



## **Solvency and Repayment Capacity issues facing the swine farmer**

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### **Introduction**

There are many ways of evaluating a business and making financial decisions for the business. Historically in agriculture, that has varied by the enterprises you have, the lender you work with and the part of the country you live in. These variations made it hard to compare apples to apples and maintain consistency across regions and enterprises. That was one of the main reasons that the Farm Financial Standards Task Force was formed. The Task Force (FFSTF) has since developed a set of guidelines to make it easier to consistently evaluate a business and make financial decisions based on that evaluation.

In this fact sheet, we want to look at solvency and repayment capacity measures suggested by the FFSTF. In particular, what do they mean and how can I use them to make decisions on my farm. They are very helpful as we look at the strength of a farm's financial position and its' ability to make large financial purchases. There are many things we may want for our farm, but can we really afford them.

### **Objectives**

1. Define what Solvency and Repayment Capacity mean.
2. Identify the components of Solvency and Repayment Capacity ratios.
3. Determine Solvency and Repayment Capacity ratios for a sample farm and your farm.
4. Identify strong and weak Solvency and Repayment Capacity ratios.
5. Understand how Solvency and Repayment Capacity ratios can be used to make a purchasing decision.

### **Solvency**

Solvency is important in evaluating the risk position of the farm and in considering future borrowing capacity. It is the ability of the business to pay all its debts if it sold out. If the total value of all assets is more than all debts, the farm is said to be solvent. If the sale would not generate enough cash to pay off all debts, the farm is insolvent. Solvency includes three ratios; debt to assets, equity to assets and debt to equity. These ratios can help evaluate and communicate how much the producer has invested in the business and how much the lender has invested in the business.

### **Farm Debt to Asset Ratio**

This ratio measures the financial position or solvency of the farm by comparing the farm liabilities (debts) to farm assets. It measures the portion of the farm assets that have debt against them. In other words, it expresses what proportion of total farm assets is owed to creditors. It is one way to express the risk ex-

posure of the farm business. A higher ration is generally considered to be an indicator of greater financial risk and lower borrower capacity. A reasonable standard for the ration varies from one type of enterprise to another and from farmer to farmer. However, anything less then 40% is considered good, between 40 and 75% is a caution area and above 75% is a danger area.

Farm Debt to Asset Ratio is calculated as follows:  
 $(\text{Total Ending Farm Liabilities} / \text{Total Ending Farm Assets}) \times 100 =$   
Farm Debt to Asset Ratio (as a %)

Sample Inputs:  $(\$596,335 / \$1,087,914) \times 100 = 54.81\%$

My Farm ( \_\_\_\_\_ / \_\_\_\_\_ )  $\times 100 =$  \_\_\_\_\_ Farm Debt to Asset Ratio

## Farm Equity to Asset Ratio

The next ratio, Farm Equity to Asset Ratio is algebraically related to the Farm Debt to Asset Ratio. It looks at the solvency area of the farm business in a slightly different way. The Farm Equity to Asset ratio measures the farm equity (net worth) relative to the value of the farm assets. It measures the proportion of the farm assets financed by the owner's equity whereas the debt to asset ratio measured the proportion of farm assets financed by debt. When added together these two measures always add up to 100% because they describe how total farm assets are financed. The higher the percentage for the farm equity to asset ratio, the more total capital supplied by the owner and the less by the creditor. A reasonable standard for the ratio varies from one type of enterprise to another and from farmer to farmer. However, anything greater then 70% is considered good, between 70 and 40% is a caution area and below 40% is a danger area.

Farm Equity to Asset Ratio is calculated as follows:  
 $(\text{Total Ending Farm Equity} / \text{Total Ending Farm Assets}) \times 100 =$   
Farm Equity to Asset Ratio (as a %)

Sample Inputs:  $(\$491,579 / 1,087,914) \times 100 = 45.19\%$  Farm Equity Asset Ratio

My Farm ( \_\_\_\_\_ / \_\_\_\_\_ )  $\times 100 =$  \_\_\_\_\_ Farm Equity to Asset Ratio

## Farm Debt to Equity Ratio

The Farm Debt to Equity Ratio measures the amount of farm debt relative to the amount of farm equity. It measures the amount of debt the farm has for every dollar of equity (net worth) the farm has.

