BEEF FARM BUSINESS SUMMARY

September 1990

A.S. Mimeo 143
A.E. Ext. 90-24

1989 New York Beef Cow-Calf Farm Business Summary

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Introduction

The Beef Farm Business Summary is a compilation and analysis of business records from participating cow-calf farms. The farm summaries provide the basis for continued extension education programs, data for applied research studies, and for use in the classroom. The primary objective, however, is to provide producers with information about their beef farm business that can be used to identify "weak links" that limit profitability. To facilitate this evaluation, analysis is provided with six "critical success factor" categories; size of business, rates of production, cost control, capital efficiency, profitability and financial integrity. Regardless of the use of the data, confidentiality of individual farm data is maintained.

The following farm business summary was compiled in 1989 by the Department of Animal Science in conjunction with the Department of Agricultural Economics, using data submitted by thirty-two farmers. All of the thirty-two farmers providing farm records are located in New York State across 19 different counties. Summaries were collected from farms with a variety of resources and management objectives. Data was collected for the calendar year 1989. All of the producers have a cow-calf component in their operation. Some sell all calves at weaning, others feed out some or all of their calves to a finished weight.

These thirty-two farms are not a scientific sample and are not necessarily representative of New York beef farms. The averages published in this report are not intended to represent the average of all beef farms and should not be interpreted as such. The averages are calculated to provide the cooperators with a comparison when analyzing their own records. The purpose of the Beef Farm Business Summary is to present the cooperators and other beef producers with a format for summarizing and analyzing their business and to offer some data which may be useful to potential beef producers and Cooperative Extension agents.

The Beef Farm Business Summary was made possible by help from Cooperative Extension agents Michael Baker, Carl Crispell, Thomas Gallagher, Lou Anne King, Craig Trowbridge, David Weaver, Paul Westfall and Alan White. Thank you also to the participating beef producers. Without their kind cooperation, the Beef Farm Business Summary would not be possible.

Accrual 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 pages 17 and 18. Five measures of farm profits are calculated on pages 21. The balance sheet is on page 23 and the cash flow statement is featured on pages 27 and 28. Throughout the document key phrases are underlined to help the reader locate specific information in the text.

Economic Factors Affecting New York Beef Producers

The beef industry is cyclic. The time between price high points has historically been 10-12 years. The primary reasons for the cattle cycle are lags inherent to individual decision making and the lag time between industry entry and production.

As prices start to climb from a price trough, producers are encouraged to expand production by using all available heifers for breeding stock. Holding back heifers and cull cattle reduces the number of animals available for slaughter. This decrease in beef production tends to push prices higher. As prices increase, herd building intensifies and beef production is constrained even more causing beef prices to climb still higher. Eventually, this process moves the cow herd and total cattle numbers to a point where the number of cattle produced for slaughter exceeds consumer demand. Beef prices begin to decline. As prices decline, herd building turns into herd liquidation. Heifers are no longer held and cows from the expanded herd are slaughtered. Beef prices and cow numbers both decline.

The cattle cycle is a result of the highly competitive structure of the beef industry. Many small producers acting independently create the cycle. The length of the cycle depends on both biologic and psychological factors. It takes at least two years from the time a heifer is first bred until her calf is ready to slaughter, creating a lag between when heifers are saved back until their calves reach slaughter.

During all the phases of the cattle cycle there is a lag in the producers response to changes in the market. At the bottom of the price cycle, the producers may be somewhat wary of the past low prices and are reluctant to increase their herd. Some time into the price recovery, the "in-and-out" individual may start into production. After the cycle has peaked and prices are decreasing, producers may continue to hold cow numbers up hoping for a price recovery, until the price drops sufficiently for panic to cause widespread selling. These response lags explain why the building phase of the cycle can last six to eight years and the liquidation phase can last three to four years.

By watching the cattle cycle closely, a producer can benefit from an increasing market and cut losses in a declining market. While prices are high, the producer can cull from the herd any marginal cows and heifers. During the down phase, the producer can build cow numbers and have a efficient number of producing cows when the market turns up again.

The beef cycle reflects the relationship between prices, finished cattle supplies and the number of cows and heifers held for breeding. Other factors affecting the price of beef include cattle slaughter characteristics (size and mix), consumer demand, cost of production, farm to retail margins, world trade, market psychology and weather.

The USDA's Economic Research Service reported that 1989 was a pivot year in the cattle cycle. The modest expansion of the cattle herd in 1989 signaled the end of the liquidation phase of the seventh cattle cycle since 1928[1]. The cycle 1979-1989 was an unusual one in that the herd expansion phase lasted only 3 years and the herd expanded only 4.5 % as compared with an average herd expansion of 22 percent over 6 to 8 years. The 1979-1989 herd liquidation phase lasted seven years with a 16 percent decline in the nation's cow herd. This compares to a typical liquidation of ten percent over 3 to 4 years. Figure 1 shows the U.S. Cattle and Calf Inventory in million head from 1930 to 1990. The beef cow inventory increased from the beginning to end of 1989 by 1 percent. The beef heifer numbers were almost unchanged in 1989. New York, however, did not follow the national cow inventory trend. The New York State Beef Cow inventory at the end of 1989 was 75,000 head, five percent lower than the previous year[2].

The unusually long liquidation phase of the 1979-1989 cattle cycle is due to several factors. Capital acquisition has been difficult for some producers because of equity and bank problems in 1986 and 1987. Tax reform has discouraged some producers from expanding herds. Drought conditions in many areas from 1986-1988 tended to keep the beef herd sizes down. In 1989 the price received for feeder and finished cattle continued strong. In 1989 Choice Omaha steers (1000-1100 lb.) averaged $ 72.52/cwt., an increase of $ 2.98 from 1988 averages. Figure 2 shows national average beef prices received for beef calves, steers and cows. The New York State average price for all steers and heifers marketed in 1989 was $57.00 per hundredweight. This is a 7 % increase from 1988. Medium frame steers going to the New York Teleauction Graded Feeder Sale in October 1989 ranged in price from $ 87 to $ 90.50 per hundredweight.

The beef cycle is also affected by changes in the demand for beef. The per capita consumption of beef has declined from 78 pounds in 1979 to an estimated 1989 consumption of 73.4 pounds. The shift in consumer preference from beef to poultry is due to a variety of factors including diet and health concerns over fat and cholesterol and consumer demand for convenience foods. However the impact on beef demand from changing tastes and preferences is minor when compared to the response to price differences between beef and poultry. In 1970 the beef price was approximately twice that of broilers. By 1988 the beef prices was three times the price of broilers (figure 3). Recent research indicates that if beef production costs were lowered the consumption response would expand the industry significantly. Drover's Journal quoted University of Chicago economist D. Gale Johnson : "If the beef industry can lower retail beef prices to 2.5 times the cost of poultry, the consumption would increase 5 to 10 pounds (per capita)[3]."

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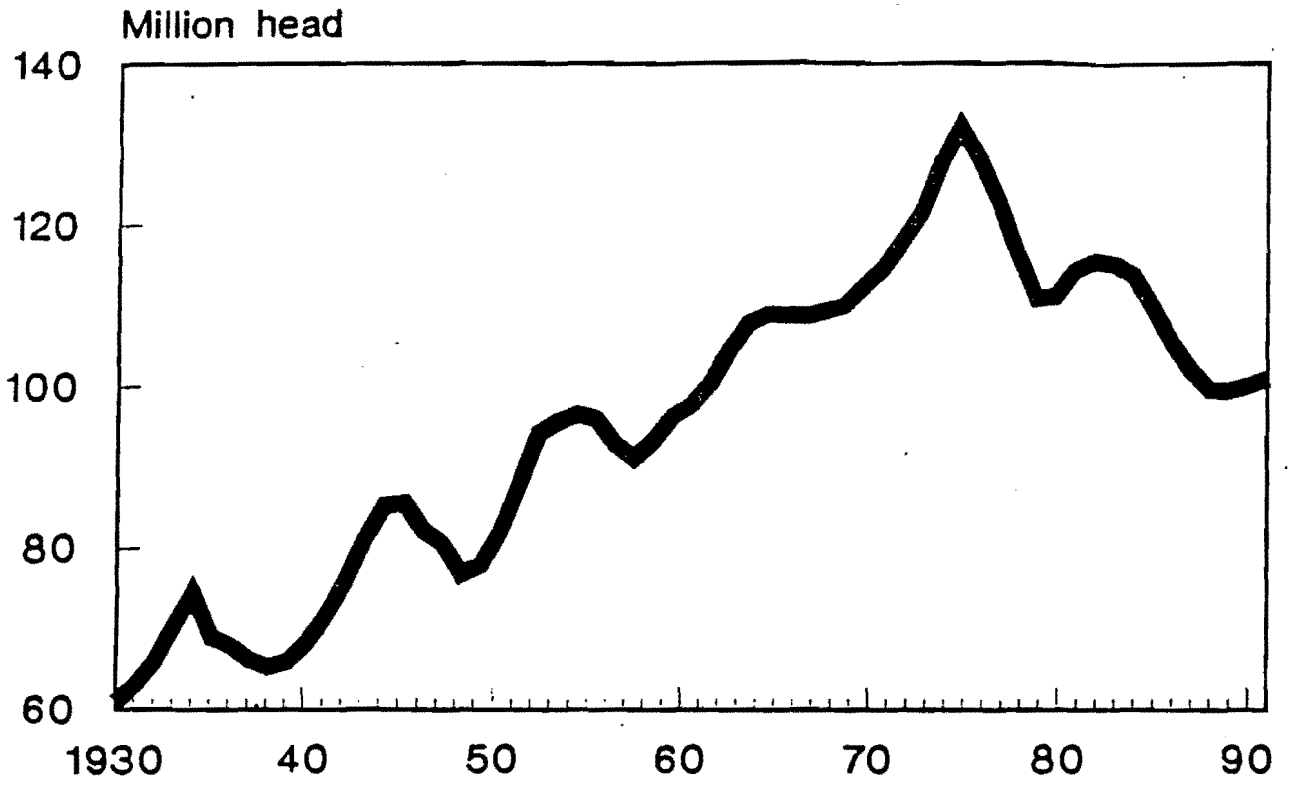
[1] Livestock and Poultry Situation and Outlook Report. United States Department of Agriculture Economic Research Service. February 1990. LPS-40.

