

# Dairy Farm Families' Financial Management

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This study analyzed the household financial management practices and well-being of 154 dairy farm families. The debt-to-asset ratio was negatively related to age, and positively related to presence of a child under 18 and to education of the spouse. Older respondents were pessimistic about their present and near future financial well-being but they expected satisfaction in five years. Farmers who use recommended financial management practices are satisfied with their financial situation and have a safe debt-to-asset ratio. These results may have implications for other small businesses.

KEY WORDS: financial management, household, satisfaction

Farm management usually is a family affair. Adjustments in family use of resources are usually necessitated by a farm financial stress situation. Dairy farm families face the financial stresses of high taxes, high production costs, and low product prices. The forecast for increased milk production through biotechnology may increase agricultural efficiency and, thereby, further reduce milk prices. In addition, the application of biotechnology to milk production probably will decrease the number of dairy farms. Kalter (1985) suggests that financially distressed farm families, those with a high debt-to-asset ratio, are the most vulnerable to losing their farms.

## Previous Studies

There is a paucity of research in the area of household financial management and almost none that relates to farm families. Farm families have unique financial situations compared to other households.

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RESEARCH SUPPORTED BY VERMONT AGRICULTURAL EXPERIMENT STATION HATCH PROJECT 415.

Fluctuating income and increasing debt are only two of the problems affecting a farm family's financial condition. Ball and Beatty (1984) found that many farmers needed to borrow money for basic family living expenses and when their income decreased, they were unable to repay these debts. Many farm families are dependent on off-farm income for family survival.

According to Marlowe and Godwin (1988), income alone was not a good measure of farmers' financial well-being, but a debt-to-asset ratio would be an indicator of this population's financial condition. They found that farmers with fewer years of experience had a higher debt-to-asset ratio than those families with longer tenures. Additionally, they found farm families with more educated husbands to have higher debt loads than other families.

Budgeting or keeping a spending plan is seen as an important financial management practice. Schnittgrund and Baker (1983) reported that the majority of their low income urban families used a budget even when it was only a mental, unwritten one and felt satisfied with their incomes but dissatisfied with their saving behavior. Mullis and Schnittgrund (1982) found budgeters more satisfied with their spending than nonbudgeters. Rettig and Mortenson (1986) concluded that only a minority of families have spending plans or written records.

Beutler and Mason (1987) found that young, married, and well-educated families made a formal budget more often than other families. However, approximately 25% of their sample made written budget plans. Titus, Fanslow, and Hira (1989) reported that only 19% of their money managers had written financial plans to review and younger managers planned more than older ones.

Research on financial well-being and satisfaction has been increasing. Davis (1986) found respondents were more satisfied with their level of savings than with either their standard of living or emergency resources. Garman, Lytton, and Dail (1988) looked at financial satisfaction and found that the financially distressed respondents reported dissatisfaction with their present standard of living and a tendency to ignore or throw out specific financial goals when faced with income shortages. Titus et al. (1989) found more satisfaction with financial status among older money managers with smaller households than among other managers. Hira, Fanslow, and Titus (1989) concluded that fewer money managers in 1986 were satisfied with the amount of assets, savings, and emergency

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resources, and their ability to avoid debt than were satisfied in 1982. However, they found that 38% of the respondents said they were better off and more satisfied now than before when asked to "compare your current financial situation to the way things were 4 years ago" (p.118).

### Justification and Purpose

Adjustments in the use of family resources are necessary when farm income fluctuates. Scholl (1986) reported that variability in net farm income since the late '70s has been greater than in the '60s, making financial management and planning difficult. To make a realistic household financial plan, spending must reflect the farm family income and include savings and insurance. Educators need to know how families make choices in allocating household resources even if these amounts seem small compared to agricultural expenses. It is important to assess families' financial satisfaction so that recommendations can be made to improve it when possible.

Little is known about how farm families manage their incomes. The purpose of this research was to develop a profile of dairy farm families including a debt-to-asset ratio, a description of household financial management practices, and factors related to their financial well-being.

### Procedures

A questionnaire on financial management was developed by modifying one used by Davis (1986). Questions addressed financial management practices, financial satisfaction, socioeconomic variables, and demographics. A panel of experts validated the questionnaire items to ensure the data collected were valid indicators of household financial management practices and financial well-being. It was pilot tested in the summer of 1987 by 36 Vermont dairy farmers who had participated in an earlier farm management extension program. Dairy farm families were chosen as respondents because the state's 2,500 dairy farmers produce 90% of the state's agricultural income.

