

CORNHUSKER ECONOMICS

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New Ratios for Measuring Farm Success

Market Report	Yr Ago	4 Wks Ago	7/3/09
Livestock and Products,			
Weekly Average			
Nebraska Slaughter Steers, 35-65% Choice, Live Weight	\$101.16	\$82.25	\$82.34
Nebraska Feeder Steers, Med. & Large Frame, 550-600 lb	*	113.77	*
Nebraska Feeder Steers, Med. & Large Frame 750-800 lb	*	100.88	*
Choice Boxed Beef, 600-750 lb. Carcass	170.60	141.39	138.75
Western Corn Belt Base Hog Price Carcass, Negotiated	70.06	55.48	58.74
Feeder Pigs, National Direct 50 lbs, FOB	24.92	42.00	33.68
Pork Carcass Cutout, 185 lb. Carcass, 51-52% Lean	79.25	56.46	54.36
Slaughter Lambs, Ch. & Pr., Heavy, Wooled, South Dakota, Direct	115.00	114.25	100.00
National Carcass Lamb Cutout, FOB	275.13	256.77	255.68
Crops,			
Daily Spot Prices			
Wheat, No. 1, H.W. Imperial, bu	8.14	5.95	4.49
Corn, No. 2, Yellow Omaha, bu	7.05	4.20	3.01
Soybeans, No. 1, Yellow Omaha, bu	15.92	12.17	10.70
Grain Sorghum, No. 2, Yellow Dorchester, cwt	11.95	6.86	4.80
Oats, No. 2, Heavy Minneapolis, MN, bu	*	2.61	2.16
Feed			
Alfalfa, Large Square Bales, Good to Premium, RFV 160-185 Northeast Nebraska, ton	190.00	*	*
Alfalfa, Large Rounds, Good Platte Valley, ton	77.50	*	*
Grass Hay, Large Rounds, Premium Nebraska, ton	85.00	*	*
Dried Distillers Grains, 10% Moisture, Nebraska Average	195.00	148.00	100.50
Wet Distillers Grains, 65-70% Moisture, Nebraska Average	72.50	51.50	39.50
*No Market			

Benchmarks have allowed us to measure and improve farming operations for a long time now. Lord Kelvin, (physicist; 1824-1907) said “If you cannot measure it, you cannot improve it.” So looking for new ways to measure operations has led us to some changes in the way we used benchmark farms.

The Farm Financial Standards Council has recently recommended changes to the old “Sweet Sixteen” financial ratios. These ratios have been used since the late 80’s to evaluate the financial health of a business. There were no recommended changes to the original sixteen ratios, but five new ones have been added, some of which show great progress in the ability to benchmark your farm.

The first new measure, **Working Capital to Gross Income**, was added to the Liquidity section. Before we had the **Current Ratio** and **Working Capital**, but it was hard to really tell much about the operation from them alone.

Example:

	<u>Farm A</u>	<u>Farm B</u>
Current Ratio	2.0	1.75
Working Capital	\$50,000	\$100,000

Both Farm A and Farm B would be in the “Green Light” area, or considered in good financial shape. If we are able to add a measurement for the size of the farm, it changes the outlook of the farms.

Gross Income	\$1,000,000	\$300,000
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Now it seems that Farm A, while it must not have much debt at this time, is not going to be able to finance much of its operating expenses on its own. Their Working Capital to Gross Income ratio is five percent. Farm B, on the other hand, has a larger share of its gross income in reserves, and a working capital to gross income ratio of 33 percent. This should allow for much less borrowing requirements through the year, and a



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lower risk loan.

It was discussed to have this ratio be **Working Capital to Gross Expenses**, and I personally feel that would have been a better measure. This would have shown how much of your operating needs you could cover from your own sources. If the net income is tight, this will also show that, but in high income years it will be distorted.

The next ratio added was **EBITDA or Earnings Before Interest, Taxes, Depreciation, and Amortization**. This measurement shows the earnings of the business that are available for debt repayment. This is a favorite among lenders to quickly show how much an operation has available to make payments each year.