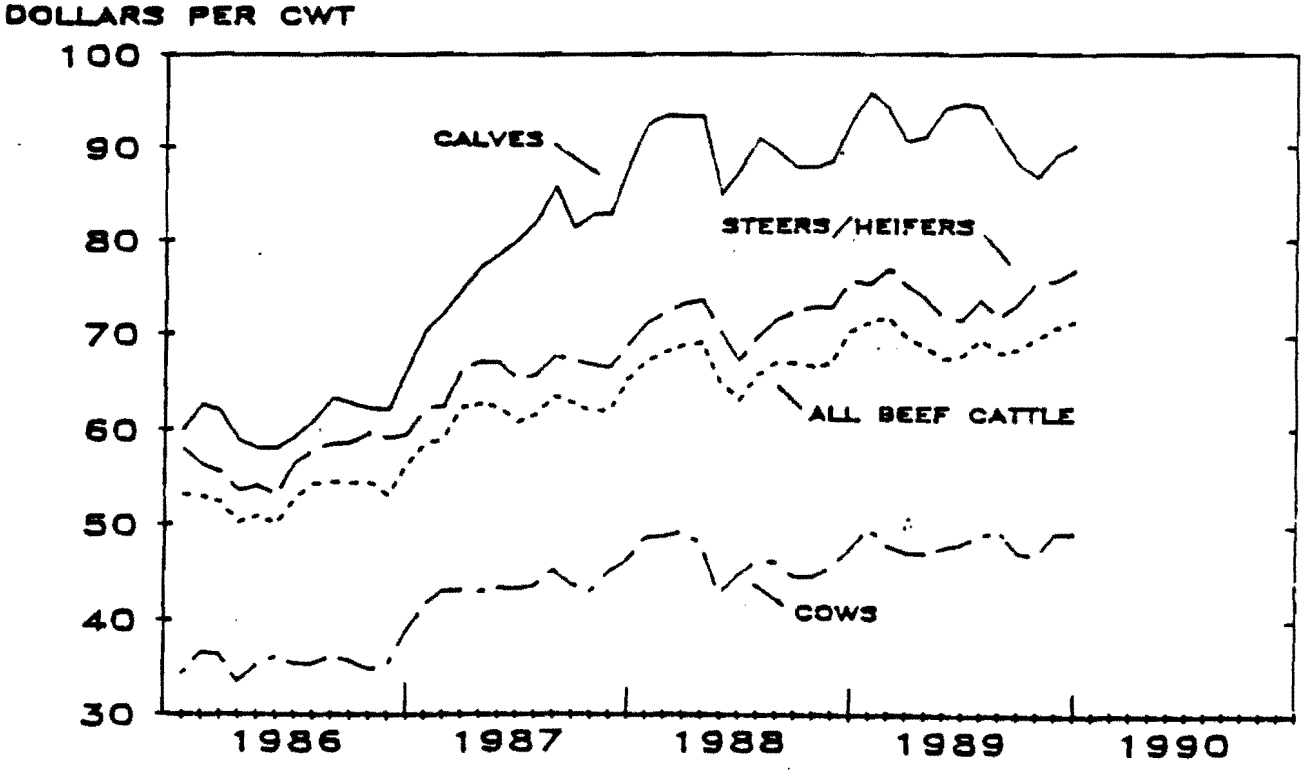
[2] Cattle. New York Agricultural Statistics Service. April 13, 1990. No. 976-1-90.

[3] Drovers Journal. October 19, 1989. Number 18.



Source: USDA, ERS. February 1989. Outlook '90 Charts.
66th Annual Agricultural Outlook Conference. AGES 9001.

Figure 2. Beef Prices Received by Farmers, U.S. (Dollars per cwt.)



The price for beef is also affected by the world market's supply and demand. In 1989, beef and veal exports reached a record 1.07 billion pounds, up 46 percent from 1988 due largely to an increase in the Japanese market. The United States imported about 2.1 billion pounds of beef and veal in 1989. This was a decline in the import level of about 8 percent from 1988.

Recent studies indicate that demand for beef stabilized during 1989. The decrease in demand for beef has moderated in response to increasing disposable income, promotion and research showing that nutritional objections to beef have been overstated. Programs funded by beef check-off dollars have improved the price of fed cattle modestly ($1.00-2.30/cwt).

Strong cattle prices and relatively low feed prices in 1989 resulted in the fourth year that budgeted cash returns for cow-calf producers were positive, figure 4. However, calculated cash returns per cow in 1989 were below 1985-1987 returns. In 1989 the USDA reported that there were 949,640 farms with beef cattle. This number was down 2 percent from 1988. The average number of cows per operation is 35.5 cows.

In Summary:

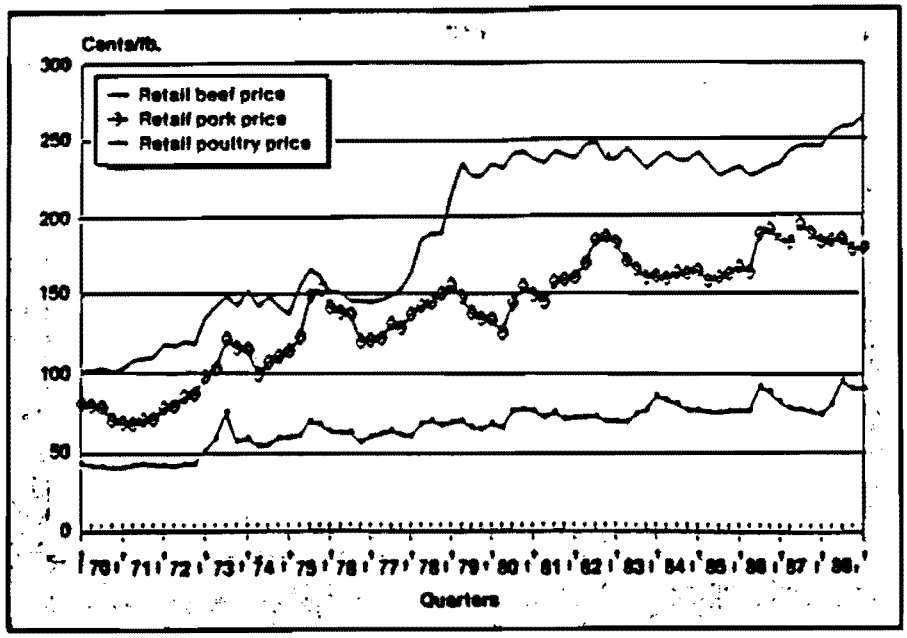
1) Beef prices are cyclic in response to supply of beef available and the demand for beef by domestic and foreign consumers.

2) 1989 was a turning point year in the cattle cycle with the beef herd inventory increasing for the first time since 1981.

3) In 1989 fed cattle and feeder cattle prices increased slightly from 1988.