In the fall of 1987, a questionnaire and cover letter were sent to 307 dairy farmers selected randomly from Vermont Department of Agriculture files of farmers. Dillman's (1978) method for mail surveys was followed. Of the 167 (54%) surveys returned, 154 were usable. The 13 unusable

returned surveys included four respondents who had sold their farms, 2 respondents who only read French, and 7 who gave no reason for refusing to participate.

Information was obtained on household financial management practices such as making a spending plan, keeping written records of spending, estimating net worth, and storing records. The federal government requires that records be kept for business expenses used as deductions for income tax purposes. Respondents were asked seven questions on the separation of farm and home expenses for such things as insurance, telephone, electricity, and car or truck.

A debt-to-asset ratio was used to measure the farm family's financial condition. The National Farm Survey on Financial Stress (1985) considered farms with debt-to-asset ratios greater than .40 to be in financial difficulty and those with greater than .70 ratios to be in extreme difficulty. Respondents were asked to think of all their financial assets and real estate property, including the market value of their home, farm, and other property and to estimate the total value of their assets. They were also asked to estimate all the family's debts. Respondents were then asked to calculate their debt-to-asset ratio by using the formula:  $\text{debt-to-asset ratio} = (\text{debts/assets}) * 100$ . Respondents chose their debt-to-asset ratio among one of six categories ranging from less than 30% to more than 100%. The accuracy of their ratio was verified by cross tabulating the debts and assets responses with the ratio category selected.

Respondents' satisfaction with financial well-being was measured on seven different items using a 5-point Likert-type scale. The questions included satisfaction with present standard of living, emergency savings, past investments and savings, and financial situation presently, in 5 years, last year, and next year. A low score indicated satisfaction with their financial situation. The Cronbach's alpha (SPSS, 1988) for reliability for these seven questions was 0.84, which is an acceptable level.

Frequencies and percentages were tabulated for the socioeconomic and demographic characteristics. To test for significant relationships between ordinal variables, the non-parametric statistic Kendall's Tau (Blalock, 1974) was used. A Tau is a correlation coefficient with a range from -1.00 to 1.00. Kendall's Tau is appropriate for use with data that are ordered such as age or educational level.

Findings

Table 1 presents the categorical distributions by education, income, assets, and debt. The typical dairy farm family respondent was married (91%) and in his or her forties with the mean age for both the respondent and spouse being 46 years old. They were most likely to be at least high school graduates. The midpoints of the income, assets, and debt categories were used to estimate the mean values of these characteristics. The sample had a mean household income of \$22,500, mean assets of \$350,000, and mean debt of \$60,000 (in 1986 dollars).

*Financial Management Practices*

Table 2 displays the frequencies and percents of the household financial management practices. The highest percentages were found for making a spending plan, keeping written records, and storing records. Seventy-seven percent of the participants responded affirmatively to the question, "Do you generally make some kind of spending plan before spending your money?" Keeping written records was indicated by 93% of the respondents. Ninety-five percent reported having some form of desk or filing cabinet in the home where they kept bills, receipts, and records.

*Debt-to-Asset Ratio*

Five respondents reported inconsistent answers and were excluded from the debt-to-asset analysis. No one reported a debt-to-asset ratio above the 70-89% level. Table 3 shows the relationships of the characteristics of dairy farm families to the debt-to-asset ratios. There was a significant negative relationship between debt-to-asset ratio and ages of respondent and partner/spouse. That is, as age increased the debt-to-asset ratio decreased. In the age 56 and older category, 81% of the respondents and 84% of the partners/spouses reported a less than 30% debt-to-asset ratio.

Families with one or more children were more frequently in high debt-to-asset ratio groups than were those with no children. Forty-five percent of all respondents reported having no children under age 18.