The other three all come in the **Repayment Capacity** section of the **Farm Standards**. They are the **Capital Debt Repayment Capacity**, **Replacement Margin** and **Replacement Margin Coverage Ratio**. The first two are calculations leading to the third, which I think could be quite valuable.

Capital Debt Repayment Capacity is a measurement of all sources of income that could be used to pay debt. It includes both farm and non-farm sources of income, after family living and taxes, with depreciation and interest added back in.

Replacement Margin differs from the old **Capital Repayment Margin**, and is an attempt to better measure those operations that don't operate on a lot of borrowed money. The **Replacement Margin** starts with **Capital Debt Repayment Capacity** and subtracts out principle and interest on term loans, as well as a measurement of the "cash" contribution for capital purchases. There is no standard set for this "cash" contribution, but a factor such as 10 percent of the value of equipment would be a suggested starting place. This would effectively show the remaining amount of cash available for new principle and interest payments.

The **Replacement Margin Coverage Ratio** is a result of dividing the **Capital Debt Repayment Capacity** by the sum of the principle and interest payments, plus the "cash" contribution calculated in the **Replacement Margin**. Its purpose is to show if enough income was generated to cover your term debt payments and the "cash" contribution for new equipment.

The best improvement for these ratios is going to be for operations that don't borrow much money, but do need to have a measurement for cash available for replacing equipment. In the past, the **Repayment Capacity** measures have not worked well in these situations.

A complete list of the new 21 ratios and their calculations is included.

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Farm Financial Ratios and Guidelines

Liquidity

Is the ability of your farm business to meet the financial obligations as they come due - to generate enough cash to pay your family living expenses and taxes, and make debt payments on time.

Current Ratio

Measures the extent to which current farm assets, if sold tomorrow, would pay off current farm liabilities.

Total Current Farm Assets
/ Total Current Farm Liabilities

Working Capital

Tells us the operating capital available in the short term from within the business.

Total Current Farm Assets
- Total Current Farm Liabilities

Working Capital to Gross Revenues

Measures operating capital available against the size of the business.

Working Capital
/ Gross Farm Income

Solvency

Is the ability of your business to pay all its debts if it were sold tomorrow. Solvency is important in evaluating the financial risk and borrowing capacity of the business.

Farm Debt-to-Asset Ratio

Is the bank's share of the business. It compares total farm debt to total farm assets. A higher ratio is an indicator of greater financial risk and lower borrowing capacity

Total Farm Liabilities
/ Total Farm Assets

Farm Equity-to-Asset Ratio

Is your share of the business. It compares farm equity to total farm assets. If you add the debt-to-asset ratio and the equity-to-asset ratio, you must get 100%

Total Farm Net Worth
/ Total Farm Assets

Farm Debt-to-Equity Ratio

Compares the bank's ownership to your ownership. It also indicates how much the owners have leveraged (i.e., multiplied) their equity in the business.

Total Farm Liabilities
/ Total Farm Equity

Profitability

Is the difference between the value of goods produced and the cost of the resources used in their production.

Net Farm Income

Represents return to your labor, your management and your equity that you have invested in the business. It is the reward for investing your unpaid family labor, management and money in the business instead of elsewhere. Anything left in the business, i.e., not taken out for family living and taxes, will increase your farm net worth.

Gross Cash Farm Income
- Total Cash Farm Expenses
+ / - Inventory changes
- Depreciation

Rate of Return on Farm Assets

Can be thought of as the average interest rates being earned on all (yours and creditors') investments in the farm. Unpaid labor and management are assigned a return before return on farm assets is calculated.

Net Farm Income
+ Farm Interest
- Value of Operator Labor & Mgt
= Return on Farm Assets
/ Average Farm Assets

Rate of Return on Farm Equity

Represents the interest rate being earned by your investment in the farm. This return can be compared to returns available if your equity were invested somewhere else, such as a certificate of deposit.

