$1,583
Machinery & equipment	$34,560	$851	$361	
Capital turnover, years		1.65		

Capital turnover measures 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 including appreciation. The relationship capital turnover has to farm profitability 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 32. CAPITAL TURNOVER AND LABOR AND MANAGEMENT INCOME
409 New York Dairy Farms, 1989

Capital Turnover Rate - Years	No. of Farms	No. of Cows	Farm Capital (average for year) Per Cow	Farm Capital (average for year) Per Worker	Labor & Mgt. Inc. Per Operator	Net Farm Income (w/o apprec.)
Less than 1.5	28	243	$ 4,457	$175,825	$79,078	$149,645
1.5 to 1.99	122	118	5,562	183,087	22,969	55,643
2.0 to 2.49	140	90	7,008	210,338	14,990	44,240
2.5 to 2.99	70	79	7,946	220,443	8,178	36,474
3.0 to 3.49	20	77	8,278	236,187	-3,583	19,062
3.5 & over	29	58	10,292	263,841	-15,148	5,854

The 41 farms with the highest net farm incomes (without appreciation) were considerably above the average of all 409 farms in two measures of labor efficiency. The top 10 percent sold 40 percent more milk per worker than the average of all farms.

Table 33. LABOR EFFICIENCY
409 New York Dairy Farms, 1989

Labor Efficiency	Average 409 Farms Total	Average 409 Farms Per Worker	Average Top 10% Farms Total	Average Top 10% Farms Per Worker
Cows, average number	104	32	296	41
Milk sold, pounds	1,797,462	544,598	5,579,216	764,389
Tillable acres	316	96	699	96

The labor force averaged 3.30 full-time worker equivalents per farm. Forty-two percent of the labor was supplied by the farm operator/managers. There were two operators on 161 farms, three on 32 farms, and five 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 $24 per cow less on the 41 farms in the top decile.

Table 34. LABOR FORCE INVENTORY AND COST ANALYSIS
409 New York Dairy Farms, 1989

Labor Force	Months	Age	Years of Educ.	Value of Labor & Mgmt.
Operator number 1	11.66	46	13	$20,782
Operator number 2	4.11	39	13	6,616
Operator number 3	0.82	37	13	1,272
Operator number 4	0.12	37	13	171
Family paid	4.77			Total $28,841
Family unpaid	2.99			
Hired	15.14			
Total	39.61	÷ 12 = 3.30 Worker Equivalent		
		1.39 Operator/Manager Equiv.		
Average Top 10% Farms:				
Total	87.59	÷ 12 = 7.30 Worker Equivalent		
Operators'	20.37	÷ 12 = 1.70 Operator/Manager Equiv.		

	Average 409 Farms			Average Top 10% Farms		
Labor Costs	Total	Per Cow	Per Til. Acre	Total	Per Cow	Per Til. Acre
Value op.s' lab.($1,050/mo)	$17,539	$168	$ 55.56	$ 21,389	$ 72	$ 30.60
Family unpd. ($750/mo.)	2,239	21	7.09	750	3	1.07
Hired	29,078	279	92.11	125,731	424	179.87
Total Labor	$48,856	$469	$154.76	$147,870	$499	$211.54
Machinery Cost	44,219	425	140.07	109,836	371	157.13
Total Labor & Mach.	$93,075	$894	$294.84	$257,706	$870	$368.67

The relationship of labor efficiency to net farm income is very positive on the 409 farms. The higher outputs of milk sold per worker are partially attributable to more and higher producing cows.

Table 35. MILK SOLD PER WORKER AND NET FARM INCOME
409 New York Dairy Farms, 1989

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	42	47	13,858	$ 13,907	$-1,611
300,000 to 399,999	74	64	15,376	27,541	6,655
400,000 to 499,999	98	78	16,460	32,038	7,157
500,000 to 599,999	87	98	17,411	49,741	18,622
600,000 to 699,999	58	141	17,702	66,526	27,237
700,000 & over	50	231	18,717	126,573	61,780

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 36. MISCELLANEOUS COST CONTROL MEASURES
409 New York Dairy Farms, 1989

Item	Average 409 Farms	Average Top 10% Farms
Livestock		
Breeding fees per cow	$32	$29
Veterinary & medicine per cow	$53	$65
Other livestock expense per cow	$99	$92
Milk marketing per cow	$84	$65
Milk marketing per hundredweight milk	$0.49	$0.35
Real Estate		
Land, building, & fence repair per cow	$47	$48
Taxes per cow	$61	$46
Taxes per $1,000 year-end real estate value	$20	$19
Rent paid per cow	$43	$49
Rent paid per acre rented	$33	$53
Total real estate expense per cow	$151	$143
Capital Cost		
Interest paid per cow	$183	$160
Interest on equity per cow	$215	$184
Interest paid as percent of average debt	8.6%	8.9%
Machinery depreciation as percent of beginning inventory plus purchases	11%	12%
Total depreciation per cow	$227	$222
Fixed & Variable Costs*		
Total fixed costs per cow	$836	$742
Total variable costs per cow	$1,783	$1,964
Variable costs per hundredweight milk sold	$10.32	$10.43

*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 11 percent below the 409 farm average. This results from more intensive use and better management of the resources associated with fixed costs. Variable costs were 11 cents higher per hundredweight of milk sold on the top farms.

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 409 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 37. FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
409 New York Dairy Farms, 1989

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
8.1	319	5,936,217	20,998	4.4	21	48	837,710
4.6	151	2,631,025	19,213	3.5	17	39	673,111
3.8	120	2,039,688	18,261	3.1	16	36	607,303
3.3	99	1,686,207	17,610	2.9	15	33	558,972
2.9	83	1,385,769	17,083	2.7	14	30	511,780
2.6	71	1,178,752	16,564	2.5	13	28	460,467
2.3	62	999,365	16,031	2.2	12	26	421,664
2.1	55	867,115	15,228	2.0	11	24	385,456
1.9	46	720,368	14,128	1.8	9	21	335,529
1.4	34	498,429	11,572	1.3	6	16	235,225

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$306	14%	$240	$ 609	$ 467	$3.16
434	19	310	720	601	3.81
509	22	353	781	675	4.25
566	24	386	828	745	4.52
621	26	420	871	796	4.74
678	28	453	921	849	4.98
721	30	480	972	907	5.24
771	31	519	1,047	965	5.58
840	34	579	1,125	1,030	6.01
975	40	693	1,299	1,177	7.18

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 37 (continued) FARM BUSINESS CHART FOR FARM MANAGEMENT COOPERATORS
409 New York Dairy Farms, 1989

Milk Receipts Per Cow	Milk Receipts Per Cwt.	Oper. Cost Milk Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cow	Total Cost Production Per Cwt.
$3,073	$15.99	$1,044	$ 6.90	$1,898	$12.35
2,805	15.13	1,329	8.42	2,153	13.49
2,662	14.86	1,453	9.10	2,287	14.01
2,560	14.65	1,590	9.67	2,411	14.46
2,463	14.49	1,688	10.11	2,518	14.92
2,376	14.35	1,768	10.58	2,633	15.41
2,289	14.21	1,868	11.05	2,727	15.88
2,172	14.07	1,977	11.55	2,838	16.81
2,041	13.87	2,105	12.24	2,978	18.05
1,696	13.27	2,364	13.98	3,378	21.26

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
$248,067	$186,279	$246,604	$185,529	$133,487	$105,965
116,937	81,652	115,693	79,586	51,295	35,165
91,414	60,780	88,765	58,912	34,622	25,238
73,523	48,987	71,909	46,653	26,501	19,038
61,475	39,152	58,789	36,992	19,566	15,093
51,477	31,888	49,557	29,804	14,172	11,283
42,996	25,477	40,684	23,070	8,840	7,232
33,929	18,881	31,331	16,245	3,043	2,279
24,761	11,170	22,618	8,857	-6,749	-5,599
3,831	-7,633	31	-11,442	-33,477	-27,966

Farm Business Charts for farms with freestall barns and 120 cows or less and more than 120 cows, and farms with conventional barns with 60 cows or less and more than 60 cows are discussed in the supplemental section on pages 45-48.

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 38. A FARM FINANCE CHECKLIST
409 New York Dairy Farms, 1989

	Average 409 New York Farms	Average Top 10% Farms*
How farm assets are being used (average for the year):		
Total assets (capital) per cow	$6,407	$5,464
Farm assets in livestock	21%	23%
Farm assets in farm real estate	46%	43%
Farm assets in machinery	18%	16%
Measures of debt capacity & debt structure:		
Equity in the business	68%	69%
Farm debt per cow	$2,048	$1,697
Long term debt/asset ratio**	0.36	0.29
Intermediate & current term debt/asset ratio**	0.29	0.33
Intermediate & current term debt as % of total	48%	60%
Debt repayment ability:***		
Cash flow coverage ratio	1.29	1.63
Debt payments made per cow	$479	$471
Debt payments made as % of milk receipts	19%	17%

Indicators of annual financial progress:	Amount	Percent	Amount	Percent
Annual change in farm assets	+$45,606	+7.1%	+$151,134	+9.8%
Annual change in farm debts	+$345	+0.2%	-$336	-0.06%
Annual change in farm net worth	+$45,260	+10.7%	+$151,470	+15.0%

*Forty-one farms with highest net farm incomes (without appreciation).
**Long or intermediate and current term debt divided by long or intermediate and current term assets.
***Average of 332 farms (35 farms for top 10 percent) that participated in Summary Program both in 1988 and 1989.

The most profitable farms carried $351 less debt per cow, had a greater ability to make 1989 debt payments, and equity in their business was one percent more than that of the average.

Average farm assets grew faster than inflation during 1989 and although there was a small increase in farm debts, average net farm worth increased more than 10 percent.

Financial Analysis Chart

The farm financial analysis chart is designed just like the Farm Business Chart on pages 29-30 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 39. FINANCIAL ANALYSIS CHART
409 New York Dairy Farms, 1989

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
$ 53	$942	7.00	2%	$ 129
180	762	2.25	7	682
254	663	1.75	10	1,156
333	580	1.49	13	1,542
389	514	1.21	16	1,863
440	460	1.07	18	2,212
487	399	0.93	20	2,643
549	327	0.77	23	3,051
631	244	0.55	28	3,541
889	-50	-0.27	39	4,655

Solvency				Profitability	
		Debt/Asset Ratio		Percent Rate of Return with appreciation on:	
Leverage Ratio*	Percent Equity	Current & Intermediate	Long Term	Equity	Investment**
0.02	98	0.01	0.00	30	19
0.12	89	0.05	0.00	17	14
0.22	83	0.10	0.08	13	12
0.32	77	0.17	0.20	11	10
0.43	71	0.22	0.29	9	9
0.54	66	0.27	0.39	7	7
0.67	61	0.33	0.51	5	6
0.86	54	0.39	0.60	3	5
1.25	46	0.49	0.73	0	3
2.79	32	0.74	1.05	-14	-2

Efficiency (Capital)				
Capital Turnover (years)	Real Estate Investment Per Cow	Machinery Investment Per Cow	Total Farm Assets Per Cow	Change in Net Worth w/Appreciation
1.40	$1,420	$ 563	$ 4,248	$184,415
1.69	1,973	759	5,080	77,982
1.83	2,297	906	5,571	55,765
1.96	2,570	1,029	5,916	44,425
2.10	2,837	1,138	6,287	36,412
2.26	3,081	1,255	6,653	28,486
2.41	3,445	1,391	7,224	21,656
2.59	3,940	1,567	7,810	15,973
2.90	4,646	1,786	8,820	9,520
4.19	7,175	2,505	11,461	-14,836

*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 by milking frequency, 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.

Comparison of Farms by Milking Frequency: Selected business and cost of milk production factors from farms milking three times per day (3X) in 1988 and 1989 are compared with farms milking twice per day (2X). Farmers milking 3X were milking three times as many cows and selling 3.7 times as much milk as the 2X dairy farmers in 1989. The operating costs of producing milk were somewhat higher on the 3X farms in 1988 and 4 cents per hundredweight lower in 1989. Total costs per hundredweight were substantially lower on 3X farms because the costs of using the operator's labor, management, and capital were spread out over much larger production. The higher returns and profits achieved by the 3X dairy farmers cannot all be attributed to milking frequency. Comparisons of herd size, crop production, cows per worker, capital per cow, and machinery costs per cow indicate there are other important management differences contributing to higher profits.

Herd Size Comparisons: A detailed comparison of profitability, financial situation, and business analysis factors across herd sizes is contained in Tables 41 through 43. As herd size increases, the average profitability also increases (Table 41). Net farm income without appreciation was $291,433 per farm for the 300 or more herd size group and $13,766 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 42). However, farm net worth increases substantially as herd size increases. The average net worth for all size farms increased during 1989.

