Farm debts and leases affect farm profit in many ways

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Do you know how debt is affecting the profitability of your dairy business? Do you consider how your borrowing activity today will affect the performance and survival of your business tomorrow? Borrowing is a major decision that affects long-term profits. Understanding which factors are important will lead to better decisions and improved profitability.

To better understand debt and capital lease management, selected business performance statistics were summarized from the 1997 Dairy Business Analysis Project. The project is tracking over $250 million in assets on 46 dairies in Florida, Georgia, and Alabama. More information can be found on the projects web site at http://dps.ufl.edu/DBAP.

Several accounting assumptions were used when collecting the numbers shown in the table. The project follows Farm Financial Standards Council recommendations for asset value and profit calculation. This means that all revenues and expenses were accrual adjusted for changes in accounts receivable and payable, prepaid expenses, as well as inventories of livestock and crops. Depreciation was also included for livestock, machinery, and building/improvements. Accrual adjustments allow profit to be affected by changes in farm productivity that may not through the checkbook as cash.

While the statistics that are presented in the table are based on operating conditions unique to Florida, several concepts are demonstrated that are important to any dairy business.

The amount of net farm income per hundredweight milk sold is an important profit measure. Total revenues of $17.97 per hundredweight milk sold and total expenses of $16.85 (for the zero to 1,500 total debt and lease obligations per cow group) are much higher in the Southeast than they would be in other regions. However, how many dollars of net income per hundredweight milk sold is a measure that can be applied anywhere.

Profit associated with liabilities per cow…..

Dairies were sorted into two groups based on total liabilities per cow. This group splitting number was calculated as the average of beginning and end-of-year liabilities. Then it was divided by the average number of cows.

Liabilities are defined as all money owed to parties outside of the business. It includes more than debt. This includes accounts payable, operating notes, term notes, and capital leases, (which are not necessarily debt). The low group was defined as having $0 to $1,500 average total debt and capital leases per cow and the high group exceeded $1,500. Selected statistics are listed for both groups.

The first number worth investigating is the large difference in net farm income per hundredweight milk sold. The low group had had net farm income of $1.12 per hundredweight milk sold which was $1.73 above net loss of 61 cents for the high group. This large profit difference needs further investigation.

Other factors besides debt and capital leases per cow affected the profits. A breakdown of expense categories would reveal that the high group had slightly higher expenses per hundredweight milk sold in each expense category. Another substantial difference between groups was in interest expense. The high group had average interest expense of $0.96 per hundredweight milk sold. This difference of $0.60 per hundredweight milk sold was due to the higher liability level and the directly reduced business profit.

High liabilities constrained debt service…

High liabilities not only affect profits, but they also affect your ability to service the debt. A comparison using the operating profit margin is helpful to illustrate this point.

The operating profit margin is a good measure of a farm's debt service ability since a charge for unpaid management is taken, and interest payments are added back to net farm income. This represents what the business produces, in total revenues, that is available for debt payments, and new investments, or business retention. An operating profit margin of 10 percent would mean 10 cents of every dollar in revenue generated by the business was retained as profit.

The operating profit margin for the low per cow group was 4 percent, well above the (1 percent) loss of the high group. If these numbers were multiplied out by herd size, milk production, and total revenues per hundredweight sold, the low liability group had $124,046 available to service debt, while the high group had a shortfall of $60,460.

For all practical purposes, the high group, on average, could not service the liabilities they had in 1997 because profits were not available. This is important to realize because lenders do not like unprofitable customers.

What is the debt used for?

The practical side of borrowing is that funds are needed to finance an investment that will hopefully generate revenues for the business. The asset turnover ratio is a measure of how many dollars of revenue were generated per dollar invested in the business. It is a good measure of how efficiently assets were used in the business. Also, it is an important component of profitability since the rate of return on assets is calculated from the operating profit margin and the asset turnover ratio.

In short, the asset turnover ratio directly affects the ability of the business to pay off the debt.

Comparing the financial performance for the liability groups will help understand this concept. The asset turnover ratio of the low liability group was 0.99, while the high group had 0.72. The main reason for the difference was the low group had invested $3,382 in average total assets per cow which was 29 percent below the $4,773 of the high group. This is noteworthy because not only did the low group use their fewer assets more efficiently, they had lower liabilities per cow ($768) than the high group ($2,116).

It makes a difference not only on how much debt a dairy has but also what assets the borrowed capital purchased and whether those sets helped gain efficiency. The lender may be willing to loan the money, but the investment may not always be the most profitable. The most profitable dairies control both assets per cow and liabilities per cow.

Analyze each business individually…..

General recommendations for the best level of liabilities per cow are difficult to make given the wide variation among dairy businesses. The statistics presented here are meant to illustrate concepts affecting financial performance and are not intended for use as prescriptions for any given business.

Every dairy manager should analyze his or her dairy business using an accrual adjusted income statement and balance sheet. Both liabilities per cow and assets per cow should be used to understand the financial position of the business. The goal should be to make profitable investments that pay back liabilities in a timely manner.

Dairy Business Analysis Project final participants by liabilities per cow

	Liabilities per cow	
Category	1-1,500	>1,500
Number of dairies	16	13
Total cows (per dairy)	984	1,994
Milk sold per cow (pounds)	17,538	16,569
Total revenues (per hundredweight milk sold)	$17.97	$18.30
Total expenses (per hundredweight milk sold)	$16.85	$18.91
Net farm income[1] (per hundredweight milk sold)	$1.12	$(0.61)
Operating profit margin[2]	4 percent	(1percent)
Asset turnover ratio[3]	0.99	0.72
Rate of return on assets[4]	5 percent	0 percent
Total assets per cow[5]	$3,382	$4,773
Total liabilities per cow[6]	$768	$2,116
Debt to asset ratio[7]	0.23	0.51
Interest expense (per hundredweight milk sold)	$0.36	$0.96

[1]Net farm income from operations is defined as accrual adjusted revenues minus accrual adjusted expenses. This represents the return to unpaid labor, management, and capital.
[2]The operating profit margin was calculated as net farm income from operations minus a $50,000 charge for management plus interest with the remainder divided by total revenues.
[3]The asset turnover ratio was calculated as total revenues divided by the average of total assets for the beginning and end of 1997.
[4]The rate of return on assets was calculated as net farm income from operations minus a $50,000 charge for management plus interest with the remainder divided by the average of total assets for the beginning and end of 1997.
[5]Assets per cow were computed as the average between beginning and end of year divided by the average number of cows.
[6]Liabilities per cow were computed as the average between beginning and end of year divided by the average number of cows.
[7]Debt to asset ratio was computed as the average between beginning and end of year liabilities and assets.