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This Thing Called Debt – A Value or Danger

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Farm Debt – savior of the farm business or morally repugnant and evil? If you have been in the farm business long enough you have probably heard and felt both extremes. As almost always, the truth is somewhere in-between. One of my mother's great wisdoms was "moderation" and that value seems appropriate advice for debt in the farm business.

Debt is a valuable tool for the farm manager, but too much, too little, or unwise management of debt can hurt financial performance. This brief provides an overview of the value of debt as a farm business management tool, a key to its wise use, and its place in the financial structure of the business. Later briefs will focus on the evaluation of debt structure in a farm business.

Value of Debt in the Farm Business

The value of debt as a farm management tool is that the manager can use other people's money to create profits for the business. This is called "leverage." In a physical sense a person can use a long pole as a lever to lift a heavy object. In business, other people's money, or debt financing, can be used to lever or lift additional economic activity, for example:

- a tractor that allows the growing of more corn at a profitable level
- new facilities or a facilities upgrade that will result in greater production due to improved feed efficiency, lower death loss, and greater conception rates
- land for use in growing and selling crops

The "Big" Key to the Use of Debt Financing

Get ready, the next sentence is the most important of the article.

> *The key to successful use of debt financing is to assure that the profit you get from the use of assets purchased by debt financing is greater than the cost of debt financing (interest).*

In terms of financial ratios, is the Return on Assets (ROA) greater than the interest rate? If you get a return of 10% on assets financed by debt and have to pay 7% interest, then you have leveraged someone else's money for 3 percent. However, the double-edged sword of debt is that the opposite is true as well. That is, if the return is 4% and the cost of using the debt is 7% then the business has lost 3 percent!

Where Debt Financing Fits in the Financial Structure of the Business

To understand the place of debt and leverage in the financial structure of the business let's begin with the universal accounting equation.

Total Assets = Total Liabilities + Total Equity

Total Assets	Total Liabilities	Total Equity
Total amount of stuff used in the business to make profits (supplies, inputs, breeding stock, machinery, land, etc.)	How much of that stuff is financed by "creditors," that is, debt financing or debt capital	How much of that stuff is financed by your own money, that is, equity capital.

When the farm business puts its assets to work to make profits, those profits are a return to all assets, both those financed by the owner (equity capital) and those financed by somebody else (debt capital). Two common financial measures used to assess profit performance are the Return on Assets (ROA) and the Return on Equity (ROE) ratios. These two ratios also provide a way to assess the use of debt financing.

An example will help illustrate the value and danger of debt financing. A business owner has $60,000 of equity to invest in a business. Let's assume that once put to work the assets will return $4,800 or 8% ROA. In addition the owner can borrow up to $40,000 if they choose to do so and the return on the debt financed assets will also be 8 percent ROA. Of course, the owner will have to pay somebody for the use of their money (interest). Below are situations with varying levels of debt financing and interest rates.

Situation	**1**	**2**	**3**
Owner Financed (Equity Capital)	$60,000	$60,000	$60,000
Creditor Financed (Debt Capital)	$0	$40,000	$40,000
Interest Rate	6%	6%	10%
Return to Debt Capital Before Interest Deduction	$0 [.08 * $0]	$3,200 [.08 * $40,000]	$3,200 [.08 * $40,000]
Interest Costs	$0 [.06 * $0]	($2,400) [.06 * $40,000]	($4,000) [.10 * $40,000]
Net Return (Profit) from Debt Capital After Interest is Paid	**$0** [$0 - $0]	**$800** [$3,200 - $2,400]	**-$800** [$3,200 - $4,000]
Return (Profit) from Equity Capital	**$4,800** [.08 * $60,000]	**$4,800** [.08 * $60,000]	**$4,800** [.08 * $60,000]
Total Return (Profit)	***$4,800*** [$0 + $4,800]	***$5,600*** [$800 + $4,800]	***$4,000*** [-$800 + $4,800]
Rate of Return on Equity (ROE)	***8%*** ***[$4,800 / $60,000]***	***9.3%*** ***[$5,600 / $60,000]***	***6.7%*** ***[$4,000 / $60,000]***

In situation 1 the owner is employing his $60,000 of equity only, getting $4,800 of profit, or 8% ROE. In situation 2, the owner uses his $60,000 of equity, but also borrows another $40,000 and puts that to work earning an 8% return. He earns $3,200 on the $40,000 of borrowed money, pays the creditor $2,400 of interest for use of the debt financing, and ends up pocketing an additional $800 for a total return of $5,600 or 9.3% ROE. He has successfully leveraged someone else's money for greater returns. However, situation 3 shows the double edged sword of debt financing. All is the same except the interest rate has increased to 10 percent. The same 8% return on debt capital ($3,200) does not cover the $4,000 interest cost (8% ROA < 10% *i*-rate). The $800 loss must come from the owner and ROE falls to 6.7 percent.

Another consideration when using debt capital to expand a business is that other risks may be amplified. If a dairy uses debt capital to expand a dairy operation then the business has hopefully levered greater profits (value of using debt capital). However, it may also have levered greater risks. More cows, more outside labor, more animal waste, and etc. may increase production, human resources, legal, and environmental risks. If these risks are beyond management's ability and result in returns that are less than interest costs then the danger of debt capital may come to bear. It always circles back to management.

I don't believe mother's advice to me for "moderation" was referring to the use of debt capital! Nevertheless, the idea of too much of a good thing may very well apply to debt financing. It is a valuable tool and the risk management challenge is assuring that the return on debt financed capital is greater than the cost (interest) of using the debt. If the return is greater than the interest rate then the extra is a leveraged payment to the owner. If the return is less than the interest rate then the cost must be subsidized from another part of the business (usually the owner's equity!).

- PowerPoint presentation of “This Thing Called Debt – A Value or Danger” available at the Center for Dairy Profitability website (http://www2.cdp.wisc.edu/).
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