Crop yields generally increased as herd size increased, but fertilizer and lime expenses, and machinery cost per tillable acre also increased (Table 43). Milk sold per cow generally increased as herd size increased, ranging from 15,507 pounds on the farms with less than 40 cows to 19,250 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 18 at the lowest herd size category up to 44 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 44 on page 44 shows the average values for the resulting four groups of dairy farms. Within each housing type, the larger herd size generally has the higher 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 45-48) 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 49). Farms with other parlors were larger and had the greatest profitability.

Comparison of Dairy Farm Business Data by Region: Average farm business summary data from four areas or regions of the State are compared in Tables 50 and 51. The largest average farm size, highest average rates of production, and highest average farm profits came from Region 2.

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 1980 through 1989 are presented in Tables 52 and 53. 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 53. 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 409 dairy farms, 238 dairy farms selling less than 17,259 pounds of milk per cow, and 171 dairy farms selling 17,259 pounds per cow and more in Table 54 on page 54. Total operating expenses averaged 20 percent higher per cow but 54 cents per hundredweight lower on the more productive farms.

Table 55 on page 55 provides the same list of average accrual receipts and expenses for all 409 dairy farms plus a two group herd size comparison. Farms with 100 cows or more had total operating expenses that averaged nine percent higher per cow and 23 cents more per hundredweight of milk than the farms with less than 100 cows. However, accrual receipts averaged 12 cents higher per hundredweight on the larger farms.

Comparisons by Business Organization: A comparison of profitability, business analysis factors, and financial situation by business organization is contained in Table 56. 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.

Other Comparisons: Dairy-renter farms were smaller than the 409 owner-operated farms, and were less profitable than the average specialized dairy farm (Table 57). A.E. Ext. 90-19 contains detailed information on dairy-renters.

Data for the top 10 percent of farms by net farm income without appreciation is presented in Table 58. Summary data for the 409 specialized dairy farms is presented for the farm in Table 59.

Table 40. SELECTED BUSINESS FACTORS BY MILKING FREQUENCY
1988 and 1989

Item	2x/Day Milking 1988	2x/Day Milking 1989	3x/Day Milking 1988	3x/Day Milking 1989
Number of farms	389	375	22	29
Business Size & Production				
Number of cows	93	91	253	285
Number of heifers	74	73	199	220
Milk sold, lbs.	1,521,524	1,506,933	4,927,133	5,629,524
Milk sold/cow, lbs.	16,409	16,634	19,478	19,743
Milk plant test, % BF	3.75%	3.67%	3.62%	3.67%
Tillable acres, total	287	293	546	628
Hay crop, tons DM/acre	2.6	2.6	3.0	3.0
Corn silage, tons/acre	13.9	13.5	14.8	13.1
Forage DM/cow, tons	7.5	8.0	6.6	6.5
Labor & Capital Efficiency				
Worker equivalent	2.94	2.99	6.83	7.53
Milk sold/worker, lbs.	517,415	504,456	721,068	747,504
Cows/worker	32	30	37	38
Farm capital/worker	$195,508	$199,248	$207,254	$217,109
Farm capital/cow	$6,202	$6,570	$5,598	$5,735
Farm capital/cwt. milk	$37.80	$39.50	$28.74	$29.05
Milk Production Costs & Returns				
Selected costs/cwt.:				
Hired labor	$1.33	$1.40	$2.08	$2.37
Grain & concentrate	$3.58	$3.87	$3.82	$3.80
Purchased roughage	$0.10	$0.14	$0.17	$0.11
Replacements purchased	$0.12	$0.18	$0.06	$0.11
Vet & medicine	$0.27	$0.29	$0.33	$0.35
Milk marketing	$0.56	$0.53	$0.33	$0.33
Other dairy expenses	$0.55	$0.59	$0.59	$0.52
Operating costs/cwt.	$9.42	$10.47	$9.85	$10.43
Total labor costs/cwt.	$2.53	$2.71	$2.44	$2.77
Operator resources/cwt.	$3.03	$3.20	$1.45	$1.62
Total costs/cwt.	$13.95	$15.18	$12.36	$13.22
Average farm price/cwt.	$13.02	$14.52	$13.04	$14.57
Return over total costs/cwt.	$-0.93	$-0.66	$0.68	$1.35
Related Cost Factors				
Hired labor/cow	$218	$234	$404	$468
Total labor/cow	$416	$451	$476	$542
Purchased dairy feed/cow	$604	$667	$777	$771
Purchased grain & concentrate as % milk receipts	28%	27%	29%	26%
Vet & medicine/cow	$31	$48	$65	$70
Machinery costs/cow	$404	$434	$358	$387
Profitability Analysis				
Net farm income (w/o apprec.)	$33,855	$40,526	$106,531	$168,787
Labor & mgmt. income/operator	$9,162	$12,807	$49,594	$76,839
Rates of return on:				
Equity capital w/apprec.	6.14%	8.25%	15.86%	18.51%
All capital w/apprec.	6.76%	8.32%	12.41%	14.51%

Table 41. FARM BUSINESS SUMMARY BY HERD SIZE
409 New York Dairy Farms, 1989

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	30	71	76	54	36
ACCRUAL EXPENSES					
Hired labor	$ 2,395	$ 5,539	$ 9,109	$ 15,465	$ 22,322
Dairy grain & concentrate	20,568	30,134	36,734	49,960	60,192
Dairy roughage	978	1,689	812	2,099	610
Nondairy feed	328	465	407	569	351
Machine hire/rent/lease	583	1,437	1,539	2,098	1,825
Machine repairs/parts	3,894	5,685	8,000	9,136	14,575
Auto expense (farm share)	651	633	629	741	868
Fuel, oil & grease	1,977	2,520	3,768	4,439	5,814
Replacement livestock	2,190	1,797	1,598	1,921	2,990
Breeding	981	1,686	2,188	2,644	3,502
Veterinary & medicine	1,468	2,001	3,023	3,357	4,676
Milk marketing	3,179	4,852	5,862	6,959	9,584
Cattle lease/rent	695	172	250	376	172
Other livestock expense	3,501	5,198	6,492	7,439	10,961
Fertilizer & lime	1,756	3,597	5,177	6,899	9,512
Seeds & plants	810	1,476	2,356	2,997	3,283
Spray & other crop expense	907	1,243	1,784	2,247	3,696
Land/building/fence repair	1,515	1,612	3,045	2,884	5,343
Taxes & rent	3,127	4,856	7,101	8,123	9,936
Telephone & electricity	2,749	3,676	4,860	5,251	6,905
Interest paid	5,053	9,735	11,524	12,863	15,730
Misc. (including insurance)	2,457	3,453	5,050	5,690	6,297
Total Operating Expenses	$61,762	$ 93,456	$121,308	$154,157	$199,144
Expansion livestock	1	444	737	495	781
Machinery depreciation	4,874	7,916	10,386	12,113	15,505
Building depreciation	1,986	3,152	5,531	5,758	9,294
Total Accrual Expenses	$68,623	$104,968	$137,962	$172,523	$224,724
ACCRUAL RECEIPTS					
Milk sales	$71,242	$108,664	$148,487	$180,271	$235,827
Dairy cattle	6,649	8,678	11,397	13,504	19,819
Dairy calves	1,561	2,108	2,604	4,225	3,750
Other livestock	121	939	422	329	174
Crops	664	1,940	1,201	684	3,590
Misc. receipts	2,152	2,840	3,279	5,381	5,547
Total Accrual Receipts	$82,389	$125,169	$167,390	$204,394	$268,707
PROFITABILITY ANALYSIS					
Net farm income (w/o apprec.)	$13,766	$20,201	$29,428	$31,871	$43,983
Net farm income (w/apprec.)	$24,047	$36,347	$48,781	$51,376	$70,303
Labor & mgmt. income	$2,102	$6,606	$11,438	$11,758	$18,041
Number of operators	1.15	1.17	1.42	1.39	1.42
Labor & mgmt. inc./oper.	$1,828	$5,646	$8,055	$8,459	$12,705
Rates of return on:					
Equity capital w/o apprec.	-4.6%	-1.7%	0.3%	0.8%	2.9%
Equity capital w/apprec.	1.4%	5.7%	6.4%	6.4%	8.4%
All capital w/o apprec.	-1.1%	1.8%	2.7%	3.0%	4.6%
All capital w/apprec.	3.0%	6.5%	6.9%	6.9%	8.7%

Table 41 (continued) FARM BUSINESS SUMMARY BY HERD SIZE
409 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	80	31	17	14
ACCRUAL EXPENSES				
Hired labor	$ 30,190	$ 55,322	$ 83,642	$ 253,181
Dairy grain & concentrate	76,521	119,199	172,054	373,816
Dairy roughage	3,495	4,313	5,709	6,332
Nondairy feed	454	749	967	0
Machine hire/rent/lease	2,725	3,914	5,586	19,081
Machine repairs/parts	17,077	23,034	34,450	60,444
Auto expense (farm share)	901	789	752	2,637
Fuel, oil & grease	7,190	10,677	14,698	22,618
Replacement livestock	2,260	3,079	16,880	8,915
Breeding	3,604	5,568	6,418	14,190
Veterinary & medicine	5,842	8,792	14,636	34,474
Milk marketing	9,982	15,135	18,727	27,913
Cattle lease/rent	64	272	988	6,948
Other livestock expense	12,307	16,189	20,429	45,722
Fertilizer & lime	11,174	15,645	23,013	37,238
Seeds & plants	4,629	6,865	9,554	21,154
Spray & other crop expense	4,851	5,425	10,219	20,085
Land/building/fence repair	5,306	7,937	15,079	23,226
Taxes & rent	13,533	17,365	27,240	41,176
Telephone & electricity	8,315	11,241	13,898	25,755
Interest paid	22,613	32,977	42,676	89,048
Misc. (including insurance)	9,421	11,400	19,671	25,496
Total Operating Expenses	$252,454	$375,887	$557,286	$1,159,449
Expansion livestock	1,012	3,114	14,821	29,024
Machinery depreciation	16,740	25,779	30,127	53,395
Building depreciation	8,762	12,154	20,363	55,376
Total Accrual Expenses	$278,968	$416,934	$622,597	$1,297,244
ACCRUAL RECEIPTS				
Milk sales	$296,217	$424,114	$624,999	$1,426,857
Dairy cattle	22,779	31,675	69,534	137,679
Dairy calves	4,544	7,831	10,033	23,397
Other livestock	287	2,423	353	-294
Crops	6,136	9,456	3,941	-19,703
Misc. receipts	8,498	11,811	23,551	20,741
Total Accrual Receipts	$338,461	$487,310	$732,411	$1,588,677
PROFITABILITY ANALYSIS				
Net farm income (w/o apprec.)	$59,493	$70,376	$109,814	$291,433
Net farm income (w/apprec.)	$89,182	$106,904	$147,102	$380,250
Labor & mgmt. income	$31,767	$30,493	$65,406	$210,774
Number of operators	1.51	1.67	1.49	1.41
Labor & mgmt. inc./oper.	$21,038	$18,259	$43,897	$149,485
Rate of return on:				
Equity capital w/o apprec.	4.4%	4.2%	7.9%	15.1%
Equity capital w/apprec.	10.3%	9.0%	12.2%	20.6%
All capital w/o apprec.	5.9%	5.8%	8.3%	12.8%
All capital w/apprec.	9.7%	9.0%	11.0%	16.2%

Table 42. FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
409 New York Dairy Farms, 1989