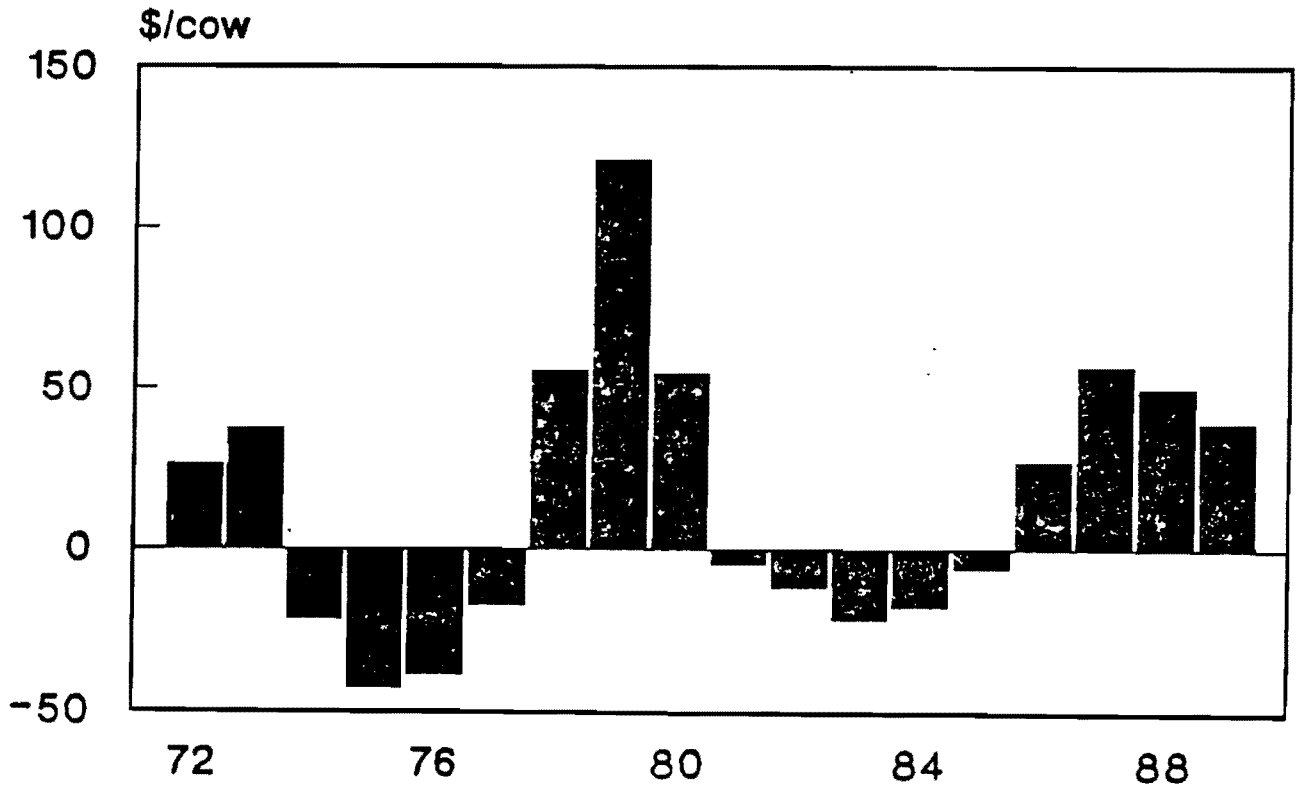
4) Over the past ten years, beef demand has decreased due to several factors including the price of beef relative to alternative meats. Increased production efficiency leading to lower beef production costs will increase beef's market share and increase returns to the beef industry. The demand for beef tends to be stabilizing.

Figure 3. U.S. Retail Prices for Beef, Pork and Poultry



Source: Drover's Journal. October 19, 1989 number 18.

Figure 4. Returns to Cow-calf Producers, U.S., $/cow



Source: USDA, ERS. February 1990. Outlook '90 Charts.
66th Annual Agricultural Outlook Conference. AGES 9001.

Summary of the Farm Business - Selected Factors

Selected farm business summary factors include the size of the farm business, rates of production, cost control, capital efficiency, profitability, return on equity and financial summary. The average and the range values for selected business factors are presented in Table 1. Average values for 1988 data and average and range values for 1989 data are shown. All of the twenty-three farms participating in the 1988 summary and the thirty-two farms participating in the 1989 summary are included in the values in Table 1. This table gives a broad view of the business performance of all of the participating farms. Table 2, Selected Performance Factors, 1988 and 1989 for the Same Seventeen Farms, demonstrates the changes from one year to the next in the annual performance of the seventeen farms who participated in both years.

Definitions of Selected Business Factors

The average number of cows is the mean number of open and bred cows held during the year ([open and bred cows as of January 1 plus open and bred cows as of December 31]/2). The average number of heifers and average number of bulls is computed in the same way. The % calves weaned is calculated by dividing the total number of calves weaned by the sum of the total number of calves born, plus calves purchased as a cow-calf pair less calves sold as a cow-calf pair. The % calves born is calculated by dividing the total number of calves born alive by the total of pregnant cows in the herd plus pregnant cows purchased less pregnant cows sold. The average wean age is the average number of days between birth and weaning. Cost control, capital efficiency, and profitability measures given on a per cow basis use the average number of cows (as defined above) as the denominator.

Purchased feed/cow is the sum of beef grain purchased and beef roughage purchased, on an accrual basis, per cow. Hired labor and machinery cost per cow is calculated as the sum of accrued expenditures for hired labor, machinery repair, farm auto, machinery hire and lease, machinery depreciation and an interest charge of five percent on the average machinery investment. The interest charge represents the opportunity cost of the dollars invested in machinery. Hired Labor, machinery and crop cost per cow is the sum of: hired labor and machinery cost per cow (as defined above), accrued fertilizer & lime and accrued seed, spray and other crop expenses.

All of the capital efficiency measures are averages of the beginning and end of the year. Assets are valued on a market value basis for calculation of capital efficiency measures. The profitability measures are shown in table 7. Details concerning profitability analysis are in the "Profitability Measures" text, page 21. Farm net worth is the total market value of assets less liabilities as of December 31. The debt to asset ratio is the total number of dollars of debt per each dollar of assets. Farm debt per cow is the December 31 total liability value divided by the total number of open and bred cows as of December 31.

Table 1.

Selected Business Factors, 1988 and 1989, All Farms

Item	1988 Average	1989 Average	1989 Range
Number of Farms	23	32	
Size of Business			
Average number of cows	33.9	38.7	5.0 - 107.0
Average number of heifers	7.5	9.5	0 - 43.5
Average number of bulls	2.5	3.7	0 - 31.5
Total lbs. weaned	13,944	16,823	1,100 - 52,200
Rates of Production			
% Calves weaned	92.3	96.5	85 - 100
% Calves born	92.2	94.4	73 - 100
Average weaning weight,lbs.	549	514	400 - 683
Average wean age, days	207	208	137 - 300
Cost Control			
Purchased feed cost/cow	$ 178	$ 99	$ 0 - 501
Hired Labor & Mach. cost/cow	323	312	49 - 877
Hired Labor,mach.& crop cost/cow	392	361	87 - 902
Capital Efficiency (average for year)			
Mach.& equip. investment/cow	$ 1,247	$ 1,145	$ 243 - 4,845
Real estate investment/cow	8,356	6,667	0 - 52,500
Total capital investment/cow	11,194	9,405	1,658 - 57,673
Profitability			
Net cash farm income	$ 595	$ (2,321)	$ (64,615) - 27,762
Net farm income w/o appr.	(4,594)	(541)	(37,569) - 58,434
Net farm income w/ appr.	4,815	7,037	(35,114) - 65,656
Financial Summary			
Farm Net Worth (12/31)	$ 226,975	$ 284,347	$ 27,870 - 1,417,058
Debt to asset ratio	.13	.08	0 - .32
Farm debt per cow	$ 1,085	$ 750	$ 0 - 3,978

Analysis of Selected Business Factors

The selected business factors shown in Table 1 are a one page synopsis of the farm business's size, productivity and profitability. Averages are shown for the 23 farms participating in the 1988 summary and averages and ranges shown for the 32 farms participating in the 1989 business summary. Seventeen farms participated in both studies. Be careful when comparing changes in business factors in Table 1 from one year to the next. With the small number of farms involved, most large changes between 1988 and 1989 are due to the economic profiles of the individual farms involved and not changes in the beef industry. To compare specific year to year differences in the farms, see Table 2, Selected Performance Factors, 1988 and 1989 for the Same Seventeen Farms.

In 1989, the average number of cows on the thirty-two farms was 38.7 with a range of 5 to 107. The reproductive efficiency of the farms tended to be very good with Percent Calves weaned and Percent calves born averaging 96.5 % and 94.4 % respectively. Eighteen farms weaned 100 % of their calves born and fourteen farms had 100 % live calf births.

There was a large variation between the farms in the economic factors: cost control, capital efficiency and profitability. This variation was evident in the cost control measures where purchased feed per cow varied from $ 0 to $ 501 per cow and hired labor and machinery cost varied from $49 to $902 per cow. Hired labor and machinery cost tended to be related to farm size with the smaller farms having the highest machinery and labor cost per cow. This reflects the fixed component of investment in machinery required for a farming operation.

Capital efficiency is an important factor in the operation of a beef cow calf enterprise. As cow calf businesses tend to be labor and capital extensive with a small profit margin, over capitalization can be devastating to the health of the business. The cow calf industry is, however, prone to this problem partially because many part time producers, under a time constraint, need reliable equipment. The machinery and equipment investment per cow ranged from $243 to $4,845.