Table 1  
Socioeconomic Characteristics

	Respondent		Spouse	
	n	%	n	%
Education				
Elem/some high sch.	21	14	37	26
High school grad.	69	45	55	39
Voc/tech/some coll.	35	23	22	16
College grad. or more	<u>28</u>	<u>18</u>	<u>26</u>	<u>19</u>
Total <sup>a</sup>	153	100	143	100
Income before taxes				
\$9,999 or less	28	20		
10,000 - 19,999	33	24		
20,000 - 29,999	22	16		
30,000 - 49,999	13	9		
50,000 - 99,999	22	15		
100,000 or more	13	9		
Don't know	<u>10</u>	<u>7</u>		
Total	141	100		
Assets				
\$99,999 or less	11	7		
100,000 - 249,999	41	28		
250,000 - 499,999	54	37		
500,000 - 749,999	19	13		
750,000 - > 1 million	14	10		
Don't know	<u>7</u>	<u>5</u>		
Total	146	100		
Debt				
no debt	18	12		
\$9999 or less	9	6		
10,000 - 49,999	34	23		
50,000 - 74,999	22	15		
75,000 - 99,999	15	10		
100,000 - 249,999	35	24		
250,000 - 750,000	<u>15</u>	<u>10</u>		
Total	148	100		

<sup>a</sup>Total varies due to missing data

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Table 2  
Household Financial Management Practices

	yes		no		Total <sup>a</sup>	
	n	%	n	%	n	%
Make a spending plan	114	77	34	23	148	100
Keep written records	136	93	11	7	147	100
Compare planned to actual expenses	79	56	61	44	140	100
Estimate net worth	71	49	74	51	145	100
Have place for financial records	138	95	7	5	145	100
Separate utility expenses	48	33	96	67	144	100
Separate telephone expenses	73	50	72	50	145	100
Separate electricity expenses	80	55	65	45	145	100
Separate auto fuel expenses	99	68	46	32	145	100
Separate auto insurance expenses	94	65	50	35	144	100
Separate auto repair expenses	99	70	42	30	141	100
Separate other joint expenses, such as taxes and insurance	91	64	52	36	143	100

<sup>a</sup>Total varies due to missing data

The debt-to-asset ratio and the level of education were significantly related for the partner/spouse but not for the education of the respondent. Families with more education were likely to have a higher debt-to-asset ratio than were those with less education.

To determine the effect of age on the other variables, analyses within two age groups (i.e.  $\leq 45$  and 46 and older) were conducted. Cross tabulations indicated that the younger respondents and partner/spouses were significantly more likely to have completed schooling beyond the high school level and have a higher debt-to-asset ratio. In this study, income, marital status, sex, and employment were not significantly associated with the debt-to-asset ratio.

Table 3 shows the significant relationships between the household financial management practices and the family characteristics. Only three financial management practices of separating farm and home expenses were found to be significantly related to the debt-to-asset ratio. Those farm families with a lower debt-to-asset ratio ( $<.30$ ) were significantly more likely to separate farm and home expenses for transportation, that is, automobile fuel, insurance, and repairs, than were families with a higher ratio. There were no significant relationships between the demographic variables or the debt-to-asset ratio and the likelihood of separating farm and home utility bills or expenses for taxes and property insurance.

#### *Financial Well-being*

The financial well-being scale and questions also were analyzed for their relationships to socioeconomic variables and to the financial management practices and are also displayed on Table 3. The age of the respondent was significantly related to the seven item financial well-being scale. That is, older respondents were more dissatisfied with their finances than were young ones. The keeping of written records was the only financial management practice that was significantly related to the financial well-being scale.

Table 4 shows the significant findings when analyzing the financial well-being scale as individual items. Specifically, when asked to compare their financial situation to last year, older respondents reported a worse situation. In response to the question, "Thinking of the future, say this time next year, do you expect that your financial situation in general will be...", older respondents reported feeling worse than did young ones. Older respondents had significantly lower expectations for the future when asked, "How would you feel if 5 years from now your financial situation were the same as it is now?"



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Table 3  
Kendall Tau B Correlation Coefficients Between Debt-to-Asset Ratio and Financial Well-being Scale for Family Characteristics and Financial Management Practices

	Debt-to- asset ratio	p <	Well- being scale	p <	
<u>Family Characteristics</u>					
Age - respondent	-.30	.001	.14	.017	
Age - partner/spouse	-.39	.001	.07	.137	
Child < 18 years	.23	.002	-.05	.235	
Education - respondent	.09	.130	-.07	.144	
Education - partner/spouse		.14	.043	-.005	.226
<u>Financial Management Practices</u>					
Make a spending plan	-.02	.401	-.05	.252	
Keep written records	.01	.436	.16	.014	
Compare planned to actual expenses		.01	.433	.002	.374
Estimate net worth	.12	.074	-.11	.064	
Have place for financial records	-.13	.059	-.08	.142	
Separate utility expenses	-.05	.260	.05	.262	
Separate telephone expenses	-.10	.111	-.06	.197	
Separate electricity expenses	-.08	.163	.04	.304	
Separate auto fuel expenses	-.17	.019	.04	.275	
Separate auto insurance expenses	-.17	.021	-.05	.267	
Separate auto repair expenses	-.27	.001	-.12	.057	
Separate other joint expenses, such as taxes and insurance	-.07	.199	-.03	.336	