Farms with:	Less than 40 Cows		40 to 54 Cows		55 to 69 Cows	
Item	Jan. 1	Dec. 31	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS						
Farm cash/chkg./sav.	$ 2,524	$ 4,952	$ 3,145	$ 3,115	$ 3,664	$ 7,866
Accounts receivable	5,781	6,583	8,661	9,928	12,079	14,717
Prepaid expenses	15	16	0	75	49	60
Feed & supplies	13,423	13,293	18,305	20,065	29,450	30,543
Livestock*	44,604	48,981	61,678	71,795	83,263	92,798
Machinery & equipment*	50,078	51,956	59,262	62,317	83,363	89,969
FLB & PCA stock	593	364	1,252	819	2,242	1,683
Other stock & cert.	811	822	2,344	2,420	3,784	3,700
Land & buildings*	129,350	134,060	176,176	181,000	227,568	234,459
Total Farm Assets	$247,179	$261,027	$330,823	$351,534	$445,462	$475,795
Pers. cash/chkg./sav.	$ 4,567	$ 5,041	$ 3,024	$ 3,426	$ 6,013	$ 6,130
Cash value of life ins.	1,328	1,902	3,108	3,460	4,387	4,314
Nonfarm real estate	17,909	18,136	20,159	19,118	16,809	18,298
Auto (personal share)	3,101	2,405	2,382	3,310	3,709	4,729
Stocks & bonds	2,617	3,728	2,997	3,230	2,885	3,227
Household furnishings	9,173	8,773	9,849	10,911	8,619	9,321
All other	4,461	3,398	3,543	3,181	2,369	2,056
Tot. Nonfarm Assets**	$ 43,157	$ 43,383	$ 45,063	$ 46,636	$ 44,790	$ 48,075
Total Farm & Nonfarm Assets	$290,336	$304,410	$375,886	$398,170	$490,252	$523,870
LIABILITIES						
Accounts payable	$ 2,375	$ 2,208	$ 4,264	$ 4,239	$ 3,106	$ 2,386
Operating debt	419	819	1,166	1,436	1,585	1,687
Short term	636	1,094	1,217	911	1,343	1,620
Advanced gov't. rec.	0	0	0	27	0	0
Intermediate***	31,656	31,720	44,740	46,022	49,114	51,799
Long term*	47,283	45,499	70,569	67,504	86,602	86,107
Total Farm Liab.	$ 82,369	$ 81,340	$121,956	$120,139	$141,750	$143,599
Tot. Nonfarm Liab.**	694	829	3,040	4,591	2,496	2,779
Total Farm & Nonfarm Liabilities	$ 83,063	$ 82,169	$124,996	$124,730	$144,246	$146,378
Farm Net Worth (Equity Capital)	$164,810	$179,687	$208,867	$231,395	$303,712	$332,196
Farm & Nonfarm Net Worth	$207,273	$222,241	$250,890	$273,440	$346,006	$377,492

FINANCIAL MEASURES	Less than 40 Cows	40 to 54 Cows	55 to 69 Cows
Percent equity	69%	66%	70%
Debt/asset ratio-long term	0.34	0.37	0.37
Debt/asset ratio-inter. & current	0.28	0.31	0.24
Change in net worth with apprec.	$14,877	$22,528	$28,484
Total farm debt per cow	$2,392	$2,503	$2,279
Debt payments made per cow	$504	$501	$487
Debt payments as % of milk sales	21%	21%	20%
Amount avail. for debt service	$18,764	$23,403	$30,378
Cash flow coverage ratio for 1989	1.37	1.13	1.16

*Includes discounted lease payments.
**Average of farms reporting nonfarm assets and liabilities for 1989.
***Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

Table 42 (cont'd) FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
409 New York Dairy Farms, 1989

Farms with:	70 to 84 Cows		85 to 99 Cows	
Item	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash/chkg./savings	$ 4,356	$ 4,829	$ 10,185	$ 11,878
Accounts receivable	15,076	17,283	19,203	22,459
Prepaid expenses	96	154	0	42
Feed & supplies	36,556	36,738	50,109	51,786
Livestock*	101,318	109,932	128,625	143,711
Machinery & equipment*	96,463	100,690	121,493	129,779
FLB & PCA stock	3,565	2,233	4,033	2,683
Other stock & cert.	5,548	5,605	6,792	7,166
Land & buildings*	231,804	244,714	282,422	297,409
Total Farm Assets	$494,782	$522,178	$622,862	$666,913
Pers. cash/chkg./savings	$ 7,819	$ 9,562	$ 12,444	$ 12,771
Cash value of life ins.	6,444	6,915	6,313	7,589
Nonfarm real estate	1,297	1,297	68,940	71,340
Auto (personal share)	3,278	3,262	3,974	4,604
Stocks & bonds	2,326	2,855	9,066	10,275
Household furnishings	7,540	7,663	12,040	12,140
All other	2,817	2,738	6,061	6,228
Total Nonfarm Assets**	$ 31,521	$ 34,291	$118,837	$124,947
Total Farm & Nonfarm Assets	$526,303	$556,469	$741,699	$791,860
LIABILITIES				
Accounts payable	$ 4,658	$ 6,543	$ 4,023	$ 4,139
Operating debt	1,821	1,719	3,098	3,563
Short term	2,730	2,190	429	458
Advanced gov't. rec.	0	79	46	0
Intermediate***	70,943	68,082	70,924	70,201
Long term*	81,571	83,708	86,553	84,557
Total Farm Liab.	$161,723	$162,321	$165,073	$162,918
Total Nonfarm Liab.**	730	946	1,434	1,396
Total Farm & Nonfarm Liabilities	$162,453	$163,267	$166,507	$164,314
Farm Net Worth (Equity Capital)	$333,059	$359,857	$457,789	$503,995
Farm & Nonfarm Net Worth	$363,850	$393,202	$575,192	$627,546

FINANCIAL MEASURES	70 to 84 Cows	85 to 99 Cows
Percent equity	69%	76%
Debt/asset ratio-long term	0.34	0.28
Debt/asset ratio-inter. & current	0.28	0.21
Change in net worth with apprec.	$26,798	$46,206
Total farm debt per cow	$2,081	$1,715
Debt payments made per cow	$436	$470
Debt payments as % of milk sales	18%	18%
Amount avail. for debt service	$34,691	$50,507
Cash flow coverage ratio for 1989	1.21	1.50

*Includes discounted lease payments.
**Average of farms reporting nonfarm assets and liabilities for 1989.
***Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

Table 42 (cont'd) FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
409 New York Dairy Farms, 1989

Farms with:	100 to 149 Cows		150 to 199 Cows	
Item	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash/chkg./savings	$ 13,511	$ 14,250	$ 8,934	$ 5,412
Accounts receivable	25,047	29,370	35,526	41,319
Prepaid expenses	124	145	0	119
Feed & supplies	57,495	63,078	76,415	87,952
Livestock*	160,348	181,423	229,484	243,888
Machinery & equipment*	141,672	151,849	192,342	211,823
FLB & PCA stock	6,027	3,729	11,558	7,862
Other stock & cert.	5,705	5,736	12,425	12,461
Land & buildings*	337,200	343,338	526,377	549,276
Total Farm Assets	$747,129	$792,918	$1,093,061	$1,160,112
Pers. cash/chkg./savings	$ 4,720	$ 5,529	$ 2,219	$ 4,553
Cash value of life ins.	3,937	4,748	9,007	10,411
Nonfarm real estate	100,995	100,995	71,588	72,088
Auto (personal share)	3,124	3,435	2,162	3,094
Stocks & bonds	3,053	3,888	4,256	6,244
Household furnishings	7,768	7,402	5,912	6,118
All other	4,608	8,487	27,577	26,508
Total Nonfarm Assets**	$128,206	$134,484	$ 122,722	$ 129,017
Total Farm & Nonfarm Assets	$875,335	$927,402	$1,215,783	$1,289,129
LIABILITIES				
Accounts payable	$ 7,374	$ 5,669	$ 10,369	$ 9,279
Operating debt	5,270	7,241	6,989	8,798
Short term	3,012	3,166	3,793	1,410
Advanced gov't. rec.	0	16	0	12
Intermediate***	98,620	96,360	131,263	137,994
Long term*	150,454	145,360	206,439	211,119
Total Farm Liab.	$264,730	$257,812	$ 358,853	$ 368,612
Total Nonfarm Liab.**	2,304	4,184	12,740	11,684
Total Farm & Nonfarm Liabilities	$267,034	$261,996	$ 371,593	$ 380,296
Farm Net Worth (Equity Capital)	$482,399	$535,106	$ 734,208	$ 791,500
Farm & Nonfarm Net Worth	$608,301	$665,406	$ 844,190	$ 908,833

FINANCIAL MEASURES	100 to 149 Cows	150 to 199 Cows
Percent equity	67%	68%
Debt/asset ratio-long term	0.42	0.38
Debt/asset ratio-inter. & current	0.25	0.26
Change in net worth with apprec.	$52,707	$57,292
Total farm debt per cow	$2,079	$2,168
Debt payments made per cow	$467	$552
Debt payments as % of milk sales	19%	22%
Amount avail. for debt service	$60,506	$89,986
Cash flow coverage ratio for 1989	1.15	1.11

*Includes discounted lease payments.
**Average of farms reporting nonfarm assets and liabilities for 1989.
***Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

Table 42 (cont'd) FARM FAMILY FINANCIAL SITUATION BY HERD SIZE
409 New York Dairy Farms, 1989

Farms with:	200 to 299 Cows		More than 300 Cows	
Item	Jan. 1	Dec. 31	Jan. 1	Dec. 31
ASSETS				
Farm cash/chkg./savings	$ 5,943	$ 8,040	$ 16,017	$ 24,860
Accounts receivable	46,621	55,131	101,657	127,502
Prepaid expenses	471	324	5,068	8,214
Feed & supplies	117,606	124,257	280,374	291,873
Livestock*	304,035	340,842	553,509	629,735
Machinery & equipment*	230,326	246,739	324,924	385,629
FLB & PCA stock	13,717	9,240	18,213	13,921
Other stock & cert.	21,440	22,793	68,664	69,218
Land & buildings*	558,197	591,508	1,082,573	1,155,431
Total Farm Assets	$1,298,356	$1,398,874	$2,450,999	$2,706,383
Pers. cash/chkg./savings	$ 7,411	$ 8,267	$ 2,040	$ 2,328
Cash value of life ins.	22,877	22,846	1,505	1,632
Nonfarm real estate	12,000	14,778	34,000	33,000
Auto (personal share)	5,411	6,444	3,900	2,900
Stocks & bonds	32,971	35,919	16,667	22,049
Household furnishings	5,778	5,889	6,800	8,060
All other	10,887	8,623	8,792	7,942
Total Nonfarm Assets**	$ 97,336	$ 102,765	$ 73,704	$ 77,912
Total Farm & Nonfarm Assets	$1,395,692	$1,501,639	$2,524,703	$2,784,295
LIABILITIES				
Accounts payable	$ 19,458	$ 13,985	$ 13,502	$ 19,014
Operating debt	20,588	29,323	90,589	103,588
Short term	10,610	20,582	14,800	9,189
Advanced gov't. rec.	0	0	0	0
Intermediate***	251,316	255,598	453,813	446,311
Long term*	165,971	168,870	417,087	393,113
Total Farm Liab.	$ 467,943	$ 488,358	$ 989,791	$ 971,215
Total Nonfarm Liab.**	161	1,739	0	50
Total Farm & Nonfarm Liabilities	$ 468,104	$ 490,097	$ 989,791	$ 971,265
Farm Net Worth (Equity Capital)	$ 830,413	$ 910,516	$1,461,208	$1,735,168
Farm & Nonfarm Net Worth	$ 927,588	$1,011,542	$1,534,912	$1,813,030

FINANCIAL MEASURES	200 to 299 Cows	More than 300 Cows
Percent equity	65%	64%
Debt/asset ratio-long term	0.29	0.34
Debt/asset ratio-inter. & current	0.40	0.37
Change in net worth with apprec.	$80,103	$273,960
Total farm debt per cow	$1,908	$1,805
Debt payments made per cow	$501	$473
Debt payments as % of milk sales	19%	17%
Amount avail. for debt service	$135,476	$353,893
Cash flow coverage ratio for 1989	1.29	1.63

*Includes discounted lease payments.
**Average of farms reporting nonfarm assets and liabilities for 1989.
***Includes FLB/PCA stock and discounted lease payments for cattle and machinery.