Four of the farms in the summary described beef as not their primary farm enterprise. Twelve of the farms had some income from crop sales. The average cash crop income for these farms was $ 7,500. The farms who had a cash crop enterprise had a higher machinery investment/cow ($1,442) than the twenty farms which did not sell any crops off of the farm ($996). Of the average total capital investment per cow of $9,405, 71 percent or $6,667 was real estate investment. The real estate investment per cow varied from $0 to $52,500.

Net cash farm income, which is farm cash receipts less farm cash expenses and purchased breeding stock, is the money available to make principle payments, capital purchases and contribute toward family living and savings. Average net cash farm income for 1989 participating farms was negative $2,331. Net farm income, calculated on an accrual basis, includes depreciation of buildings and machinery and changes in inventory. Average net farm income for the thirty-two farms was negative $541. Net farm income with appreciation is the total farm accrual receipts less total farm accrual expenses plus livestock, machinery and real estate appreciation. Appreciation represents the change in farm inventory values caused by changes in prices during the year. Appreciation is included in Net Farm Income in order to reflect the entire change in farm net worth. The average Net Farm Income including appreciation was $ 7,037.

Farm net worth is the market value of all farm assets less all farm debt. The average farm net worth for the thirty-two beef farms was $ 284,347. The debt to asset ratio indicates that on the average for every $1.00 of farm assets there is $ .08 of farm debt. The average farm debt per cow on December 31, 1989 was $750. The debt level of the beef farms participating in the beef farm business is relatively low for an agricultural business. The debt to asset ratio and debt per cow for the 1989 New York State Dairy Farm Business Summary was .32 and the average farm debt per cow was $ 2,048.

Selected Performance Factors for the Same Seventeen Farms

Definitions of Selected Performance Measures, Same Farms

The Selected Performance Measures shown in Table 2 are similar (and for some items the same) as the Business Measures listed in Table 1. The measures in Table 2 are selected to be used as a diagnostic tool to compare the performance of these farms from one year to the next. Where possible measures are in a "per unit" basis, ie. per cow and per acre. This allows comparison of different size farms. The right hand column is left blank for you to fill in your farm's values. Listed under the "Page" column in Table 2 is the page number of your Individual Farm Business Summary that the value listed under "Item" appears.

The values in table 2 are averages for the same seventeen farms that participated in both the 1988 and 1989 Beef Farm Business Summary. Each of these measures is also included in other tables in this publication and described in greater detail in those areas.

The size of business and investment/cow measures are described above (Analysis of Selected Business Measures). Capital Turnover is the average farm assets divided by the annual farm accrual receipts. Capital Turnover shows the number of years of farm receipts required to equal or "turnover" the average capital investment.

Total Accrual Receipts/cow is the sum of cash farm receipts adjusted for changes in inventory and accounts payable divided by the sum of all open and bred cows. The other "per cow" values are calculated in the same way. Accrual Operating Expenses are all accrual farm business expenses except breeding stock purchases and depreciation. Breeding stock purchases, building and machinery depreciation are added together. The Net Farm Income is total accrual receipts less total accrual expenses (including breeding stock purchases and depreciation). This value does not include appreciation. See pages 17 and 18 for more detail about accrual receipts and expenses.

Debt Payment as a Percent of Total Cash Receipts is calculated: Total Debt Payment (interest plus principal) paid during the year divided by the total cash receipts received for the year. Net Non-farm Contribution to Farm is the cash required by the farm from non-farm sources to meet farm cash requirements for operating expenses, debt payments, and capital purchases.

Marketing indicators include the average feeder calf price received and average finished cattle price received in dollars per hundredweight. Three crop production measures are included: Tons hay crop dry matter per acre; Direct crop expenses/crop acre; and Purchased feed/cow. Direct crop expenses included the accrual expenses for fertilizer, lime, seed, spray and other crop expenses divided by the total number of crop acres. The Purchased feed cost/cow is purchased beef grain and roughage per cow on an accrual basis. These three measures together indicate cropping system performance, costs and the alternative cost of purchased feed.

Table 2. Selected Performance Factors, 1988 and 1989 for the Same Seventeen Farms

Item	Page*	1988 Average	1989 Average	Your 1989 Value
Size of Business				
Average Number of Cows	1	38.1	38.0	
Total lbs. Weaned	1	15,144	17,891	
Capital Efficiency				
Farm Capital Investment/cow	8	$ 11,773	$ 10,165	
Real Estate Investment/cow	8	$ 9,471	$ 7,808	
Machinery & Equip. Inv./cow	1	$ 960	$ 915	
Capital Turnover, years	8	12.3	12.5	
Profitability				
Total Accrual Receipts/cow	3	$ 726	$ 717	
Total Accrual Oper. Exp/cow	2	$ 727	$ 614	
Breeding Stock & Depreciation/cow	2	$ 134	$ 114	
Net Farm Income/cow	**	$ (135)	$ (11)	
Debt Payment & Cashflow				
Total Debt Payment/cow	5	$ 185	$ 191	
Debt Payments as a Percent of Total Cash Receipts	5	30 %	37 %	
Net Nonfarm Contribution to Farm	6	$ 3,134	$ 3,698	
Marketing				
Average Feeder Price Received/cwt	7	$ 86.18	$ 74.33	
Average Finish Cattle Price/cwt	7	$ 64.93	$ 72.17	
Crop Production & Purchased Feed Costs				
Tons hay crop dry matter/acre	7	1.9	1.9	
Direct crop expenses/crop acre	7	$ 28.45	$ 16.83	
Purchased feed cost/cow	1	$ 85	$ 118	

* Page number of the Individual Beef Farm Business Summary where Performance Measure is located.

** Net Farm Income/cow = Total Accrual Receipts/cow (page 3) - Total Accrual Expenses/cow (page 2).

Analysis of Selected Performance Factors, Same Farms

The performance of these seventeen farms has not changed dramatically from 1988 to 1989. The biggest changes were in Capital Investment and herd productivity measures. Even though the number of cows was practically the same in 1988 and 1989 (38 cows), the total quantity of weaned calves increased by 2,747 pounds. The average weaning weight per calf actually decreased in by 24 lbs. from 563 lbs. in 1988 to 539 in 1989. However the calf death loss was lower in 1989. Of the cow conceiving, the percentage who gave birth to a live calf was 91 and 98 percent respectively in 1988 and 1989. Likewise of those calves born the percentage surviving to be weaned was 92 and 94 percent in 1988 and 1989.

The average capital investment per cow decreased $ 1608 or slightly more than 13 percent. The real estate investment per cow was down more than seventeen percent. However, the time required to payback capital purchases from operating receipts (capital turnover) was slightly greater in 1989 than 1988. This is due to a decrease in receipts in 1989. Both accrual receipts and expenses were slightly lower in 1989 when compared to 1988. The net farm income per cow improved in 1989. For every cow, the average farm spent $ 135 more in 1988 for operating expenses, breeding stock purchases and depreciation than they received from operating receipts. In 1989, the average of the seventeen farms was still operating at a net loss but the deficit was reduced to $ 11 per cow.

Debt payments per cow increased marginally in 1989 from $ 185 to $ 191. Debt payment as a percent of total receipts also increased from 30 to 37 percent. This increase was enlarged by the decease in 1989 receipts. The average non-farm contribution to the farm's cashflow increased in 1989 by $ 564.

The average price received for feeder and finished cattle varied considerably from year to year. In 1988, the average producer sold 10 feeder calves weighing 495 lbs. for $ 86 per hundredweight and 11 finished cattle weighing 894 lbs. for $ 65 per hundredweight. In 1989, the average producer sold 17 feeder calves weighing 537 lbs. for $74 per hundredweight and 7 finished cattle weighing 989 lbs. for $ 72 per hundredweight.

The hay production measured in tons of dry matter per acre was exactly the same for the two years, 1.9 tons dm/acre. The hay crop production for participating beef producers tends to be low compared to New York State average yield of 2.29 tons per acre[4]. This is probably because the producers take only one cutting of hay and pasture the acreage for the rest of the growing season. In the 1988 season the seventeen farms summarized in this table, grew hay and corn on a total of 103 acres. In 1989 the same farms produced hay, corn and oats on a total of 114 acres. The direct crop expense per acre decreased in 1989 by $ 11.62. A partial explaination may be due to the increase in crop acres worked. The purchased feed cost/cow increased in 1989 by $ 33 per cow. The summer of 1989 was unusually wet and resulted in poor hay yields and quality in many areas of New York State. The total accrual forage purchased increased from $ $ 708 in 1988 to $ 836 in 1989. The grain purchased increased from $ 2,385 in 1988 to 2,868 in 1989.

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[4] New York Agricultural Statistics 1988-1989. New York Department of Agricultureand Markets. July 1989.

