

What is Your Repayment Capacity?

Albert de Vries, Department of Animal Sciences, UF

Russ Giesy, Extension Dairy Science, UF

Repayment capacity measures your ability to repay debt (principal + interest) from regular income. Every business with debt has a repayment capacity. Basically, if debt service requirements exceed the debt repayment capacity, the business will encounter cash flow difficulties. This can be a serious strain on any business and it is a problem on many dairies in this challenging year. Lenders also often look at a business's repayment capacity when they evaluate requests for new loans. Repayment capacity is also called coverage.

DBAP calculates three measures of repayment capacity. They are found on the Financial Ratios page and the Debt Analysis page at the end of your DBAP data collection report.

The easiest one to calculate is the **Cash Flow Coverage Ratio**. This is the number of times that short-term (current) financial obligations (for accounts payable, principal, and leases) are covered by the regular net cash flow. The period in which the net cash flow is generated and the financial obligations are due must be equal, for example a year. The goal for the cash flow coverage ratio is at least 1. Lenders often like to see a ratio of 1.25 to 1.5.

In DBAP, cash flow coverage ratio = (total cash receipts – total cash expenses) / total current liabilities. Total cash receipts and total cash expenses are simply the cash receipts and cash expenses from the normal day-to-day operation of the dairy, including interest payments. Non-cash revenue and expenses, such as changes in inventory, accounts payable, and depreciation, are not included. Cash from new loans or to pay off principal are also not included. The total current liabilities are the portion of debt that is due within a year.

An example. Suppose a 500-cow dairy has total receipts of \$1,500,000 and total expenses of \$1,420,000 in a 2001. Its total current liabilities on December 31 of 2001 (due in 2002) are \$2000 in accounts payable, and \$70,000 in principal and interest. Thus the dairy has \$1,500,000 - \$1,420,000 = \$80,000 to pay the \$72,000 short-term debt. This is just sufficient. The cash flow coverage ratio = $(\$1,500,000 - \$1,420,000) / (\$2000 + \$70,000) = 1.11$ is accordingly slightly larger than the minimum goal of 1.

A serious limitation of the cash flow coverage ratio is that it is entirely cash based. Changes in inventory, accounts payable and receivable, and prepaid expenses are not included. This may give biased results. For example, the revenue from milk that was shipped in December 2001, but paid in January 2002, is not included in a December 31 cash flow coverage ratio, even though it is cash that will soon be available to cover the short-term debt payments.

The Farm Financial Standards Council recommends **Term Debt and Capital Lease Coverage Ratio** as a measure of repayment capacity. Term debt and capital lease coverage ratio = (net farm income from operations + non dairy income + depreciation + interest on term debt – net social security and income taxes – owner withdrawals) / (annual scheduled payments on term debt and capital leases).

Here is what it means. The numerator converts the accrual net farm income from operations into an estimate of the net cash available to pay principal and interest on the term debt and capital leases. Term debt is debt that is fully due in more than one year from the start of the obligation. A capital lease is a long-term lease that is not cancelable, in which rent is paid at least annually. The denominator is what you annually need to pay to service long-term debt, both principal and interest. Obviously, the goal for this ratio should be at least 1. Lenders often like to see a ratio of at least 1.25.

The term debt and capital lease coverage ratio is different from the cash flow coverage ratio because it is accrual and looks at only that portion of the debt that is long-term and due in a year, not current debt such as accounts payable.

Continuing our 500-cow dairy example, we first need to calculate net farm income from operations. Suppose the dairy had non-cash expenses (depreciation, reductions in inventory, etc.) of \$33,000 and non-cash revenue (increase in accounts receivable, value of youngstock, etc.) of \$47,000. Its net farm income from operations in 2001 was therefore $\$1,500,000 + \$47,000 - \$1,420,000 - \$33,000 = \$94,000$. Further it had \$36,000 in depreciation (a non-cash expense), \$11,000 paid interest for term debt. Owner withdrawals were \$45,000, taxes \$26,000, and non-dairy income \$0.

Thus the estimated net cash available is $\$94,000 + \$0 + \$36,000 + \$11,000 - \$26,000 - \$45,000 = \$70,000$. Of the \$72,000 current debt, \$56,000 is for annual payments of (long-)term debt and capital leases. So \$70,000 is available to cover \$56,000, which is just enough. Similarly, the term debt and capital lease coverage ratio = $\$70,000 / \$56,000 = 1.25$ is greater than the minimal goal of 1.

A potential limitation of the term debt and capital lease coverage ratio is that the estimated net available cash still includes some noncash items, such as accounts receivable or an increase in inventories. It is therefore possible that the actual cash available is not sufficient in the short run if these noncash items cannot be converted to cash in time.

The Farm Financial Standards Council also recommends calculating the **Capital Replacement and Term Debt Repayment Margin** as a measure of repayment capacity. This margin is basically the money that is left over after payments have been made on term debt and capital leases. This money is primarily used to replace worn-out capital assets. Obviously, the goal is to have a positive margin.

Capital replacement and term debt repayment capacity = net farm income from operations + depreciation + interest on term debt – net social security and income taxes – owner withdrawals – annual scheduled payments on term debt and capital leases.

The formula is the same as for term debt and capital lease coverage ratio, except the sign before the

annual scheduled payments on term debt and capital leases is (–) instead of (/). If in our example the term debt and capital lease coverage ratio = $\$70,000 / \$56,000 = 1.25$, then the capital replacement and term debt repayment margin = $\$70,000 - \$56,000 = \$14,000$. This \$14,000 is available for replacement of worn-out assets.

DBAP assumes that there are no payments on unpaid operating debts from the previous year and that payments on personal liabilities, such as a home mortgage, are included in the owner withdrawals. If this is not the case, then these items must be subtracted from the \$14,000 in the example to get the correct capital replacement and term debt repayment capacity.

Table 1 shows average and median DBAP results for 2000 and 2001. A few dairies have exceptional numbers, so the averages may not give a good picture. The median means that half of the DBAP dairies had a higher number and half had a lower number. The year 2001 was financially a good year, which resulted in a better repayment capacity than in 2000.

Table 1. DBAP repayment capacity measures for 2000 and 2001.

Repayment capacity measure	2000		2001	
	Average	Median	Average	Median
Cash flow coverage ratio	4.18	0.78	2.14	1.07
Term debt and capital lease coverage ratio	10.38	0.96	10.17	2.59
Capital replacement and term debt repayment margin	\$150,301	\$15,064	\$281,702	\$132,203

Sources:

Ralph W. Battles and Robert C. Thompson, Jr. *Fundamentals of Agribusiness Finance*. 2001.
 Farm Financial Standards Council. *Financial Guidelines for Agricultural Producers*. 1997.