Table 43. SELECTED BUSINESS FACTORS BY HERD SIZE
409 New York Dairy Farms, 1989

Item / Farms with:	Less than 40 Cows	40 to 54 Cows	55 to 69 Cows	70 to 84 Cows	85 to 99 Cows
Number of farms	30	71	76	54	36
Cropping Program Analysis					
Total Tillable acres	116	171	225	275	309
Tillable acres rented*	33	56	70	105	132
Hay crop acres*	80	108	130	154	172
Corn silage acres*	17	29	37	56	61
Hay crop, tons DM/acre	2.2	2.2	2.5	2.5	2.8
Corn silage, tons/acre	11.7	13.0	12.6	11.8	13.2
Oats, bushels/acre	55.0	46.4	54.2	59.7	53.3
Forage DM per cow, tons	7.5	7.9	7.9	7.9	8.1
Tillable acres/cow	3.6	3.6	3.7	3.6	3.3
Fert. & lime exp./til. acre	$15.14	$21.04	$23.01	$25.08	$30.78
Total machinery costs	$14,489	$21,196	$28,625	$33,422	$44,870
Machinery cost/tillable acre	$125	$124	$127	$122	$145
Dairy Analysis					
Number of cows	32	47	62	76	93
Number of heifers	25	37	51	63	73
Milk sold, lbs.	497,255	756,545	1,019,196	1,256,591	1,613,365
Milk sold/cow, lbs.	15,507	16,044	16,569	16,482	17,426
Operating cost of prod. milk/cwt.	$10.18	$10.23	$10.12	$10.39	$10.35
Total cost of prod. milk/cwt.	$17.64	$16.30	$16.04	$15.52	$15.25
Price/cwt. milk sold	$14.33	$14.36	$14.57	$14.35	$14.62
Purchased dairy feed/cow	$671	$674	$611	$683	$657
Purchased dairy feed/cwt. milk	$4.33	$4.21	$3.68	$4.14	$3.77
Purchased grain & conc. as % of milk receipts	29%	28%	25%	28%	26%
Purchased feed & crop expense/cwt. milk	$5.03	$5.04	$4.60	$5.11	$4.79
Capital Efficiency					
Farm capital/worker	$143,810	$170,134	$187,911	$179,989	$208,333
Farm capital/cow	$7,916	$7,228	$7,490	$6,673	$6,964
Farm capital/til. acre owned	$3,025	$2,967	$2,991	$2,991	$3,643
Real estate/cow	$4,103	$3,784	$3,756	$3,127	$3,131
Machinery investment/cow	$1,589	$1,288	$1,409	$1,294	$1,357
Capital turnover, years	2.74	2.41	2.47	2.27	2.19
Labor Efficiency					
Worker equivalent	1.77	2.01	2.45	2.83	3.10
Operator/manager equivalent	1.15	1.17	1.42	1.39	1.42
Milk sold/worker, lbs.	281,421	377,263	415,775	444,802	521,203
Cows/worker	18	23	25	27	30
Work units/worker	194	253	272	290	320
Labor cost/cow	$620	$486	$474	$469	$455
Labor cost/tillable acre	$172	$134	$129	$130	$136

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

Table 43 (continued) SELECTED BUSINESS FACTORS BY HERD SIZE
409 New York Dairy Farms, 1989

Item / Farms with:	100 to 149 Cows	150 to 199 Cows	200 to 299 Cows	300 or More Cows
Number of farms	80	31	17	14
Cropping Program Analysis				
Total tillable acres	381	525	599	964
Tillable acres rented*	153	211	206	339
Hay crop acres*	198	260	244	326
Corn silage acres*	94	146	257	432
Hay crop, tons DM/acre	2.9	2.5	3.1	3.2
Corn silage, tons/acre	14.4	14.0	12.6	13.7
Oats, bushels/acre	54.6	57.9	33.8	62.5
Forage DM per cow, tons	8.5	8.0	7.5	5.9
Tillable acres/cow	3.2	3.1	2.5	1.9
Fert. & lime exp./til. acre	$29.33	$29.80	$38.42	$38.63
Total machinery costs	$51,786	$74,086	$97,355	$175,380
Machinery cost/tillable acre	$136	$141	$163	$182
Dairy Analysis				
Number of cows	121	170	244	505
Number of heifers	99	140	181	381
Milk sold, lbs.	2,047,224	2,885,439	4,343,897	9,718,642
Milk sold/cow, lbs.	16,909	17,018	17,790	19,250
Operating cost of prod. milk/cwt.	$10.32	$10.94	$10.70	$10.56
Total cost of prod. milk/cwt.	$14.61	$14.90	$13.81	$13.03
Price/cwt. milk sold	$14.47	$14.70	$14.39	$14.68
Purchased dairy feed/cow	$661	$729	$728	$753
Purchased dairy feed/cwt. milk	$3.91	$4.28	$4.09	$3.91
Purchased grain & conc. as % of milk receipts	26%	28%	28%	26%
Purchased feed & crop expense/cwt. milk	$4.92	$5.25	$5.08	$4.72
Capital Efficiency				
Farm capital/worker	$214,342	$228,974	$219,354	$225,760
Farm capital/cow	$6,359	$6,647	$5,523	$5,107
Farm capital/til. acre owned	$3,377	$3,576	$3,432	$4,126
Real estate/cow	$2,810	$3,173	$2,354	$2,216
Machinery investment/cow	$1,212	$1,192	$977	$704
Capital turnover, years	2.09	2.15	1.75	1.54
Labor Efficiency				
Worker equivalent	3.59	4.92	6.15	11.42
Operator/manager equivalent	1.51	1.67	1.49	1.41
Milk sold/worker, lbs.	569,861	586,452	706,539	850,851
Cows/worker	34	35	40	44
Work units/worker	357	367	402	433
Labor cost/cow	$425	$461	$423	$538
Labor cost/tillable acre	$135	$149	$172	$282

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

Table 44. SELECTED BUSINESS FACTORS BY TYPE OF BARN AND HERD SIZE
381 New York Dairy Farms, 1989

Farms with:	Conventional		Freestall	
Item	≤60 Cows	>60 Cows	≤120 Cows	>120 Cows
Number of farms	122	109	65	85
Cropping Program Analysis				
Total Tillable acres	167	294	270	585
Tillable acres rented*	53	115	100	217
Hay crop acres*	103	172	146	251
Corn silage acres*	28	56	67	201
Hay crop, tons DM/acre	2.3	2.6	2.5	2.9
Corn silage, tons/acre	12.2	13.8	13.7	13.4
Oats, bushels/acre	49.6	58.7	60.0	54.7
Forage DM per cow, tons	7.7	8.1	8.1	7.2
Tillable acres/cow	3.6	3.4	3.2	2.6
Fert. & lime exp./til. acre	$22.30	$24.69	$30.57	33.16
Total machinery costs	$21,279	$36,427	$40,470	$90,526
Machinery cost/tillable acre	$127	$124	$150	$155
Dairy Analysis				
Number of cows	46	87	85	227
Number of heifers	37	71	69	177
Milk sold, lbs.	743,605	1,453,839	1,415,556	4,098,891
Milk sold/cow, lbs.	16,157	16,697	16,585	18,066
Operating cost of prod. milk/cwt.	$10.11	$10.42	$10.29	$10.68
Total cost of prod. milk/cwt.	$16.41	$15.19	$15.45	$13.92
Price/cwt. milk sold	$14.40	$14.43	$14.58	$14.62
Purchased dairy feed/cow	$649	$664	$658	$723
Purchased dairy feed/cwt. milk	$4.01	$3.98	$3.97	$4.00
Purc. grain & conc. as % milk rec.	27%	27%	26%	26%
Purc. feed & crop exp./cwt. milk	$4.90	$4.86	$5.00	$4.93
Capital Efficiency				
Farm capital/worker	$168,798	$199,109	$205,751	$221,387
Farm capital/cow	$7,429	$6,765	$6,882	$5,812
Farm capital/til. acre owned	$2,998	$3,292	$3,437	$3,593
Real estate/cow	$3,824	$3,248	$3,176	$2,582
Machinery investment/cow	$1,391	$1,205	$1,417	$973
Capital turnover, years	2.48	2.30	2.26	1.81
Labor Efficiency				
Worker equivalent	2.02	2.96	2.86	5.96
Operator/manager equivalent	1.22	1.44	1.44	1.51
Milk sold/worker, lbs.	367,285	491,277	495,572	688,163
Cows/worker	23	29	30	38
Work units/worker	245	314	316	390
Labor cost/cow	$498	$447	$430	$483
Labor cost/tillable acre	$137	$133	$136	$187
Profitability & Balance Sheet Analysis				
Net farm income (w/o apprec.)	$20,720	$39,553	$39,227	$112,143
Labor & mgmt. income/operator	$5,437	$11,836	$11,533	$45,387
Farm debt/cow	$2,375	$2,055	$2,116	$2,024
Percent equity	68%	70%	69%	65%

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

Table 45. FARM BUSINESS CHART FOR SMALL CONVENTIONAL STALL DAIRY FARM
122 Conventional Stall Dairy Farms with 60 or Less Cows, New York, 1989

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
3.2	59	1,082,881	20,110	3.7	21	35	587,841
2.5	56	958,974	18,349	3.1	17	29	499,136
2.3	54	892,052	17,564	2.8	16	27	450,294
2.1	52	827,657	16,984	2.6	15	26	422,701
2.0	49	783,358	16,434	2.5	13	24	397,144
2.0	45	719,950	15,944	2.2	12	23	374,075
1.9	43	650,096	15,271	2.0	11	22	345,055
1.7	40	584,651	14,520	1.9	10	20	303,273
1.4	35	530,551	13,332	1.7	8	17	258,421
1.1	26	359,661	11,239	1.1	4	13	177,369

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$316	14%	$217	$ 664	$ 464	$3.17
442	20	299	771	562	3.75
487	22	362	822	624	4.05
541	24	410	868	687	4.44
578	26	448	916	744	4.66
622	28	473	972	790	4.90
688	30	504	1,036	842	5.12
732	32	543	1,093	927	5.55
812	34	597	1,151	1,020	6.12
977	41	717	1,400	1,194	7.54

Value and Cost of Production			Profitability			
			Net Farm Income			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	With Apprec.	Without Apprec.	Labor &. Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.
$2,973	$ 6.19	$13.34	$77,328	$48,104	$26,023	$56,366
2,688	8.05	14.29	57,624	35,025	18,388	37,798
2,566	9.03	14.76	45,724	31,524	14,483	31,255
2,453	9.40	15.15	39,848	26,540	12,362	26,731
2,339	9.81	15.56	35,068	22,584	9,906	21,857
2,243	10.12	16.02	32,068	19,706	6,256	18,070
2,160	10.61	17.04	27,705	15,506	2,400	14,531
2,066	11.22	17.97	23,549	11,515	-1,429	11,710
1,870	12.19	19.30	15,708	3,658	-7,860	6,889
1,617	14.13	23.57	551	-8,603	-24,176	-6,541

Table 46. FARM BUSINESS CHART FOR LARGE CONVENTIONAL STALL DAIRY FARMS
109 Conventional Stall Dairy Farms with More Than 60 Cows, New York, 1989

Size of Business			Rates of Production			Labor Efficiency	
Worker Equiv-alent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
5.0	148	2,535,927	20,872	4.7	21	44	735,247
3.9	110	1,927,801	19,003	3.7	17	37	635,498
3.3	97	1,674,576	18,148	3.2	16	35	578,731
3.0	91	1,490,911	17,659	3.0	15	33	555,010
2.9	81	1,378,256	17,136	2.7	14	31	528,601
2.6	76	1,282,035	16,615	2.4	13	29	478,090
2.5	71	1,204,144	16,073	2.2	12	28	434,996
2.3	68	1,121,221	15,296	2.0	11	25	409,259
2.1	65	1,016,738	14,152	1.8	9	23	363,710
1.9	62	852,073	11,564	1.3	6	19	301,588

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$ 287	13%	$230	$ 584	$ 415	$2.96
387	19	296	690	570	3.72
507	21	331	748	667	4.24
581	24	363	800	749	4.50
645	27	403	841	787	4.69
690	29	437	887	828	4.87
733	30	469	929	892	5.11
772	31	494	977	945	5.44
844	33	550	1,061	998	5.69
1,022	40	626	1,181	1,184	6.82

Value and Cost of Production			Profitability			
			Net Farm Income			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	With Apprec.	Without Apprec.	Labor &. Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.
$3,077	$ 7.09	$12.08	$114,433	$88,805	$49,904	$91,501
2,729	8.23	13.18	94,259	65,165	31,977	63,463
2,620	8.88	13.91	77,085	55,430	24,453	48,723
2,523	9.66	14.33	66,467	47,313	18,813	40,634
2,443	10.21	14.83	59,917	41,312	15,344	33,677
2,382	10.68	15.30	54,078	34,051	10,150	25,419
2,331	11.12	15.85	50,247	28,701	5,622	20,441
2,185	11.49	16.51	42,611	22,779	-23	15,025
2,045	12.22	17.64	26,362	12,470	-7,495	8,067
1,663	13.72	19.28	7,372	-4,472	-30,414	-15,456

Table 47. FARM BUSINESS CHART FOR SMALL FREESTALL DAIRY FARMS
65 Freestall Barn Dairy Farms with 120 or Less Cows, New York, 1989

Size of Business			Rates of Production			Labor Efficiency	
Worker Equivalent	No. of Cows	Pounds Milk Sold	Pounds Milk Sold Per Cow	Tons Hay Crop DM/Acre	Tons Corn Silage Per Acre	Cows Per Worker	Pounds Milk Sold Per Worker
4.1	117	2,099,489	20,204	3.7	19	49	818,478
3.6	110	1,937,211	19,154	3.2	18	39	658,565
3.3	104	1,768,897	18,170	3.0	16	36	588,100
3.1	96	1,652,918	17,494	2.7	15	33	550,232
3.0	87	1,435,527	16,761	2.6	14	30	506,410
2.7	79	1,255,415	16,149	2.5	13	28	468,429
2.5	73	1,167,685	15,604	2.2	12	27	441,999
2.3	67	992,268	14,639	2.0	12	24	396,308
2.0	61	886,048	13,300	1.7	10	22	339,922
1.5	45	657,390	11,473	1.3	6	18	253,660