Business Characteristics and Resources Used

Some major business characteristics are shown in Table 3. Eighteen of the farms are part time business and fourteen are full time. The average farm tenure is over 13 years. Sixteen of the thirty-two producers use artificial insemination for part or all of their herd breeding. Twenty-eight of the producers indicated beef was the primary farm enterprise. Most of the farm businesses use an manual account book for recordkeeping.

Table 3.
Business Characteristics of Thirty-two New York Beef Farms, 1989

	Number of Farms		Average Years
Full Time Business	14	Farmer has operated farm	13.0
Part Time Business	18	Has owned beef herd	12.5
Beef Primary Enterprise	28		
Beef Non Primary Ent.	4		
Business Type			
Single Proprietor	28		
Partnership	3		
Corporation	1		
Record Keeping System			
Account Book	24		
Check-Write System	4		
On-farm Micro Computer	4		
AI Used	16		

Land, labor and animal resources used in the farm business are listed in Table 4. Labor is measured in months. In this analysis 200 hours is considered one month of labor. Land use and herd size averages include only those farms reporting a value for the item. The range is of all farms. The total worker equivalent of 15.1 is the months of labor per year required to operate the average beef enterprise in the 1989 study. This value is equivalent to one full time person working 200 hours each month of the year and a second person working 200 hours/month for 3 months.

Table 4.

Resources Used on New York Beef Farms, 1988 and 1989

Item	Average 1988	Average 1989	Range 1989
Number of farms	23	32	
Land Used			
Total Acres			
Owned	165	219	0 - 1,166
Rented	94	124	0 - 683
Tillable Acres			
Owned	61	79	0 - 400
Rented	63	77	0 - 500
Total Tillable	124	156	0 - 900
Pasture Acres			
Owned	60	70	0 - 800
Rented	26	37	0 - 450
Total Pasture	86	107	0 - 800
Herd Size			
Average Number Cows	33.9	38.7	5 - 107
Average Number of Cows, Bulls & Heifers	43.9	51.9	7 - 169.5
Labor (months)			
Operator(s)	8.17	9.93	4 - 25.7
Hired Labor	2.14	2.04	0 - 27.3
Family Unpaid	1.65	2.75	0 - 34.0
Total Worker Equivalent	12.11	15.12	1.83 - 61.09

Farm Income

Cash receipts, change in inventory, changes in accounts receivable, accrual receipts and accrual receipts per cow are listed in Table 5. Cash receipts include the actual amount of cash received for farm products, services and government payments. Accrual Receipts represent the value of all farm production and services actually provided during the year. Increases in livestock inventory caused by herd growth are included as accrual receipts under the changes in inventory column. Decreases in inventory caused by herd reduction are deducted. The change in inventory column does not reflect changes in inventory due to price changes (appreciation). A positive change in crop inventory is shown if there is an increase in grown feeds in inventory from the beginning to the end of the year. The Farm Statement of Net Worth (page 23) and Value of Beef Inventory (page 33) present the details concerning changes in inventory.

The changes in accounts receivable column adjusts accrual income to exclude cash received in this year for goods which changed ownership in a previous year and include income from the current years sales that has not been received. An increase in accounts receivable will increase the accrual receipts accordingly. A decrease in accounts receivable will decrease accrued receipts. Accrual receipts per cow are calculated by dividing the sum of accrued receipts from all farms by the total number of cows on all farms.

Non-farm receipts such as off-farm income are excluded from the farm income statement. Gas lease payments and other payments attributed to the farm land base are included as miscellaneous receipts. Ten of the farms sold only feeder calves, seven farms sold feeder calves, finished and breeding cattle. Seven farms sold feeder calves and breeding stock; six sold feeders and finished cattle; one farm sold only finished cattle and one farm didn't have any cash cattle sales. The accrual receipts are greater than the cash receipts because of the inventory adjustments reflecting increases in the cattle, crop and other livestock inventories.

Table 5.

Farm Income, Average of Thirty-two New York Beef Farms, 1989

Item	Cash Receipts	Change in Inventory	Change in Acct's Rec'bl	Accrual Receipts	Accrual per cow[5]
Feeder calf sales	$ 7,762	$ 118	$ 34	$ 7,914	$ 205
Finished cattle	4,234	558	0	4,792	124
Breeding stock	3,831	3,650	(63)	7,418	192
Cull cattle	2,236		0	2,236	58
Other livestock	39	25	0	64	2
Crop Sales	2,813	1,306	28	4,147	107
Custom work	589		0	589	15
Government payments	1,768		0	1,768	46
Misc. receipts	1,317		0	1,317	34
Total Cash Receipts	$ 24,589				
TOTAL ACCRUAL RECEIPTS		$ 5,657	$ (1)	$ 30,245	$ 783

Farm Expenses

Cash Expenses are those farm expenses which were paid for in 1989. Accrual Expenses include the costs of inputs actually used in the year's production. The value of purchased feeds and supplies used out of the farm inventory are included as a cost. Charges for items purchased but not paid for in 1989, shown as an increase in accounts payable, are included in accrual expenses. Conversely, decreases in accounts payable, items purchased in previous years and paid for in 1989, decrease accrual expenses. Accrual expenses/cow are calculated by dividing the sum of accrued expenses from all farms by the total number of cows. Farm business expenditures are grouped into seven major categories.

Hired labor expenses include wages, social security paid on labor, worker's compensation insurance, unemployment insurance, and privileges purchased for hired labor.

Feed costs include beef grain and concentrate, beef roughage and other livestock feed. Beef grain and concentrate includes concentrates, minerals, protein, and grain purchased for the beef herd. Hay and silage purchased for the beef herd is entered as beef roughage purchased. All feed purchased for non-beef livestock is included in other livestock feed.

Machinery costs represent all the operating costs of using power machinery on the farm. Ownership costs such as depreciation and interest on investment are excluded here but are included in the machinery cost measures in Selected Factors, Table 1.

[5] Sum of total Accrual Receipts / Sum open and bred cows on all farms.

Livestock expenses include the cost of supplies and services directly associated with the care and maintenance of the beef herd. Breeding expenses include purchased semen, artificial breeding supplies, and pregnancy exams. Feeders and stockers purchased are the cost of cattle purchased that are purchased for resale not for breeding stock. Marketing, and other beef expenses include trucking, marketing fees, commissions, advertising, bull test fees, ID tags, grading, branding and stock supplies.

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. Taxes include all town, county and school taxes paid on farm real estate. Corporate taxes are itemized under miscellaneous and sales taxes are capitalized with the cost of the improvement. Insurance is all fire and farm liability insurance paid on farm property and excludes life insurance and personal and employee health insurance.

Other expenses include telephone, electricity, interest paid and other miscellaneous expenses. Electricity and telephone expenses include only the farm share. Interest is made up of all interest paid on farm liabilities including finance charges. Other operating expenses are all other farm operating expenses, not previously itemized, which are for a farm enterprise other than the beef enterprise.

Breeding stock purchased are only those animals purchased which are added to the breeding herd. This expense is normally a capital purchase and not included in the operating expenses for this reason.

Machinery and building depreciation charges are based on income tax figures. Depreciation is an estimate of the value of capital assets used up during the year's production. Depreciation is part of total accrual expenses but not part of total cash expenses.

The largest beef operating expense was beef grain purchased, the next largest was hired labor, followed by machinery repairs and real estate taxes. Of all accrual expenses, the greatest was machinery depreciation. The total accrual income per cow was $ 783. The accrual operating expense per cow was $ 651 and total accrual farm expenses per cow were $ 799 (operating expenses plus breeding expenses and depreciation). The average net farm income was negative $ 16 per cow.

Table 6.

Farm Expenses, Average of Thirty-two New York Beef Farms, 1989

Item	Cash Expenses	Change in Inventory	Change in Acct's Pay'bl	Accrual Expenses	Accrual[6] Exp./cow
Hired labor	$ 2,544	$	$	$ 2,544	$ 66
Feed					
Beef grain purchased	2,745	(133)		2,612	68
Beef roughage purchased	701	148		849	22
Other livestock feed	32	8		40	1
Machinery					
Gasoline & oil	1,472	(185)		1,287	33
Machinery repairs	2,510			2,510	65
Farm auto expense	449			449	12
Machinery hire & lease	624			624	16
Livestock					
Vet & medicine	836	(29)	1	808	21
Breeding expense	259	19		278	7
Feeders purchased	320			320	8
Stockers purchased	1,079			1,079	28
Mktg & other beef exp.	809	(12)		797	21
Crops					
Fertilizer & lime	1,037	(116)	49	970	25
Seed, spray & oth crop	817	(164)		653	17
Real Estate					
Land, bld & fence rep.	1,484	(303)		1,181	31
Taxes (real estate)	2,028		12	2.040	53
Rent & lease	944			944	24
Other					
Insurance	1,392			1,392	36
Telephone	345			345	9
Electricity	644			644	17
Interest Paid	1,880			1,880	49
Misc. beef expenses	735	(18)		717	19
Other operating expenses	111			111	3
Total Operating Exp.	25,797	(785)	62	25,074	651
Breeding Stock Purch.	1,113			1,113	29
Machinery Depreciation				3,090	80
Building Depreciation				1,509	39
Total Cash Expenses	$ 26,910				
Total Accrual Expenses		$ (785)	$ 62	$ 30,786	$ 799

[6] Sum of total Accrual Expenses / Sum open and bred cows on all farms.