This ratio is also referred to as the leverage ratio. Leverage refers to increasing the use of debt relative to equity as a means of financing the business. The higher the farm debt to equity ratio or "leverage ratio" the more total capital supplied by the creditors and less by the business. Lenders are particularly interested in this ratio because it shows the proportion of risk they are taking in comparison to the owner. Many lenders prefer the farm debt to equity ratio to be less than 1.0 (100%), with requirements varying depending on whether the liabilities are secured by current, or long-term assets. In general, the greater the loan risk and longer the terms, a lower ratio is desired by the lender.

Farm Debt to Equity Ratio is calculated as follows:  
 $\text{Total Ending Farm Liabilities} / \text{Total Ending Farm Equity} \times 100 =$   
Farm Debt to Equity Ratio (as a %)

Sample Inputs:  $(\$596,335 / \$491,579) \times 100 = 121.31\%$  (as a %)

My Farm ( \_\_\_\_\_ / \_\_\_\_\_ )  $\times 100 =$  \_\_\_\_\_ %

There are a couple of areas to watch out for as you look at the solvency ratios.

- [How you value your assets can make a difference.](#) If they are valued high, you may have a greater sense of comfort than you should. Likewise if assets are valued very low, you may not be as bad off as you think.
- [To give a true picture of risk, you should also add in deferred taxes as a liability.](#) These are the

taxes you would have to pay if you got out of business immediately.

- All three ratios are very helpful as a comparison from year to year on the same farm. It will help to see if the farm is decreasing its risk exposure as it continues to do business. A comparison between farms in the same year is harder as all farms have a different mix of enterprises, length of time in business and managerial skill.

## Repayment Capacity

Repayment capacity measures provide insight into your ability to generate enough funds to make debt payments on intermediate and long term loans (loans longer than one year) and to replace capital assets. If used alone, these measures only provide a snapshot of the businesses ability to perform. It is better when they are used along with a cash flow analysis to be certain that the business is able to meet its financial obligations over a longer period of time. The two financial measures relevant to repayment capacity are term debt and lease coverage ratio and capital replacement and term debt repayment margin.

## Term Debt and Capital Lease Coverage Ratio

The term debt and capital lease coverage ratio measures the ability of the business to cover all term debt and capital lease payments over a period of time. A number less than 100 percent indicates that the business is not generating sufficient income to meet all of the term debt and capital lease payments. A number greater than 100 indicates the business is generating sufficient income to pay all term debt and capital lease obligations with some surplus margin remaining.

A few things to remember:

- Even though the business may generate sufficient earnings (after matching revenues with the expenses incurred to create those revenues) to cover all term debt and capital lease payments, there may not be sufficient cash generated to actually make the payments on a timely basis. The liquidation or build-up of inventories can make the interpretation of the ratio incorrect in the short run.
- If the repayment schedules for large amounts of term debt have interest only periods in the early years of amortization (frequently one to three years for the major construction of new production facilities), the principal payments for term debt may be understated.
- If revenues are not matched with the expenses incurred to create the revenues, the ratio may be greatly overstated or understated.
- The stability of non-farm income can affect the reliability of this ratio for future planning.