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$262	11%	$262	$ 629	$ 499	$3.18
414	18	335	685	598	3.65
481	21	361	726	648	4.03
529	23	387	807	695	4.39
559	24	416	848	747	4.75
619	26	442	892	823	5.10
711	29	486	946	884	5.37
786	31	581	1,028	985	5.72
827	35	627	1,150	1,066	6.23
927	39	772	1,319	1,166	7.47

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income With Apprec.	Net Farm Income Without Apprec.	Labor &. Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.
$2,931	$ 7.42	$12.82	$131,181	$92,002	$42,876	$120,849
2,746	8.41	13.67	108,370	70,904	29,632	71,555
2,627	8.78	13.95	86,558	59,498	24,712	53,730
2,535	9.32	14.44	71,185	47,335	17,710	45,227
2,389	9.91	14.83	63,492	39,374	12,181	39,713
2,340	10.38	15.55	49,919	32,611	9,253	30,475
2,271	10.74	16.16	45,678	23,502	5,595	24,566
2,163	11.42	16.96	40,668	17,094	433	19,880
2,026	12.08	18.09	28,633	12,468	-6,569	12,909
1,786	14.23	21.47	6,011	-9,408	-30,033	-22,467

Table 48. FARM BUSINESS CHART FOR LARGE FREESTALL DAIRY FARMS
85 Freestall Barn Dairy Farms with More Than 120 Cows, New York, 1989

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
13.5	599	11,715,283	21,902	4.7	21	57	974,828
7.9	309	5,924,952	20,191	3.9	17	45	834,516
6.4	241	4,151,273	19,033	3.5	15	42	758,862
5.9	202	3,477,166	18,235	3.1	15	40	679,571
5.4	176	3,076,850	17,527	2.9	14	38	648,794
4.7	158	2,716,435	17,113	2.7	14	36	622,961
4.3	147	2,587,680	16,618	2.5	13	33	591,466
4.0	135	2,401,491	16,199	2.3	12	30	555,013
3.6	129	2,208,918	15,276	2.0	10	29	477,645
2.9	124	1,747,481	12,827	1.4	8	24	394,681

Cost Control					
Grain Bought Per Cow	% Grain is of Milk Receipts	Machinery Costs Per Cow	Labor & Machinery Costs Per Cow	Feed & Crop Expenses Per Cow	Feed & Crop Expenses Per Cwt. Milk
$350	15%	$269	$ 570	$ 557	$3.34
447	18	311	713	659	3.99
542	21	347	755	763	4.37
612	24	367	806	824	4.55
675	26	385	841	871	4.72
697	27	412	884	910	5.03
735	29	446	944	940	5.35
791	30	473	999	986	5.66
854	32	523	1,089	1,033	5.99
933	38	637	1,214	1,135	6.79

Value and Cost of Production			Profitability			
Milk Receipts Per Cow	Oper. Cost Milk Per Cwt.	Total Cost Production Per Cwt.	Net Farm Income With Apprec.	Net Farm Income Without Apprec.	Labor &. Mgmt. Inc. Per Oper.	Change in Net Worth w/Apprec.
$3,158	$ 7.53	$11.77	$489,502	$388,784	$263,374	$386,727
2,943	8.97	12.78	224,879	166,354	81,107	148,869
2,826	9.63	13.41	175,229	125,725	55,887	114,322
2,690	10.12	13.79	149,071	104,032	39,787	93,275
2,588	10.72	14.03	128,645	89,598	30,944	75,711
2,514	11.14	14.37	112,208	74,194	24,061	61,278
2,411	11.53	14.82	95,648	58,276	18,210	48,408
2,317	11.83	15.31	82,467	48,720	12,879	39,145
2,194	12.23	15.86	62,456	31,784	4,109	19,973
1,931	13.85	18.47	11,693	-5,278	-33,414	-28,227

Table 49. SELECTED BUSINESS FACTORS BY MILKING SYSTEMS
404 New York Dairy Farms, 1989

Item	Dumping Station	Pipeline	Herringbone Parlor	Other Parlors
Number of farms	27	218	143	16
Percent of farms	7%	54%	35%	4%
Cropping Program Analysis				
Total Tillable acres	202	247	432	469
Tillable acres rented*	44	97	161	148
Hay crop acres*	117	142	203	211
Corn silage acres*	24	48	135	154
Hay crop, tons DM/acre	2.1	2.6	2.8	2.5
Corn silage, tons/acre	11.2	13.3	13.6	12.7
Oats, bushels/acre	46.2	52.7	58.1	48.4
Forage DM per cow, tons	7.2	8.2	7.7	5.5
Tillable acres/cow	4.4	3.4	2.8	2.3
Fert. & lime exp./tillable acre	$15.13	$26.07	$32.39	$27.92
Total machinery costs	$16,837	$32,010	$65,316	$76,948
Machinery cost/tillable acre	$83	$130	$151	$164
Dairy Analysis				
Number of cows	46	72	155	207
Number of heifers	39	58	123	155
Milk sold, lbs.	637,115	1,216,001	2,720,404	3,834,735
Milk sold/cow, lbs.	13,740	16,898	17,559	18,514
Oper. cost of prod. milk/cwt.	$10.11	$10.22	$10.64	$10.44
Total cost of prod. milk/cwt.	$16.72	$15.38	$14.44	$13.21
Price/cwt. milk sold	$14.07	$14.41	$14.64	$14.48
Purchased dairy feed/cow	$605	$659	$708	$739
Purchased dairy feed/cwt. milk	$4.40	$3.90	$4.03	$3.99
Purc. grain & conc. as % milk receipts	30%	26%	26%	27%
Purc. feed & crop expense/cwt. milk	$5.19	$4.84	$5.00	$4.69
Capital Efficiency				
Farm capital/worker	$151,565	$187,631	$223,556	$188,060
Farm capital/cow	$6,926	$6,872	$6,190	$5,467
Farm capital/tillable acre owned	$2,034	$3,299	$3,525	$3,516
Real estate/cow	$3,926	$3,277	$2,775	$2,522
Machinery investment/cow	$1,010	$1,279	$1,129	$798
Capital turnover, years	2.77	2.26	1.95	1.73
Labor Efficiency				
Worker equivalent	2.12	2.64	4.29	6.02
Operator/manager equivalent	1.26	1.38	1.44	1.28
Milk sold/worker, lbs.	300,491	461,112	634,298	636,955
Cows/worker	22	27	36	34
Work units/worker	236	293	375	341
Labor cost/cow	$513	$464	$463	$514
Labor cost/tillable acre	$118	$135	$166	$227
Profitability & Balance Sheet Analysis				
Net farm income (w/o apprec.)	$17,229	$34,265	$72,831	$116,451
Labor & mgmt. income/operator	$2,529	$10,879	$27,161	$62,160
Farm debt/cow	$2,641	$2,120	$1,984	$2,090
Percent equity	62%	70%	68%	62%

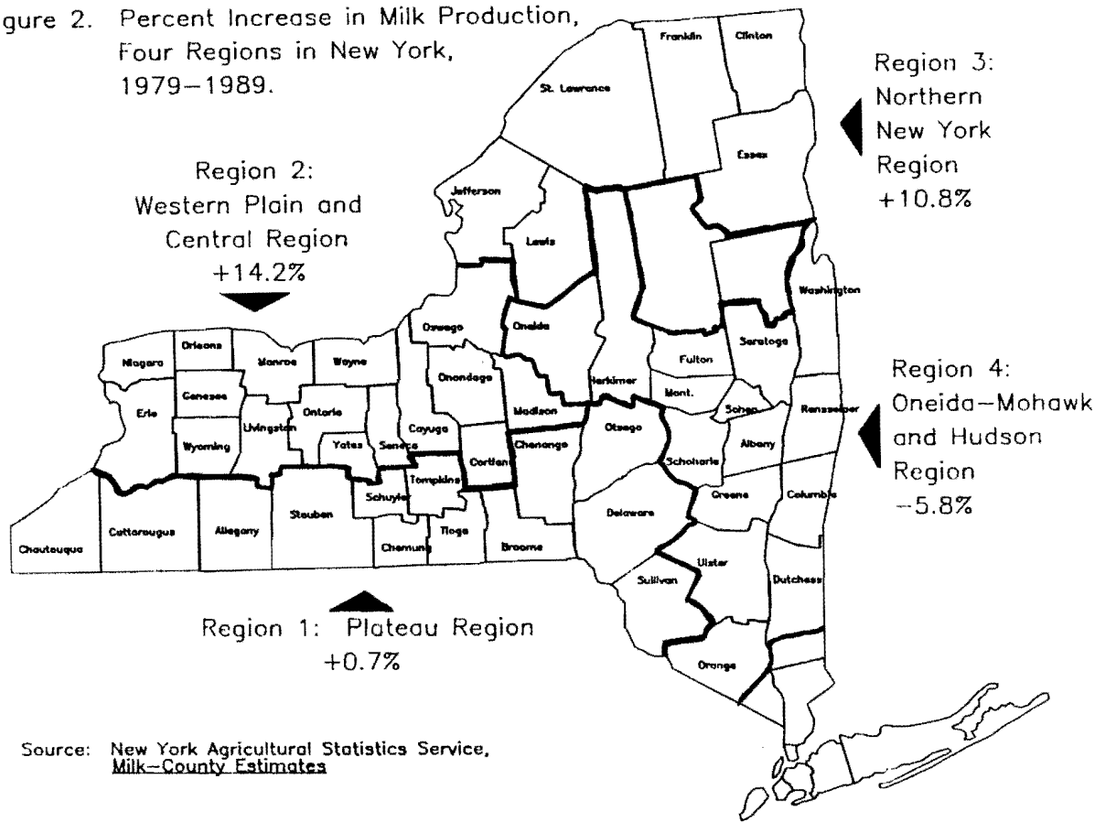
*Average of all farms, not only those reporting data.

Table 50. COMPARISON OF DAIRY FARM BUSINESS DATA BY REGION
420 New York Dairy Farms, 1989*

Item	Region** 1	2	3	4
Number of farms	145	91	73	111
ACCRUAL EXPENSES				
Hired labor	$ 19,169	$ 61,339	$18,861	$ 21,455
Feed	60,799	110,256	60,178	61,408
Machinery	19,225	38,134	18,750	20,946
Livestock	24,454	46,522	23,706	32,731
Crops	13,388	29,690	12,959	14,714
Real estate	12,808	24,252	12,651	15,157
Other	26,000	52,656	29,149	29,682
Total Operating	$175,843	$362,849	$176,254	$196,093
Expansion livestock	639	7,070	2,153	1,108
Machinery depreciation	12,822	21,962	14,268	12,546
Building depreciation	6,955	15,545	6,541	6,998
Total Accrual Expenses	$196,259	$407,426	$199,216	$216,745
ACCRUAL RECEIPTS				
Milk sales	$206,984	$429,021	$209,780	$224,509
Livestock	19,948	51,450	22,311	20,326
Crops	3,383	3,553	5,006	2,275
All other	5,799	11,566	5,866	5,990
Total Accrual Receipts	$236,114	$495,590	$242,963	$253,100
PROFITABILITY ANALYSIS				
Net farm income (w/o appreciation)	$39,855	$88,164	$43,747	$36,355
Net farm income (w/appreciation)	$61,920	$117,884	$65,914	$62,928
Labor & management income	$18,728	$54,993	$23,875	$10,767
Number of operators	1.34	1.52	1.37	1.42
Labor & management income/operator	$13,976	$36,179	$17,427	$7,582
BUSINESS FACTORS				
Worker equivalent	2.91	4.63	2.96	2.95
Number of cows	86	162	88	90
Number of heifers	67	131	72	71
Acres of hay crops***	151	179	171	165
Acres of corn silage***	57	140	70	69
Total tillable acres	267	476	287	297
Pounds of milk sold	1,431,388	2,978,961	1,470,681	1,496,965
Pounds of milk sold/cow	16,734	18,425	16,692	16,601
Tons hay crop dry matter/acre	2.6	2.9	2.4	2.6
Tons corn silage/acre	12.8	13.3	14.2	13.5
Cows/worker	29	35	30	31
Pounds of milk sold/worker	492,606	642,763	496,652	507,497
Percent grain & conc. is of milk receipts	28%	25%	27%	26%
Feed & crop expense/cwt. milk	$5.16	$4.67	$4.93	$5.07
Fertilizer & lime/crop acre	$27.37	$32.38	$25.97	$27.90
Machinery cost/tillable acre	$139	$144	$134	$131

*Includes 11 dairy cash-crop farms.
**See Figure 2 for region descriptions.
***Average of all farms in the region, not only those producing the crop.