Farm Profitability Measures

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 contributed resources or as the return to one or more individual resources such as labor and management. A series of farm profitability measures are summarized in Table 7.

Net cash farm income is total farm cash receipts less total farm cash expenses. Cash expenses include breeding stock purchased.

Net farm income without appreciation is total accrual receipts less total accrual expenses. Physical changes in inventories are included in this value. Appreciation of capital items (livestock, machinery and real estate) is excluded.

Net farm income including appreciation is total accrual income plus livestock, machinery and real estate appreciation, less total accrual expenses. Livestock, machinery and real estate appreciation from the beginning of the year to the end is estimated by each participating beef producer. The changes in inventory and appreciation are detailed in Table 10, Farm Inventory and Table 18, Value of Beef Inventory.

Table 7. Measures of Farm Profitability, Average of Thirty-two New York Beef Farms, 1989

Item		---- Average ----
Total Farm Cash Receipts		$ 24,589
- Total Farm Cash Expenses	-	26,910
Net Cash Farm Income		(2,321)
Total Accrual Receipts		$ 30,245
- Total Accrual Expenses	-	30,786
Net Farm Income w/o Appreciation		(541)
Total Accrual Receipts		$ 30,245
+ Livestock Appreciation	+	2,785
+ Machinery Appreciation	+	1,316
+ Real Estate Appreciation	+	3,477
- Accrual Expenses	-	30,786
Net Farm Income w/appreciation		7,037
Net Farm Income w/o Appreciation		$ (541)
- Family Labor Unpaid @ $ 650 /month *	-	1,923
- Interest on $ 90,907 average investment in Non-Real Estate equity capital @ 5%	-	4,545
Return to Labor, Management & Real Estate Ownership		(7,010)
- Interest on $ 185,063 average investment in Real Estate equity capital @ 5%	-	9,253
Return to Operator Labor & Management		(16,263)

Return to Labor, Management and Real Estate Ownership identifies the amount of net farm income contributed by the owner-operator's labor, management and real estate ownership. This measure is calculated: total accrual receipts less total accrual expenses less the value of unpaid family labor less the opportunity cost of using non-real estate equity. The interest charge is 5 percent. The interest charge reflects the long-term average rate of return that a farmer might expect to earn in a comparable risk investment. This interest charge is charged on average equity in all farm assets except real estate.

Return to Operator Labor and Management is the share of the net farm income without appreciation returned to the operator's labor and management. To calculate Return to Operator Labor and Management, deduct an interest charge of 5 percent on the average real estate equity from the Return to Labor, Management and Real Estate Ownership value.

The average net cash farm income of the thirty-two summary farms is negative $ 2,321. Net farm income without appreciation is negative $ 541. Net farm income with appreciation is $ 7,037. The difference between these two values, $ 7,578, is the appreciation in the value of farm assets. These producers benefited especially from increases in real estate values and increases in the value and quantity of livestock held. However, the opportunity costs of these investments contributed to low returns to Labor, Management and Real Estate Ownership and to Operator Labor and Management: negative $ 7,010 and negative $ 16,253 respectively.

Farm Statement of Net Worth

The first step in evaluating the financial status of the farm is to construct a Statement of Net Worth (balance sheet) which identifies all the assets and liabilities of the business. The second step is to evaluate the relationship between the assets, liabilities and net worth and changes that occurred during the year. Farm assets are valued at market value. The market value includes appreciation due to changes in price and changes in inventory quantities.

Liabilities include only farm liabilities and the farm portion of liabilities such as mortgages and auto loans. The farm net worth and equity position of the farms in the summary tended to be very strong with an average net worth at the end of the year of $ 284,347. The average farm net worth increased from the beginning to the end of the year by $ 16,754. Farm assets increased by $ 14,643 and farm liabilities decreased $ 2,111.

Table 8.

Farm Statement of Net Worth,
Average of Thirty-two New York Beef Farms, 1989

ASSETS	Jan 1, 1989	Dec. 31, 1989	Change
Current			
Farm cash, checking, savings	$ 2,139	$ 3,179	$ 1,040
Accounts receivable	506	444	(62)
Stocks & certificates	363	352	(11)
Feed & Supplies	10,133	12,240	2,107
Intermediate			
Cows	$ 27,893	$ 32,288	$ 4,395
Heifers	5,011	5,942	931
Bulls	3,156	4,143	987
Finish Cattle	7,224	8,135	911
Other Livestock	481	350	(131)
Machinery & Equipment	33,929	35,609	1,680
FLB/PCA Stock	303	353	50
Long-term			
Land & buildings	$ 199,431	$ 202,177	$ 2,746
Total Farm Assets	$ 290,569	$ 305,212	$ 14,643
LIABILITIES & NET WORTH			
Current			
Accounts Payable	$ 96	$ 157	$ 61
Short term debt	834	1,075	241
Advance Government Receipts	0	45	45
Intermediate debt	5,483	4,014	(1,469)
FLB/PCA stock	303	353	50
Long-term debt	16,260	15,221	(1,039)
Total Farm Liabilities	$ 22,976	$ 20,865	$ (2,111)
Farm Net Worth	$ 267,593	$ 284,347	$ 16,754

Balance Sheet Analysis

The balance sheet analysis continues by examining financial and debt ratios and factors measuring levels of debt. Percent equity, calculated by dividing net worth by assets, is the percentage of all farm assets owned by the farmer at the end of the year. Equity increases as the value of assets increase more than liabilities. The debt to asset ratio is compiled by dividing liabilities by assets at the end of the year. Low debt to asset ratios reflect strength in solvency and the potential capacity to borrow. Debt levels per cow are the sum of the total farm debt divided by the sum of open and bred cows on all farms.

Net worth is the amount farm assets exceed liabilities. The change in net worth from the beginning to the end of the year is measured without and with appreciation. Change in net worth without appreciation measures how much more (or less) the farm is worth not including changes due to price moves. The average change in net worth for the thirty-two participating farms was $ 16,754 with appreciation and $ 9,439 without appreciation. Increasing net worth on many of these farms is due primarily to increases in real estate markets. The majority of the debt on these farms is structured as long term debt such as mortgages. Ten of the thirty-two farms reported no farm liabilities at the end of 1989.

Table 9.

Balance Sheet Analysis,
Average of Thirty-two New York Beef Farms, 1989

Item	Average
Financial Ratios,	
Percent equity	92 %
Debt to asset ratio	0.08
Change in Net Worth	
Without appreciation	$ 9,439
With appreciation	16,754
Debt Analysis, Dec. 31, 1989	
Accounts payable as % of total liabilities	1 %
Operating Debt as % of total liabilities	0 %
Current & intermediate liabilities as % of total liabilities	39 %
Long-term liabilities as a % of total liabilities	60 %
Debt Levels Per Cow, Dec. 31, 1989	
Total farm debt	$ 750
Long-term debt	537
Current & intermediate debt	207
Operating debt & accounts payable	6

Farm Inventory

The farm inventory details the changes in the value of major farm assets (real estate, machinery & equipment, beef & other livestock and feed & supplies) from the beginning to the end of the year. Beef inventory changes are detailed in Value of Beef Inventory, table 18.

Table 10.
Farm Inventory, Average of Thirty-two New York Beef Farms, 1989

	Real Estate	Machinery & Equipment	Beef & Other Livestock	Feed & Supplies
Beginning of Year	$ 199,431	33,763	43,765	10,133
+ Purchases	1,316	3,864		
+ Nonfarm Noncash Transfers	0	0		
- Lost Capital	0			
- Sales	273	301		
- Depreciation	1,509	3,090		
= Net Investment	198,965	34,236	43,634	
+ Appreciation	3,211	1,316	7,224	
= End of Year	202,176	35,552	50,858	12,240

Repayment Analysis

Repayment analysis shows the amount of principal, interest and total payments made on debt of various terms. This table can be helpful when making decisions about acquiring and structuring new debt. Total debt payment per cow is the total interest and principal paid during the year divided by the average number of cows. The percentage of debt payment to cash receipts is an indication of the amount of cash required to make debt payments. The average debt payment made by participating beef producers in 1989 was $ 239 per cow. On the average 37 percent of cash receipts is used to service debt. However, the range in debt as a percent of total receipts was 0 % to 239 %. The average, 37 percent is unusually large considering that about one third of the participating farmers have no farm debt at all. The large average real estate investment and appreciation and the relatively high real estate debt burden per cow indicate a land base that is greater than the economic needs of the beef herd is being charged against the beef enterprise.