Respondents owning or renting larger acreage were more satisfied than were those with smaller acreage when asked about their saving and

Table 4  
 Kendall Tau B Correlation Coefficients Between Financial Satisfaction  
 Questions and Age and Size of Farm

	Age	p <
Financial situation compared to last year	.19	.009
Financial situation expected next year	.27	.001
Financial situation expected in 5 years	-.18	.012
	Size of Farm	p <
Satisfaction with saving and investing	-.10	.048
Financial situation expected next year	-.13	.026

Those with more acreage also reported feeling significantly better about the prospect of their financial situation next year.

#### Discussion and Recommendations

For this study the few respondents (11) in the 70-89% debt-to-asset group were considered financially distressed. Other studies (Marlowe & Godwin, 1988) also had a small proportion that were financially at risk. As mentioned earlier, 4 non-respondents sold their farms because of high debts. Perhaps other financially distressed farmers chose not to respond. This could explain the low proportion of distressed farmers in any sample.

Age and education of both the respondents and the spouses were related to the debt-to-asset ratio. Results indicate that older respondents are significantly more likely to have a less than 30% debt-to-asset ratio. This finding agrees with Avery, Elliehausen, Canner, and Gustafson (1984)

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who found that years of payment decrease debt. Information on debt repayment was not requested, but our findings may indicate that age is related to repayment. Because younger respondents had more education, one explanation may be that younger, more educated farmers tend to be greater risk takers than are older farmers. These results agree with Marlowe and Godwin's (1988) research that shows younger farmers are likely to have higher debt-to-asset ratios than are older ones.

Findings related to age and financial well-being are somewhat inconsistent. Older respondents are pessimistic about their current finances. They are more likely than younger respondents to think their situation will get worse next year. However, when asked to project 5 years ahead, the older respondents report a feeling of financial well-being if they maintain the same financial situation and younger ones are less satisfied with maintaining their current financial status. This may be based on the older respondents' years of experience with inflation and low farm product prices or a higher tolerance for maintaining their financial status quo. Their low debt-to-asset ratio suggests that their status quo is better than that of the young.

Casual observations of farm families have suggested that there is considerable merging of farm and family financial management. These data show that farm families who use the recommended financial management practices and separate farm and family expenses for automobile fuel, insurance, and repairs have a lower debt-to-asset ratio. Therefore, one could suggest that families who separate all farm and family expenses would be less likely to be financially distressed. These findings could be used to support an educational program to encourage farm families and other small business people, especially young ones and those with a high debt-to-asset ratio, to separate all business and family expenses. Those with a low debt-to-asset ratio who separate farm and home expenses for transportation probably know the tax laws. Maybe those farmers who separate expenses could serve as examples for the more vulnerable farmers. On the other hand, with low profits and little or no tax liability, high debt-to-asset farm families may perceive no benefit, tax or otherwise, in separating expenses.

Changing certain aspects of farm families' financial management may not be possible but some can be addressed with help from other farmers. Educators and practitioners may find that an older farmer may be willing to serve as a mentor for younger farmers in establishing and keeping separate farm and family records. A commonly taught financial

management practice is the preparation of a spending plan. A written record is necessary if more than one person is involved in the spending plan and if the records are used to monitor the plan. A spending plan provides significant clues for the financial counselor to help clients see where they are spending money and where they may want to make changes. However, the literature (Beutler & Mason, 1987; Schnittgrund & Baker, 1983) is not definitive about the importance of a spending plan.

Compared to smaller acreage landholders, results make it clear that respondents with more acres of land were more satisfied with their savings and investments and were optimistic about their financial situation for the next year. The fact that land has maintained or increased in value in Vermont and is forecasted to continue certainly influences this result.

Although this study was limited to dairy farmers in one New England state, it is significant because it suggests that the financial management practice of separating business and family expenses may influence the farmer's financial condition. Additionally, farmers are just one type of small business so these results can be generalized to other small business owners. The tax laws apply to all types of businesses and following recommended financial management practices might keep more businesses in business.

#### Research Implications

Future research is needed to examine differences between the household financial management practices and well-being of farmers and other self-employed business owners and managers. In addition, a study to compare the household financial practices and well-being of self-employed families to other families is needed.

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