Figure 2. Percent Increase in Milk Production, Four Regions in New York, 1979–1989.



Source: New York Agricultural Statistics Service, Milk–County Estimates

Table 51. MILK PRODUCTION AND AVERAGE COST OF PRODUCING MILK FOUR REGIONS OF NEW YORK, 1989

Item	Region* 1	2	3	4
MILK PRODUCTION**		(million pounds)		
1979	2,981.6	3,104.5	1,929.5	2,590.6
1989	3,003.7	3,546.1	2,138.0	2,441.6
Percent change	+0.7%	+14.2%	+10.8%	-5.8%
COST OF PRODUCING MILK		($ per hundredweight milk)		
Operating cost	$10.29	$10.18	$ 9.87	$11.26
Total cost	15.15	14.02	14.62	16.32
Average price received	14.46	14.40	14.26	15.00
Return per cwt. to operator labor, mgmt., & capital	2.62	2.90	2.80	2.28

*See Figure 2 for region descriptions.
**Source: New York Agricultural Statistics Service, Milk-County Estimates.

Table 52. TEN YEAR COMPARISON: SELECTED BUSINESS FACTORS
New York Dairy Farms, 1980 to 1989

Item	1980	1981	1982	1983	1984	1985	1986	1987	1988	1989
Number of farms	600	553	572	510	458	404	414	426	406	409
Cropping Program										
Total tillable acres	246	257	262	272	280	280	288	305	302	316
Tillable acres rented	76	83	83	91	94	93	100	105	104	117
Hay crop acres	131	131	135	139	143	142	147	153	156	164
Corn silage acres	60	59	70	72	76	69	67	67	74	81
Hay crop, tons DM/acre	2.5	2.5	2.6	2.5	2.7	2.7	2.7	2.7	2.6	2.6
Corn silage, tons/acre	14.5	14.9	14.0	13.5	14.0	14.3	14.3	16.2	14.1	13.4
Fert. & lime exp. /tillable acre	$29	$32	$33	$31	$32	$32	$26	$27	$29	$29
Machinery cost/cow	$425	$465	$432	$413	$433	$426	$400	$413	$398	$425
Dairy Analysis										
Number of cows	75	79	82	88	89	89	95	101	102	104
Number of heifers	56	59	67	72	76	73	77	79	82	83
Milk sold, cwt.	10,761	11,420	12,105	13,432	13,735	14,001	15,374	16,498	17,200	17,975
Milk sold/cow, lbs.	14,300	14,456	14,762	15,264	15,433	15,679	16,237	16,351	16,882	17,259
Purchased dairy feed/cwt. milk	$3.47	$3.51	$3.27	$3.44	$3.28	$3,04	$3.10	$3.21	$3.71	$3.99
Purc. grain & conc. as % milk receipts	27%	26%	24%	25%	24%	23%	24%	24%	28%	27%
Purc. feed & crop exp./cwt. milk	$4.49	$4.67	$4.53	$4.62	$4.53	$4.13	$4.00	$4.11	$4.62	$4.92
Capital Efficiency										
Farm capital/cow	$5,539	$5,676	$5,517	$5,421	$5,520	$5,801	$5,792	$5,894	$6,133	$6,407
Real estate/cow	$2,602	$2,693	$2,664	$2,668	$2,731	$2,726	$2,758	$2,805	$2,902	$2,977
Mach. invest./cow	$1,015	$1,078	$1,047	$1,038	$1,057	$1,083	$1,062	$1,057	$1,083	$1,154
Capital turnover,yrs.	2.2	2.4	2.5	2.4	2.3	2.5	2.3	2.2	2.2	2.1
Labor Efficiency										
Worker equivalent	2.70	2.75	2.83	3.00	3.08	3.17	3.17	3.19	3.17	3.30
Operator/manager eq.	1.30	1.25	1.30	1.32	1.31	1.34	1.33	1.32	1.35	1.39
Milk sold/worker, lbs.	403,000	415,273	427,739	447,733	445,942	442,125	497,555	516,728	542,708	544,598
Cows/worker	28	29	29	29	29	28	31	32	32	32
Labor cost/cow	$326	$335	$352	$344	$366	$387	$385	$400	$426	$469
Profitability & Financial Analysis										
Labor & mgmt. income/oper.	$1,565	$-4,261	$3,451	$5,514	$2,262	$2,850	$3,837	$11,042	$11,911	$18,004
Farm net worth	$288,022	$301,975	$306,589	$322,001	$336,210	$325,664	$348,909	$398,209	$426,123	$468,848
Percent equity	66%	64%	63%	63%	64%	63%	62%	65%	66%	68%

Table 53. TEN YEAR COMPARISON: AVERAGE COST OF PRODUCING MILK PER HUNDREDWEIGHT
New York Dairy Farms, 1980 to 1989

Item	1980	1981	1982	1983	1984	1985*	1986*	1987*	1988*	1989*
Cash Operating Expenses										
Hired labor	$ 1.09	$ 1.20	$ 1.29	$ 1.25	$ 1.39	$ 1.38	$ 1.38	$ 1.49	$ 1.46	$1.62
Purchased feed	3.60	3.62	3.40	3.59	3.46	3.09	3.15	3.26	3.73	4.02
Machinery repairs & rent	.75	.81	.81	.77	.80	.78	.75	.88	.83	.92
Auto expenses (farm share)	.04	.04	.04	.04	.03	.03	.04	.04	.04	.04
Fuel, oil & grease	.54	.62	.59	.49	.50	.48	.34	.35	.34	.33
Replacement livestock	.29	.23	.19	.16	.10	.10	.13	.13	.11	.17
Breeding fees	.16	.18	.19	.19	.20	.20	.19	.19	.18	.18
Veterinary & medicine	.24	.28	.29	.28	.29	.27	.28	.28	.28	.30
Milk marketing	.35	.40	.50	.93	1.03	.80	.84	.74	.52	.49
Other dairy expenses	.47	.49	.52	.54	.55	.53	.52	.53	.56	.60
Lime & fertilizer	.66	.72	.71	.63	.66	.63	.49	.50	.51	.50
Seeds & plants	.20	.23	.23	.21	.22	.23	.21	.21	.21	.22
Spray & other crop expense	.16	.21	.18	.19	.20	.22	.20	.19	.19	.21
Land, building, fence repair	.21	.22	.21	.18	.18	.17	.16	.20	.22	.27
Taxes	.31	.35	.34	.34	.33	.34	.33	.35	.35	.36
Insurance	.24	.23	.23	.21	.20	.22	.22	.22	.23	.23
Telephone & elec. (farm share)	.28	.32	.35	.36	.36	.37	.39	.38	.38	.39
Interest paid	1.17	1.43	1.54	1.40	1.40	1.25	1.18	1.04	1.02	1.06
Misc. (including rent)	.37	.41	.43	.44	.44	.40	.41	.45	.41	.43
Total Operating Expenses	$11.13	$11.99	$12.04	$12.20	$12.34	$11.50	$11.22	$11.43	$11.57	$12.34
Less: Nonmilk cash receipts	1.67	1.58	1.47	1.49	1.74	1.58	1.52	1.84	1.86	1.75
Increase in feed & supplies**	.43	.11	.03	.26	.18	.05	.01	.16	.16	.02
Increase in livestock	.39	.25	.35	.24	.16	.18	.12	.10	.08	.12
OPERATING COST OF MILK PRODUCTION	$ 8.64	$10.05	$10.19	$10.21	$10.26	$ 9.69	$ 9.57	$ 9.33	$ 9.47	$10.45
Overhead Expenses										
Depreciation: mach. & bldgs.	$ 1.43	$ 1.56	$ 1.60	$ 1.56	$ 1.65	$ 1.64	$ 1.54	$ 1.43	$ 1.31	$ 1.31
Unpaid labor	.14	.14	.14	.12	.12	.12	.13	.10	.11	.12
Operator(s) labor***	1.05	.99	.93	.89	.87	.97	.86	.87	.95	.98
Operator(s) mgmt. (5% of cash rec.)	.72	.76	.75	.76	.76	.72	.71	.74	.74	.81
Interest on farm eq. cap. (5%)	1.34	1.32	1.27	1.20	1.22	1.16	1.10	1.15	1.19	1.24
Total Overhead Expenses	$ 4.68	$ 4.77	$ 4.69	$ 4.53	$ 4.62	$ 4.61	$ 4.34	$ 4.28	$ 4.30	$ 4.46
TOTAL COST OF MILK PRODUCTION	$13.32	$14.82	$14.88	$14.74	$14.88	$14.30	$13.91	$13.61	$13.77	$14.91
AVERAGE FARM PRICE OF MILK	$12.81	$13.66	$13.56	$13.64	$13.49	$12.90	$12.65	$12.89	$13.03	$14.53
Return per cwt. to operator labor, capital, & management	$2.60	$1.91	$1.63	$1.75	$1.46	$1.45	$1.41	$2.04	$2.14	$2.65
Rate of return on farm eq. cap.	3.1%	0.6%	-0.2%	0.4%	-0.7%	-1.0%	-0.7%	1.9%	1.8%	3.5%

*Accrual receipts and expenses. **Increase in grown feeds, 1985-1989. ***1979 = $650/month, 1980-1984 = $750/month, 1985 = $800/month, 1986 = $850/month, 1987 = $900/month, 1988 = $1,000/month, 1989 = $1,050/month of operator labor.

Table 54. FARM RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT FOR TWO LEVELS OF MILK PRODUCTION
409 New York Dairy Farms, 1989

Item	409 Dairy Farms		238 Dairy Farms Milk/Cow <17,259#		171 Dairy Farms Milk/Cow ≥17,259#	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
ACCRUAL RECEIPTS						
Milk sales	$2,507	$14.53	$2,236	$14.59	$2,781	$14.48
Dairy cattle	212	1.23	186	1.21	238	1.24
Dairy calves	44	.25	42	.27	46	.24
Other livestock	5	.03	3	.02	8	.04
Crops	23	.13	17	.11	29	.15
Government receipts	31	.18	32	.21	30	.16
All other	36	.21	32	.21	35	.18
TOTAL ACCRUAL RECEIPTS	$2,858	$16.56	$2,548	$16.62	$3,167	$16.49
ACCRUAL EXPENSES						
Labor: Hired	$ 279	$ 1.62	$ 218	$ 1.42	$ 341	$ 1.78
Feed: Dairy grain & conc.	666	3.86	616	4.02	717	3.73
Dairy roughage	22	.13	26	.17	18	.10
Nondairy	5	.03	4	.03	5	.03
Machinery:Machine hire/ rent/ lease	26	.15	22	.14	31	.16
Mach. repairs/parts	133	.77	124	.81	142	.74
Auto expense (farm share)	8	.04	9	.06	7	.04
Fuel, oil, grease	57	.33	57	.37	58	.30
Livestock: Replacement livestock	29	.17	37	.24	20	.11
Breeding	32	.18	27	.18	36	.19
Vet & medicine	53	.30	42	.27	63	.33
Milk marketing	84	.49	80	.52	89	.46
Cattle lease/rent	5	.03	4	.03	6	.03
Other livestock expense	99	.57	88	.57	111	.58
Crops: Fertilizer & lime	87	.50	81	.53	94	.49
Seeds & plants	38	.22	32	.21	45	.23
Spray & other crop expense	36	.21	28	.18	43	.23
Real Estate: Land/ building/fence repair	47	.27	44	.29	50	.26
Taxes	61	.36	65	.42	58	.30
Rent & lease	43	.25	39	.25	47	.24
Other: Insurance	39	.23	41	.27	37	.20
Telephone (farm share)	7	.04	8	.05	6	.03
Electricity (farm share)	60	.35	57	.38	63	.33
Interest paid	183	1.06	167	1.09	198	1.03
Miscellaneous	32	.18	28	.18	36	.19
TOTAL OPERATING EXPENSES	$2,131	$12.34	$1,944	$12.68	$2,321	$12.11
Expansion livestock	23	.13	13	.09	33	.17
Machinery depreciation	144	.83	136	.88	151	.79
Building depreciation	83	.48	70	.46	97	.50
TOTAL ACCRUAL EXPENSES	$2,381	$13.78	$2,163	$14.11	$2,602	$13.57

Table 55. FARM RECEIPTS AND EXPENSES PER COW AND PER HUNDREDWEIGHT FOR TWO HERD SIZE CATEGORIES
409 New York Dairy Farms, 1989