Net Farm Income
- Value of Operator Labor & Mgt
= Return on Farm Equity
/ Average Farm Net Worth

Operating Profit Margin

Shows the operating efficiency of the business. If expenses are low relative to the value of farm production, the business will have a healthy operating profit margin. A low profit margin can be caused by low product prices, high operating expenses, or inefficient production.

Return on Farm Assets
/ Value of Farm Production

Value of Farm Production =
Gross Cash Farm Income
+/- Inventory Changes
- Feeder Livestock Purchased
- Purchased Feed

EBITDA

Earnings **B**efore **I**nterest, **T**axes, **D**epreciation, and **A**mortization.
Measures earnings available for debt repayment.

Net Farm Income
+ Interest Expense
+ Depreciation & Amortization

Repayment Capacity

Shows the borrower's (i.e., your) ability to repay term debts on time. It includes non-farm income and so it is not a measure of business performance alone.

Capital Debt Repayment Capacity

Measures the amount generated from farm and non-farm sources, to cover debt repayment and capital replacement.

Net Farm Income
+ Depreciation
+ Net Non-Farm Income
- Family Living & Income Taxes
+ Interest Expense on Term Loans

Capital Debt Repayment Margin

Is the Amount of money remaining after all operating expenses, taxes, family living costs, and scheduled debt payments have been made. It's really the money left, after paying all bills, that is available for purchasing or financing new machinery, equipment, land or livestock.

Capital Debt Repayment Capacity
- Scheduled principle & interest on term loans *

Replacement Margin

The amount of income remaining after paying principle and interest on term loans and unfunded (cash) capital purchases.

Capital Debt Repayment Capacity
- Unfunded (Cash) Capital Replacement Allowance

Term-Debt Coverage Ratio

Tells whether your business produced enough income to cover all intermediate and long-term debt payments. A ratio of less than 1.0 indicates that the business had to liquidate inventories, run up open accounts, borrow money, or sell assets to make scheduled payments.

Capital Debt Repayment Capacity
/ Scheduled principle & Interest on Term Loans *

Replacement Margin Coverage Ratio

A Ratio Under 1.0 indicates that you did not generate enough income to cover term debt payments and unfunded capital purchases.

Capital Debt Repayment Capacity
/ (Scheduled principle & Interest on Term Loans *
+ Unfunded Capital Replacement Allowance)

Financial Efficiency

Shows how effectively your business uses assets to generate income. Past performance of the business could well indicate potential future accomplishments. It also answers the questions:

- ⇒ Are you using every available asset to its fullest potential?
- ⇒ What are the effects of production, purchasing, pricing, financing and marketing decisions on gross income?

Asset-Turnover Rate

Measures efficiency in using capital. You could think of it as capital productivity. Generating a high level of production with a low level of capital investment will give a high asset-turnover rate. If, on the other hand, the turnover is low you will want to explore methods to use the capital invested much more efficiently or sell some low-return investments. (It could mean getting rid of that swamp and ledge on the Back 40 an getting something that produces income.)

Value of Farm Production
/ Average Farm Assets

The last four ratios show how Gross Farm Income is used. The sum of the four equal 100% (of Gross Farm Income).

Operating Expense Ratio

Shows the proportion of farm income that is used to pay operating expenses, not including principle or interest.

Total Farm Operating Expenses
excluding Interest & Depreciation
/ Gross Farm Income

Depreciation Expense Ratio

Indicates how fast the business wears out capital. It tells what proportion of farm income is needed to maintain the capital used by the business.

Depreciation
/ Gross Farm Income

Interest Expense Ratio

Shows how much of gross income is used to pay for interest on borrowed capital

Farm Interest
/ Gross Farm Income

Net Farm Income Ratio

Compares profit to gross farm income. It shows how much is left after all farm expenses, except for unpaid labor and management, are paid

Net Farm Income
/ Gross Farm Income

* Includes payments on capital leases