Table 11.
Repayment Analysis, Average of Thirty-two New York Beef Farms, 1989

Debt Payments	Principal	Interest	Total
Long term	$ 1,148	$ 1,427	$ 2,575
Intermediate term	1,770	509	2,279
Short-term	665	90	755
Operating (net reduction)	16	11	26
Total	$ 3,599	$ 2,037	$ 5,635
Total Debt Payment Per Cow	$ 239		
Percent of total cash receipts	37 %		

Capital and Labor Efficiency Analysis

Capital efficiency factors measure how intensively the capital is being used in the farm business. The labor analysis is a listing of the hours of work contributed to the farm as estimated by the business summary participant. The estimated hours are used to determine the full-time equivalent months of labor used by the farm. A value is given to the operator and farm family's unpaid labor.

The capital turnover is a measure of capital efficiency as it shows the number of years of farm receipts required to equal or "turnover" capital investment. It is computed by dividing the average farm assets by the year's total farm accrual receipts. The average capital turnover for the thirty-two farms is 11.9 years. Capital turnover varied between 2.9 and 46.8 years.

The value of the operators labor to the beef farm is estimated at $900 per month (one month of labor equals 200 hours). The value of the family unpaid labor is estimated at $ 650 per month. The value of the unpaid family labor is the months of labor (hours of labor divided by 200) multiplied by $650. The average value of operator, hired and family labor used per farm was $ 14,403 or $ 476 per cow.

Table 12.

Capital & Labor Efficiency Analysis,
Average of Thirty-two New York Beef Farms, 1989

Capital Efficiency (Average for Year)	Per Cow	
Farm capital	$ 9,405	
Real estate	6,667	
Machinery & equip.	1,145	
Capital Turnover, years	11.9	
Labor Force	**Hours**	
Operator(s)	1,987	
Family paid	79	
Family unpaid	550	
Hired	408	
Total	3,024/200	= 15.12 Months Labor

Labor cost	Total	Per Cow
Value of Operator(s) Labor ($900/month)	$ 9,936	$ 382
Family unpaid ($650/month)	1,923	55
Hired	2,544	39
Total Labor	$ 14,403	$ 476
Machinery Cost	$ 8,412	$ 274
Total Labor & Machinery Costs	$ 22,815	$ 749
Hired Labor & Machinery Costs	$ 10,956	$ 312

Annual Cash Flow Statement

Completing an annual cash flow summary and analysis is necessary to determine how well the cash generated by the business met the annual cash needs of the business. Understanding last year's cash flow is the first step toward planning and managing cash flow for current and future years. This cash flow statement includes only farm cash inflow and outflow.

The cash flow statement lists the farm cash inflows at the top of the page, cash outflows next, and the difference at the bottom of the page. Cash inflows include all cash farm receipts, receipts from the sale of farm assets, additional funds borrowed, as well as cash available in the beginning of the year. Cash outflows include all cash farm expenses, capital purchases, principal payments and decreases in operating debt.

For the thirty-two New York beef farms, the average cash inflow in 1989 is $29,377 and the average cash outflow is $ 35,715. The farm families contributed an average of $ 6,338 of non-farm income or savings to the farm. Besides operating expenses, the major farm cash outflows were principal payments on loans and machinery purchases.

Table 13.

Annual Cash Flow Statement,
Average of Thirty-two New York Beef Farms, 1989

Cash Inflows		
Beginning farm cash, checking & savings	$ 2,139	
Cash farm receipts	24,586	
Sale of assets : Machinery	301	
Real estate	515	
Sale of Stocks and Certificates	0	
Money borrowed (intermediate & long-term)	930	
Money borrowed (short-term)	906	
Increase in operating debt	0	
TOTAL		$ 29,377
Cash Outflows		
Cash farm operating expenses	$ 25,797	
Capital purchases: Breeding livestock	1,113	
Machinery	3,864	
Real estate	1,316	
Purchase of Stocks and Certificates	44	
Principal payments (intermediate & long-term)	2,918	
Principal payments (short-term)	665	
Decrease in operating debt	0	
TOTAL		35,715
NET NONFARM CONTRIBUTION TO FARM		6,338

Beef Enterprise Analysis

The beef enterprise receipts and expenses, table 14, shows the average receipts and expenses attributed to just the beef enterprise. The purpose of the beef enterprise table is to calculate the profitability of the beef enterprise and to determine to what extent the beef enterprise contributes to the profitability of the entire farm. Non-beef income and expenses such as income from other livestock, other livestock feed and other operating expenses are not included. Other income or expenses which may be wholely or partially attributed to the beef enterprise are allocated by the participating beef producer on a percentage basis. Because most of participating beef producers had only a beef enterprise, the beef enterprise analysis is very similar to the farm income and expenses, tables 5 and 6. The average beef enterprise net cash farm income is negative $ 2,384 and the beef enterprise net farm income (accrual) is negative $ 1,103.

Table 14. Beef Enterprise Receipts and Expenses
Average of Thirty-two New York Beef Farms, 1989

RECEIPTS	Cash Receipts	Change in Inv.	Change in Acct's Rec'bl	Accrual Receipts	Accrual[7] Inc./cow
Feeder calf sales	$ 7,762	$ 118	$ 34	$ 7,914	$ 205
Finished cattle	4,234	558	0	4,792	124
Breeding stock	3,831	3,650	(63)	7,418	192
Cull cattle	2,236		0	2,236	58
Crop Sales	1,065	821	0	1,886	49
Custom work	176		0	176	5
Government payments	1,108		0	1,108	29
Misc. receipts	787		0	787	20
Total Cash Receipts	$ 21,199				
TOTAL ACCRUAL RECEIPTS		$ 5,147	$ (29)	$ 26,317	$ 682

EXPENSES	Cash Expenses	Change in Inventory	Change in Acct's Pay'bl	Accrual Expenses	Accrual[8] Exp./cow
Hired labor	$ 2,395	$	$	$ 2,395	$ 62
Feed					
Beef grain purchased	2,745	(133)		2,612	68
Beef roughage purchased	701	148		849	22
Machinery					
Gasoline & oil	1,205	(50)		1,155	30
Machinery repairs	2,062			2,062	53
Farm auto expense	421			421	11
Machinery hire & lease	377			377	10
Livestock					
Vet & medicine	836	(29)		807	21
Breeding expense	259	19		278	7
Feeders purchased	320			320	8
Stockers purchased	1,079			1,079	28
Mktg & other beef exp.	809	(12)		797	21
Crops					
Fertilizer & lime	882	(43)	17	856	22
Seed, spray & oth crop	661	(65)		596	15
Real Estate					
Land, bld & fence rep.	1,259	(140)		1,119	29
Taxes (real estate)	1,827		12	1,839	48
Rent & lease	800			800	21
Other					
Insurance	1,052			1,052	27
Telephone	308			308	8
Electricity	605			605	16
Interest Paid	1,132			1,132	29
Misc. beef expenses	735	(18)		717	19
Total Operating Exp.	22,470	(323)	29	22,176	575
Breeding Stock Purch.	1,113			1,113	29
Machinery Depreciation				2,725	71
Building Depreciation				1,406	36
Total Cash Expenses	$ 23,583				
TOTAL ACCRUAL EXPENSES		$ (323)	$ 29	$ 27,420	$ 711
Beef Enterprise Income	$ (2,384)			$ (1,103)	$ (29)

[7] Sum total accrual receipts/sum open and bred cows on all farms.

[8] Sum of total accrual expenses/sum open and bred cows on all farms.

Herd and Crop Management

This section reports production information for the cropping program and the beef herd. Production efficiency is a key ingredient of a consistently profitable farm. Crop yields, calving percentages, weaning weights and other productivity measures must be high to be successful in the competitive beef industry.

1989 Crop Production

On many cow calf operations, decisions concerning the cropping program could make a big difference in profitability. 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.

In table 15, forage crop yields are reported as total tons dry matter produced and tons dry matter produced per acre. Corn Silage production is shown on a wet and dry matter basis. Corn grain and oats are measured in dry bushels. The acreage devoted to pasture is also shown. Crop acres and yields compiled for the average represent only the number of farms reporting each crop. Thirty of the thirty-two farms produced dry hay or hay crop silage. One farm did not produce any crops. Nine farms produced corn silage and seven produced corn grain.

Table 15.