Term Debt & Capital Lease Coverage Ratio is calculated as follows:

Net Farm Income from Operations  
 + Miscellaneous Non-Farm Income  
 + Off Farm Employment Income  
 + Depreciation Expense  
 + Interest on Term Debt  
 - Income Taxes Paid  
 - Owner Withdrawals  
 = (a)  
 /  
 Principle payments on Current Portion of Term Debt  
 + Interest on Term Debt  
 + Principle Payments Non-Farm  
 + Current Portion of Capital Leases  
 = (b)  
 = Term Debt and Capital Lease Coverage Ratio  
 ( a / b )

		Sample	My Farm
Net Farm Income from Operations		\$53566	
Miscellaneous Non-Farm Income	+	\$150	
Off Farm Employment Income	+	\$16500	
Depreciation	+	\$42003	
Interest on Term Debt	+	\$22083	
Income Taxes Paid	-	\$34940	
Owner Withdrawals	-	\$29620	
	=	\$69742 (a)	
	/		
Principal Payments on Current Portion of Term Debt	+	\$21329	
Interest on Term Debt	+	\$22083	
Principle Payments Non-Farm	+	\$750	
Current Portion of Capital Leases	+	0	
	=	\$44162 (b)	
Term Debt and Capital Lease Coverage Ratio		1.579	
		\$69,742 (a) / \$44,162(b) = 1.579 Term Debt & Capital Lease Coverage Ratio	

## Capital Replacement and Term Debt Repayment Margin

The capital replacement and term debt repayment margin is the amount of money remaining during a typical year of business after all operating expenses, taxes, and owner withdrawals have been accounted for. It is the cash generated by the farm business which is available for financing the purchase of capital replacements such as machinery and equipment and making loan payments. It is used to evaluate the ability of the farm to generate funds necessary to repay debts with maturity dates longer than one year and to replace capital assets. It also enables users to evaluate the ability to acquire capital or service additional debt and to evaluate the risk margin for capital replacement and debt service.

This measure assumes that the current year operating loan will be repaid in the current year as a result of normal operations and not figured as a part of the measure for this year. Unpaid operating debt from a prior year that is figured in the calculation should not include lines of credit and debt for livestock purchased last year that will be sold this year (if that is part of the normal course of business).

This measure is a dollar amount (which may be positive or negative), so it is difficult to compare the measure between farm businesses. The appropriate margin will vary from farm to farm depending on the production and price variability associated with the enterprise(s), the degree of diversification for farm and non-farm enterprises, and the financial and risk management abilities of the farmer. It is impossible to establish one standard for all farm businesses.

A few things to remember:

- If the repayment schedules for large amounts of term debt have interest only periods in the early years of amortization (frequently one to three years for the major construction of new production facilities), the margin may be overstated.
- If revenues are not matched with the expenses incurred to create the revenues, the margin may be greatly overstated or understated.
- The true economic relationship between “depreciation” and “cash payments for capital purchases” must be recognized. Some farm businesses must spend an amount equal to or in excess of the annual depreciation charge just to remain efficient and to keep buildings, machinery and equipment up to current technological standards. Other farm businesses can enjoy the tax deduction of depreciation, but need not replace, buildings, machinery, and equipment except after long periods of extended use.
- The liquidation or build-up of inventories can make the interpretation of this measure incorrect in the short run, because net farm income from operations is calculated using an accrual-adjusted income statement. There may or may not be sufficient cash available to make payment(s) on a timely bases, due to changes in inventories. Thus, this measure should be used in conjunction with a projected cash flow statement.

The stability of non-farm income can affect the reliability of this margin for future planning.

Capital Replacement & Term Debt Replacement Margin is calculated as follows:

Net Farm Income from Operations  
 + Miscellaneous Non-Farm Income  
 + Off Farm Employment Income  
 + Depreciation expense  
 -Income taxes paid  
 -Owner withdrawals  
 -Principle payments on Current portion of Term Debt  
 -Principle Payment - Non-Farm  
 = Capital Replacement & Term Debt Replacement Margin

	Sample Inputs	My Farm
Net Farm Income from Operations	53,566	
Miscellaneous Non-Farm Income	+ 150	
Off Farm Employment Income	+ 16,500	
Depreciation Expense	+ 42,003	
Income taxes paid	- 34,940	
Owner withdrawals	- 29,620	
Principal Payments on Current Portion of Term Debt	- 21,329	
Principal Payment – Non-farm	- 750	
Capital Replacement & Term Debt Replacement Margin	= \$ 25,580	

## References

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