Item	409 Dairy Farms		267 Dairy Farms with <100 Cows		142 Dairy Farms with ≥100 Cows	
	Per Cow	Per Cwt.	Per Cow	Per Cwt.	Per Cow	Per Cwt.
ACCRUAL RECEIPTS						
Milk sales	$2,507	$14.53	$2,393	$14.47	$2,579	$14.56
Dairy cattle	212	1.23	190	1.15	226	1.28
Dairy calves	44	.25	46	.28	42	.24
Other livestock	5	.03	8	.05	4	.02
Crops	23	.13	25	.15	22	.12
Government receipts	31	.18	35	.21	29	.16
All other	36	.21	26	.16	38	.21
TOTAL ACCRUAL RECEIPTS	$2,858	$16.56	$2,723	$16.47	$2,940	$16.59
ACCRUAL EXPENSES						
Labor: Hired	$ 279	$ 1.62	$ 170	$ 1.03	$ 348	$ 1.96
Feed: Dairy grain & conc.	666	3.86	633	3.83	687	3.88
Dairy roughage	22	.13	21	.13	23	.13
Nondairy	5	.03	7	.04	3	.02
Machinery:Machine hire/ rent/ lease	26	.15	25	.15	27	.15
Mach. repairs/parts	133	.77	131	.79	134	.76
Auto expense (farm share)	8	.04	11	.07	6	.03
Fuel, oil, grease	57	.33	59	.36	56	.32
Livestock: Replacement livestock	29	.17	32	.19	26	.15
Breeding	32	.18	36	.21	29	.17
Vet & medicine	53	.30	47	.28	56	.32
Milk marketing	84	.49	98	.59	76	.43
Cattle lease/rent	5	.03	5	.03	5	.03
Other livestock expense	99	.57	107	.65	95	.53
Crops: Fertilizer & lime	87	.50	86	.52	88	.49
Seeds & plants	38	.22	36	.22	40	.22
Spray & other crop expense	36	.21	31	.19	39	.22
Real Estate: Land/ building/fence repair	47	.27	45	.27	48	.27
Taxes	61	.36	70	.42	56	.32
Rent & lease	43	.25	38	.23	46	.26
Other: Insurance	39	.23	45	.27	36	.20
Telephone (farm share)	7	.04	10	.06	5	.03
Electricity (farm share)	60	.35	66	.40	57	.32
Interest paid	183	1.06	181	1.10	184	1.04
Miscellaneous	32	.18	30	.18	33	.19
TOTAL OPERATING EXPENSES	$2,131	$12.34	$2,020	$12.21	$2,203	$12.44
Expansion livestock	23	.13	9	.05	32	.18
Machinery depreciation	144	.83	165	1.00	130	.73
Building depreciation	83	.48	82	.50	84	.47
TOTAL ACCRUAL EXPENSES	$2,381	$13.78	$2,276	$13.76	$2,449	$13.82

Table 56. FARM BUSINESS SUMMARIES FOR SINGLE PROPRIETORSHIPS, PARTNERSHIPS, AND CORPORATIONS
409 New York Dairy Farms, 1989

Item	270 Single Prop.	118 Partnerships	21 Corporations
ACCRUAL EXPENSES			
Hired labor	$ 25,615	$ 25,472	$ 93,864
Feed	62,013	80,789	154,777
Machinery	20,389	25,375	50,111
Livestock	27,562	33,354	69,211
Crops	13,274	19,702	45,022
Real estate	13,273	16,788	41,049
Other	29,134	38,081	62,567
Total Operating Expenses	$191,260	$239,561	$516,601
Expansion livestock	1,236	3,747	9,634
Machinery depreciation	12,931	16,678	30,884
Building depreciation	7,011	9,394	26,039
Total Accrual Expenses	$212,438	$269,380	$583,158
ACCRUAL RECEIPTS			
Milk sales	$220,419	$291,975	$611,504
Livestock	22,841	30,705	63,624
Crops	2,358	3,862	-4,854
All other	5,258	7,835	18,963
Total Accrual Receipts	$250,876	$334,377	$689,237
PROFITABILITY ANALYSIS			
Net farm income (without appreciation)	$38,438	$64,997	$106,079
Net farm income (with appreciation)	$61,294	$91,620	$153,633
Labor & management income	$16,943	$38,295	$54,341
Number of operators	1.06	2.08	1.75
Labor & management income per operator	$15,984	$18,411	$31,052
FINANCIAL MEASURES			
Percent equity	67%	69%	73%
Debt/asset ratio - long-term	0.39	0.35	0.24
Debt/asset ratio - inter. & current	0.29	0.28	0.30
Farm net worth, end year	$395,397	$532,381	$1,056,212
Change in net worth w/appreciation	$40,507	$49,187	$84,290
Total farm debt per cow	$2,155	$2,022	$1,656
Debt payments made per cow	$474	$487	$487
Amount available for debt service	$48,932	$65,654	$148,546
Cash flow coverage ratio for 1989	1.16	1.31	2.00
BUSINESS FACTORS			
Worker equivalent	2.94	3.69	5.75
Number of cows	89	116	228
Pounds of milk sold per cow	17,082	17,232	18,227
Total tillable acres	268	368	641
Tons hay crop dry matter per acre	2.6	2.6	3.1
Tons corn silage per acre	13.7	13.0	13.0
Cows per worker	30	31	40
Pounds of milk sold per worker	518,870	542,212	722,737
Purc. grain & conc. as % of milk receipts	27%	26%	25%
Average price per cwt. milk	$14.46	$14.58	$14.71
Total cost of producing milk	$14.81	$14.70	$14.50

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

Table 57. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
51 New York Dairy-Renter Farms,* 1989

ACCRUAL EXPENSES	
Labor: Hired	$ 13,863
Feed: Dairy grain & conc.	45,871
Dairy roughage	4,368
Nondairy	47
Machinery:Mach. hire/rent/lease	2,053
Mach. repairs/parts	8,096
Auto expense (farm share)	655
Fuel, oil, grease	4,527
Livestock: Replacement lvstk.	4,181
Breeding	2,800
Vet & medicine	3,805
Milk marketing	7,205
Cattle lease/rent	947
Other livestock expense	8,231
Crops: Fertilizer & lime	5,881
Seeds & plants	2,525
Spray & other crop expense	1,872
Real Estate: Land/building/ fence repair	2,890
Taxes	1,764
Rent & lease	14,240
Other:	
Insurance	2,665
Telephone (farm share)	528
Electricity (farm share)	4,592
Interest paid	5,805
Miscellaneous	2,309
TOTAL OPERATING EXPENSES	$151,720
Expansion livestock	1,345
Machinery depreciation	10,314
Building depreciation	1,096
TOTAL ACCRUAL EXPENSES	$164,475

ACCRUAL RECEIPTS	
Milk sales	$177,260
Dairy cattle	13,261
Dairy calves	3,179
Other livestock	295
Crops	3,678
Government receipts	1,867
Custom machine work	215
Gas tax refund	182
Other	3,715
TOTAL ACCRUAL RECEIPTS	$203,652

PROFITABILITY ANALYSIS	
Net farm inc. (w/o apprec.)	$39,177
Net farm inc. (w/apprec.)	$52,315
Labor & mgt. income/farm	$27,481
Number of operators	1.28
Labor & mgt. income/oper.	$21,469
Rate of return on equity capital including apprec.	13.5%

BUSINESS FACTORS	
Number of cows	72
Number of heifers	53
Worker equivalent	2.52
Total tillable acres	226
Milk sold per cow, lbs.	16,834
Hay DM per acre, tons	2.5
Corn silage per acre, tons	13.0
Milk sold per worker, lbs.	483,545
Grain/conc. as % milk sales	26%
Feed & crop exp./cwt. milk	$4.97
Labor & mach. costs/cow	$859
Average price/cwt. milk	$14.55

ASSETS	Jan. 1	Dec. 31
Farm cash/chkg./sav.	$ 5,228	$ 4,582
Accounts receivable	17,185	22,245
Prepaid expenses	31	18
Feed & supplies	33,400	35,311
Dairy cows**	65,423	72,204
Heifers	24,009	27,548
Bulls & other lvstk.	311	548
Machinery & equip**	69,705	77,520
FLB & PCA stock	1,127	926
Other stock & cert.	3,659	4,168
Land & buildings**	11,552	12,989
Total Farm Assets	$231,630	$258,059
Nonfarm Assets****	33,309	38,667
Total Farm & Nonfarm Assets	$264,939	$296,726

LIABILITIES	Jan. 1	Dec. 31
Accounts payable	$ 3,097	$ 4,034
Operating debt	3,038	3,050
Short-term	786	833
Advanced gov't. rec.	0	59
Intermediate***	52,588	51,437
Long-term**	8,727	7,726
Total Farm Liab.	$ 68,236	$ 67,139
Nonfarm Liab.****	5,587	7,962
Total Farm & Nonfarm Liabilities	$ 73,823	$ 75,101
Farm Net Worth	$163,394	$190,920
Farm & Nonfarm Net Worth	$191,116	$221,625

*A renter owns no farm real estate at the end of year or no tillable land. **Includes discounted lease payments. ***Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ****Average of 24 farms reporting.

Table 58. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
Top 10 Percent of the Farms by Net Farm Income (without appreciation)
41 New York Dairy Farms, 1989

ACCRUAL EXPENSES	
Labor: Hired	$125,731
Feed: Dairy grain & conc.	211,061
Dairy roughage	6,098
Nondairy	273
Machinery:Mach. hire/rent/lease	8,921
Mach. repairs/parts	36,187
Auto expense (farm share)	1,415
Fuel, oil, grease	14,655
Livestock: Replacement lvstk.	7,504
Breeding	8,618
Vet & medicine	19,138
Milk marketing	19,402
Cattle lease/rent	2,476
Other livestock expense	27,127
Crops: Fertilizer & lime	25,245
Seeds & plants	12,078
Spray & other crop expense	11,866
Real Estate: Land/building/ fence repair	14,364
Taxes	13,687
Rent & lease	14,461
Other:	
Insurance	8,820
Telephone (farm share)	997
Electricity (farm share)	15,674
Interest paid	47,405
Miscellaneous	10,037
TOTAL OPERATING EXPENSES	$663,240
Expansion livestock	$ 17,457
Machinery depreciation	36,442
Building depreciation	29,482
TOTAL ACCRUAL EXPENSES	$746,621

ACCRUAL RECEIPTS	
Milk sales	$813,825
Dairy cattle	81,651
Dairy calves	13,548
Other livestock	1,928
Crops	1,295
Government receipts	8,416
Custom machine work	609
Gas tax refund	469
Other	11,161
TOTAL ACCRUAL RECEIPTS	$932,902

PROFITABILITY ANALYSIS	
Net farm inc. (w/o apprec.)	$186,281
Net farm inc. (w/apprec.)	$237,161
Labor & mgt. income/farm	$131,138
Number of operators	1.70
Labor & mgt. income/oper.	$77,140
Rate of return on equity capital including apprec.	17.44%

BUSINESS FACTORS	
Number of cows	296
Number of heifers	226
Worker equivalent	7.30
Total tillable acres	699
Milk sold per cow, lbs.	18,832
Hay DM per acre, tons	3.0
Corn silage per acre, tons	13.2
Milk sold per worker, lbs.	764,389
Grain/conc. as % milk sales	26%
Feed & crop exp./cwt. milk	$4.77
Labor & mach. costs/cow	$870
Average price/cwt. milk	$14.59

ASSETS	Jan. 1	Dec. 31
Farm cash/chkg./sav.	$ 16,874	$ 20,763
Accounts receivable	58,970	73,899
Prepaid expenses	1,926	3,014
Feed & supplies	160,030	172,638
Dairy cows*	242,055	276,940
Heifers	98,495	109,444
Bulls & other lvstk.	3,836	3,340
Machinery & equip*	236,456	268,041
FLB & PCA stock	10,206	7,482
Other stock & cert.	32,202	33,123
Land & buildings*	682,504	726,004
Total Farm Assets	$1,543,554	$1,694,688
Nonfarm Assets***	79,174	93,208
Total Farm & Nonfarm Assets	$1,622,728	$1,787,896

LIABILITIES	Jan. 1	Dec. 31
Accounts payable	$ 11,040	$ 10,388
Operating debt	36,169	44,342
Short-term	7,376	7,902
Advanced gov't. rec.	0	9
Intermediate**	257,053	255,552
Long-term*	219,798	212,907
Total Farm Liab.	$531,436	$531,100
Nonfarm Liab.***	466	1,279
Total Farm & Nonfarm Liabilities	$531,902	$532,379
Farm Net Worth	$1,012,118	$1,163,588
Farm & Nonfarm Net Worth	$1,090,826	$1,255,517

*Includes discounted lease payments. **Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ***Average of 14 farms reporting.