1989 Crop Production, Average of 32 New York Beef Farms

Crop	Farms	Acres	Production	
			Total	Per Acre
Hay crop - Total	30	100	176	1.8 tn DM
Corn silage (wet)	9	34	408	10.9 tn
Corn silage (dry)			147	3.9 tn DM
Other forage	2	12	30	2.1 tn DM
Total forage	30	112	224	2.1 tn DM
Corn grain	7	11	697	61.6 bu
Oats	5	32	412	21.7 dry bu
Other crops	1	7		
Tillable pasture	13	91		
Crop residue pastured	6	52		

Herd and Crop Management Analysis

Table 16 contains summaries of productivity in various categories. The average herd and crop management measures include only those farms reporting a given measure. The range is the top and bottom value of all farms in the summary. The herd productivity on the thirty-two farms tended to be very good. Average conception rate, percent born and percent weaned averages were all in the 90 percent range. The conception rate is the percentage of cows and heifers exposed to the bull who are confirmed pregnant. Average weaning weight is indicative of genetic capability of the herd as well as pasture management.

On the average farm, 19 calves were sold as feeders weighing 543 pounds at an average price of $74.66 per hundredweight and 5 were sold as finished cattle weighing 936 pounds at an average price of $74.85 per hundredweight. As discussed in Economic Factors Affecting New York Beef Producers, page 4, the demand for feeder calves was strong in 1989. However, if cost of gain is competitive, retaining ownership to finished weights can be an effective way to increase profits and decrease risk by selling more product per breeding cow maintained and spreading price risk over two phases of beef production.

Forage production both hay crop and corn silage were below average New York State typical levels. Average hay crop yield of 1.8 ton dry matter per acre and crop silage yields of 10.9 ton per acre were below state averages of 2.29 and 13 tons per acre[9]. When the forage production is at the low end of the range, .8 ton dm/acre, it is probably more cost efficient to buy forage than produce it. The direct crop expenses/crop acre also varied widely. Direct crop expenses include the accrual expenses for fertilizer, lime, seed, spray and other crop expenses divided by the total number of crop acres.

One of the key measures of efficiency is the number of days productive pasture is available. Every day on pasture saves an average of 50 cents to one dollar in feed costs[10]. The average days on pasture was 185, which is typical of New York State. However, it is not known how productive the pasture was over the 185 days. A decline in pasture quality and quantity in late summer and fall can reduce calf gains by 1 to 2 lb/day[11]. An important measure which should be considered when measuring productivity is total feed cost/cow. The cost of increasing land productivity must be weighted against reductions in feed costs/cow and the increased number of cows that can be kept. However, increasing the stocking rate can help dilute fixed overhead costs, especially machinery costs.

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[9] New York Agricultural Statistics 1988-1989. New York Department of Agriculture and Markets. July 1989.

[10] Philip Teague, Soil Conservations Service Economist. Personal communication.

[11] Dan G. Fox, Fact Sheet 1300B. Cornell Beef Production Manual. Cornell University 1986.

Table 16.

Herd and Crop Management Analysis,
Average and Range of Thirty-two New York Beef Farms, 1989

Item	Average	Range
Conception Rate %	93.5	50.0 - 100
Calves weaned %	94.5	73.3 - 100
Calves born %	96.5	84.6 - 100
Average weaning weight	514	400 - 683
Average calf weaning age, days	208	137 - 300
Average cow weight at weaning, lbs.	1,131	800 - 1,450
Number of bulls used	2.2	0 - 10
Number of feeders sold	18.8	0 - 116
Average weight / feeder sold	543	350 - 800
Avg. feeder price received/cwt.	$ 74.66	$ 35.19 - 90.28
Number of finished cattle sold	5.5	0 - 73
Average weight / finished cattle sold	936	400 - 1160
Ave. finished cattle price received/cwt.	$ 74.85	$ 38.50 - 100.00
Tons hay crop dry matter per acre	1.8	.8 - 5.6
Tons forage dry matter per acre	2.1	.8 - 4.9
Tons forage dry matter harvested/cow	7.3	2.0 - 24.8
Direct crop expenses /crop acre	$ 17.39	$ 0 - 88.40
Tillable acres /cow	4.8	0 - 18.0
Pasture acres /cow	4.2	.9 - 24.6
Days on pasture	185	150 - 225

beef livestock at the beginning and end of the year is shown in table 17. The price of pregnant cows and heifers is calculated on a per head basis. All other prices are in dollars per pound.

Table 17.

Livestock Market Values and Stock Numbers,
Average of Thirty-two New York Beef Farms, 1989

	------ Jan. 1, 1989 ------			------ Dec. 31, 1989 ------		
Cattle Type	# Hd	Lbs/head	Price	# Hd	Lbs/head	Price
Bred cows & heifers	35.2	1,110	$ 765/hd	39.1	1,142	$ 800/hd
Open cows	1.4	1,196	0.62/lb	1.6	1,165	0.69/lb
Replacement heifer	8.7	706	0.80/lb	10.2	675	0.85/lb
Service bulls	1.3	1,681	0.74/lb	2.1	1,669	0.70/lb
Other bulls	2.0	885	0.78/lb	1.9	867	0.80/lb
Feeder cattle	12.3	525	0.75/lb	12.8	532	0.79/lb
Finish cattle	4.4	900	0.74/lb	4.9	883	0.77/lb

Value of Beef Inventory

The change in value of the beef inventory is shown on table 18. The first column indicates the value of animals held at the beginning of the year at beginning of the year prices. The second column, Change in inventory without appreciation is the change from the beginning to the end of the year in livestock numbers valued at the beginning of the year prices. The next column, appreciation, shows the increase (or decrease) in value due to price changes. The last column shows the end of the year market value of the livestock inventory.

The average farm showed a $ 4326 increase in the physical inventory of cattle and a $ 2898 increase in the value of the inventory held due to price changes. This table may vary from table 9, due to changes in the inventory of non-beef livestock.

Table 18.

Value of Beef Inventory (Jan. 1, 1989 and Dec. 31, 1989),
Average of Thirty-two New York Beef Farms,

	Beg. of year value	+ Change in inv. w/o appreciation	+ Appreciation	End of year value
Pregnant Cows & Heifers	$ 26,673	$ 2,599	$ 1,884	$ 31,156
Open Cows	1,220	(189)	101	1,132
Rep. Heifers	5,011	583	348	5,942
Service Bulls	1,616	921	187	2,724
Other Bulls	1,540	(264)	144	1,420
Feeder Cattle	5,026	118	209	5,353
Finish Cattle	2,199	558	25	2,782
TOTAL	$ 43,285	$ 4,326	$ 2,898	$ 50,509

Conclusion

In each of the four Northeast Beef Farm Business Summaries recently published (1986-1989), the conclusions have been essentially the same. The participating beef producers have negative or break-even net farm incomes but have significant capital growth and positive returns when capital appreciation is considered. This is not unusual. In the Cost of Producing U.S. Livestock, 1972-87 the USDA calculates that the average U.S. beef cow-calf enterprise had higher cash expenses than cash receipts in 9 of the 16 years between 1972 and 1987[12].

Consistently over the past four years, many of the farms submitting records had high overhead and fixed expenses, especially depreciation, interest, taxes and insurance, compared to their operating income. In many cases beef cow-calf herds are maintained on land that would be held by the owner even if there was no farm enterprise operated. In these cases the land ownership costs (building depreciation, taxes, insurance, etc.) would be incurred without the beef herd. These costs being charge against the beef herd skews the true profitability of the beef enterprise. The profitability of the enterprise therefore has to be considered in this context.

The negative average cash flow and low cash farm income combined with the favorable equity position is due in part to appreciation, indicating that many of the producers are using the beef farm as a "forced savings account". By purchasing farm machinery, cattle and especially land they are making a long term investment. This is not to suggest that all beef farmers are real estate speculators.

Another constant result from each of the Beef Farm Business Summaries are the large ranges in cost control, capital efficiency and profitability measures between individual farms. Some of the cooperators in the 1989 Beef Farm Business Summary did increase their income. Of the thirty-two participating farms:

- fifteen had a positive net cash farm income,
- seventeen had a positive net farm income without appreciation,
- twenty-three had a positive net farm income with appreciation,
- ten had a positive return to operator labor, management and real estate ownership and
- three has a positive return to operator labor and management.

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[12] Costs of Producing U.S. Livestock, 1972-87. Hosein Shapouri, Russell Bowe, Terry Crawford, and Warren Jessee. USDA ERS Agricultural Economic Report Number 632. April 1990.

In 1989, as with the beef farm summaries conducted from 1986-1988, the average producer increased net worth but did not make a profit (as measured by Accrual Net Farm Income). The reasons for this vary from farm to farm. In general, however, the farms in the summary which had negative net farm incomes had too great a capital investment for the size of their business and high operating costs per cow. Increasing cow numbers and careful budgeting when making a capital purchase decision could increase the returns on these farms. However, the primary goal on these farms may not be profit maximization. In which case, increasing herd size may diminish the owner's enjoyment and comfort level with the beef enterprise.

Because of the low number of farms participating in each of the Beef Farm Business Summaries, the authors cannot analyze why there is such a wide range in profitability and performance between beef farms. With a large database we could start to define the factors which result in profitable beef enterprises. Participation in the Farm Business Summary is free. If you or a neighbor or friend would like to participate in the Beef Farm Business Summary contact:

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