Table 59. FARM BUSINESS SUMMARY AND FARM FAMILY FINANCIAL SITUATION
Average of 409 New York Dairy Farms, 1989

ACCRUAL EXPENSES	
Labor: Hired	$ 29,077
Feed: Dairy grain & conc.	69,409
Dairy roughage	2,310
Nondairy	472
Machinery:Mach. hire/rent/lease	2,730
Mach. repairs/parts	13,834
Auto expense (farm share)	806
Fuel, oil, grease	5,981
Livestock: Replacement lvstk.	2,969
Breeding	3,309
Vet & medicine	5,469
Milk marketing	8,761
Cattle lease/rent	504
Other livestock expense	10,361
Crops: Fertilizer & lime	9,066
Seeds & plants	3,985
Spray & other crop expense	3,709
Real Estate: Land/building/ fence repair	4,869
Taxes	6,397
Rent & lease	4,447
Other:	
Insurance	4,081
Telephone (farm share)	702
Electricity (farm share)	6,280
Interest paid	19,029
Miscellaneous	3,340
TOTAL OPERATING EXPENSES	$221,897
Expansion livestock	2,392
Machinery depreciation	14,934
Building depreciation	8,676
TOTAL ACCRUAL EXPENSES	$247,899

ACCRUAL RECEIPTS	
Milk sales	$261,144
Dairy cattle	22,098
Dairy calves	4,552
Other livestock	554
Crops	2,421
Government receipts	3,236
Custom machine work	295
Gas tax refund	255
Other	3,147
- Nonfarm noncash capital	(-)228
TOTAL ACCRUAL RECEIPTS	$297,474

PROFITABILITY ANALYSIS	
Net farm inc. (w/o apprec.)	$49,575
Net farm inc. (w/apprec.)	$74,787
Labor & mgt. income/farm	$25,025
Number of operators	1.39
Labor & mgt. income/oper.	$18,004
Rate of return on equity capital including apprec.	9.8%

BUSINESS FACTORS	
Number of cows	104
Number of heifers	83
Worker equivalent	3.30
Total tillable acres	316
Milk sold per cow, lbs.	17,259
Hay DM per acre, tons	2.6
Corn silage per acre, tons	13.4
Milk sold per worker, lbs.	544,598
Grain/conc. as % milk sales	27%
Feed & crop exp./cwt. milk	$4.92
Labor & mach. costs/cow	$894
Average price/cwt. milk	$14.53

ASSETS	Jan. 1	Dec. 31
Farm cash/chkg./sav.	$ 6,999	$ 8,431
Accounts receivable	20,862	24,732
Prepaid expenses	240	382
Feed & supplies	50,395	53,702
Dairy cows*	93,956	105,203
Heifers	39,210	43,682
Bulls & other lvstk.	1,179	1,272
Machinery & equip.*	115,128	125,276
FLB & PCA stock	4,752	3,199
Other stock & cert.	7,799	7,922
Land & buildings*	303,909	316,233
Total Farm Assets	$644,430	$690,035
Nonfarm Assets***	71,696	75,378
Total Farm & Nonfarm Assets	$716,126	$765,413

LIABILITIES	Jan. 1	Dec. 31
Accounts payable	$ 5,960	$ 5,614
Operating debt	6,558	8,011
Short-term	2,730	2,765
Advanced gov't. rec.	4	19
Intermediate**	89,161	90,318
Long-term*	116,428	114,460
Total Farm Liab.	$220,841	$221,187
Nonfarm Liab.***	2,622	3,312
Total Farm & Nonfarm Liabilities	$223,463	$224,499
Farm Net Worth	$423,589	$468,848
Farm & Nonfarm Net Worth	$492,663	$540,914

*Includes discounted lease payments. **Includes FLB/PCA stock and discounted lease payments for cattle and machinery. ***Average of 250 farms reporting nonfarm assets and liabilities.

NOTES

APPENDIX

THE ECONOMIC ENVIRONMENT FACING NEW YORK DAIRY FARMERS

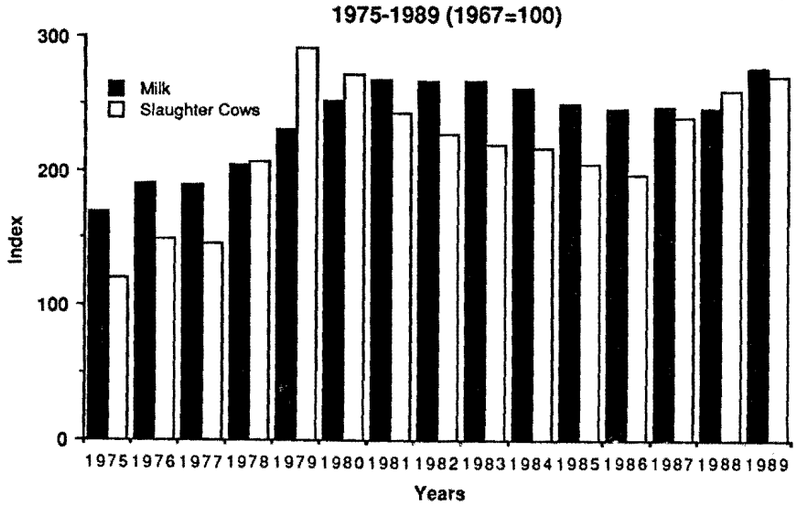
The prices dairy farmers receive for milk and slaughter cows have a major impact on dairy farm profits. Milk prices generally increased from 1975 to 1981. Annual milk prices declined from 1981 to 1986, increased slightly in 1987, and declined in 1988. The 1989 milk price averaged $1.60 per hundredweight higher than in 1988. The average monthly farm price exceeded 1988 levels during 1989. The December milk price received of $16.90 is an all time record high since monthly records began in 1909. Slaughter cow prices hit a six-year low in 1975, peaked in 1979, declined through the early 1980's, and increased in 1987-1989. The 1989 slaughter cow price averaged $1.60 per hundredweight higher than in 1988.

Table A1. PRICES RECEIVED BY NEW YORK DAIRY FARMERS, 1975-1989

Year	All Milk ($/cwt)	Slaughter Cows ($/cwt)	Monthly Farm Price of Milk ($/cwt)		
				1988	1989
1975	8.75	20.60	January	12.80	14.30
1976	9.83	25.40	February	12.50	13.90
1977	9.75	25.00	March	12.00	13.30
1978	10.50	35.30	April	11.60	12.80
1979	11.90	49.80	May	11.30	12.60
			June	11.10	12.60
1980	13.00	46.30	July	11.70	13.30
1981	13.80	41.30	August	12.50	14.10
1982	13.70	38.60	September	13.30	15.10
1983	13.70	37.20	October	14.00	16.00
1984	13.50	36.90	November	14.40	16.70
			December	14.20	16.90
1985	12.80	34.90			
1986	12.60	33.60			
1987	12.70	40.70			
1988	12.60	44.10			
1989	14.20	45.70			

SOURCE: NYCRS, New York Crop and Livestock Report.

Chart A1. PRICES RECEIVED BY NEW YORK DAIRY FARMERS, 1975-1989 (1967=100)



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.

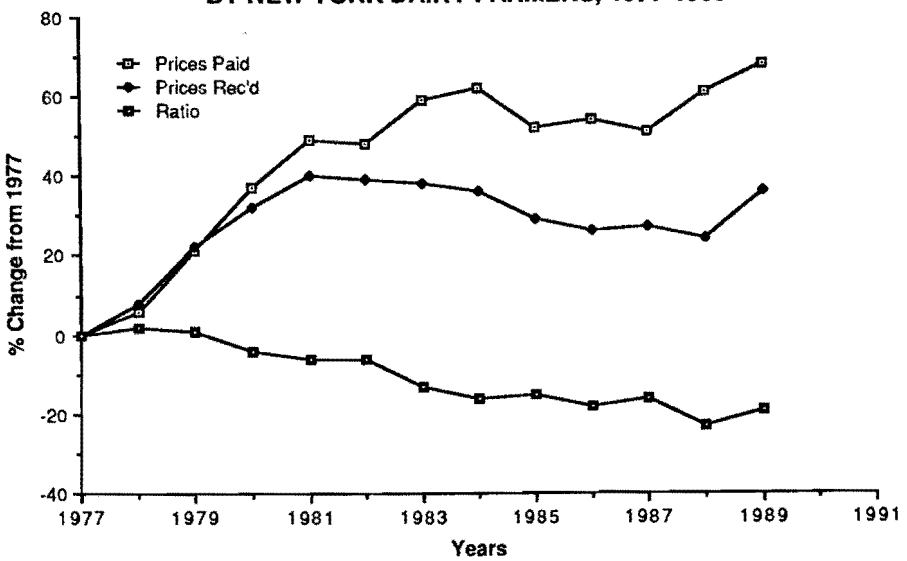
Table A2. PRICES PAID BY NEW YORK FARMERS FOR SELECTED ITEMS, 1979-1989

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)
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	180.80**	208**	64.20	0.810**	17,150	5.02***
1989	188.50**	227**	71.40	0.828**	17,350	5.25***

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, 1987, and 1989.

Chart A2. RATIO OF PRICES RECEIVED FOR MILK AND PRICES PAID BY NEW YORK DAIRY FARMERS, 1977-1989



SOURCE: NYCRS, New York Agricultural Statistics.

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

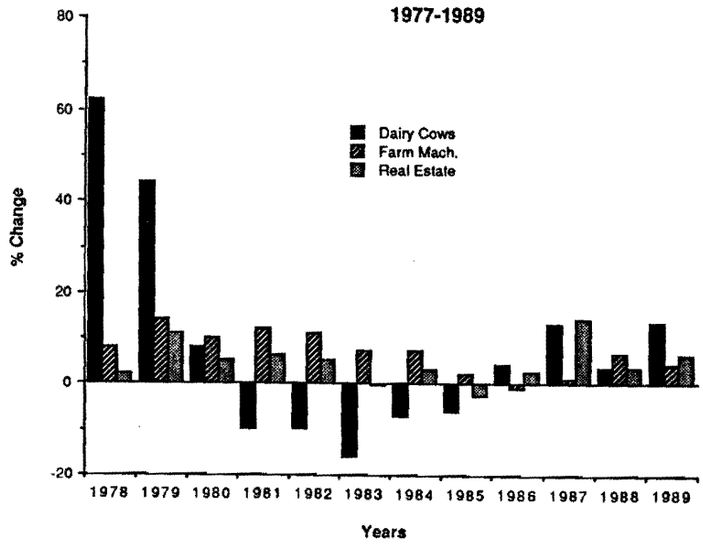
Table A3. VALUES OF NEW YORK DAIRY FARM INVENTORY ITEMS, 1977-1989

	Dairy Cows		Machinery*	Farm Real Estate	
Year	Value/Head	1977=100	1977=100	Value/Acre	1977=100
1977	$ 495	100	100	$587	100
1978	800	162	109	600	102
1979	1,150	232	121	670	114
1980	1,240	251	134	720	123
1981	1,120	226	149	773	132
1982	1,010	204	163	821	140
1983	850	172	173	817	139
1984	790	160	181	848	144
1985	740	149	181	820	140
1986	770	156	179	843	144
1987	870	176	181	960	164
1988	900	182	193	993	169
1989	1,020	206	201	1,053	179

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

Dairy cow prices turned up in 1986 after declining for five consecutive years. The December 1989 value per head averaged $120 higher than in December 1988. New machinery prices have increased since 1977 with a slight decline in 1986. The 1989 prices increased 4.1 percent over the 1988 level. Farm real estate values continue to strengthen. All of these changes are associated with the gradual improvement in economic conditions on dairy farms.

Chart A3. ANNUAL CHANGES IN DAIRY COW, FARM MACHINERY, AND FARM REAL ESTATE VALUES, NEW YORK DAIRY FARMS 1977-1989



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

Other Agricultural Economics Research Publications

No. 89-25	Incorporating Price Expectations in the Development of a Processor Level Econometric Model of the U.S. Honey Industry for Policy Analysis	Mary K. Smargiassi Lois Schertz Willett
No. 89-26	Annotated Bibliography of Generic Commodity Promotion Research	Susan Hurst Olan Forker
No. 90-1	Quarterly Northeast Farmland Values, 1985 Through 1989	Loren W. Tauer
No. 90-2	A User's Guide to NEMPIS: National Economic Milk Policy Impact Simulator	Harry M. Kaiser
No. 90-3	1990 Budget Guide, Estimated Prices for Crop Operating Inputs and Capital Investment Items	Darwin P. Snyder
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