

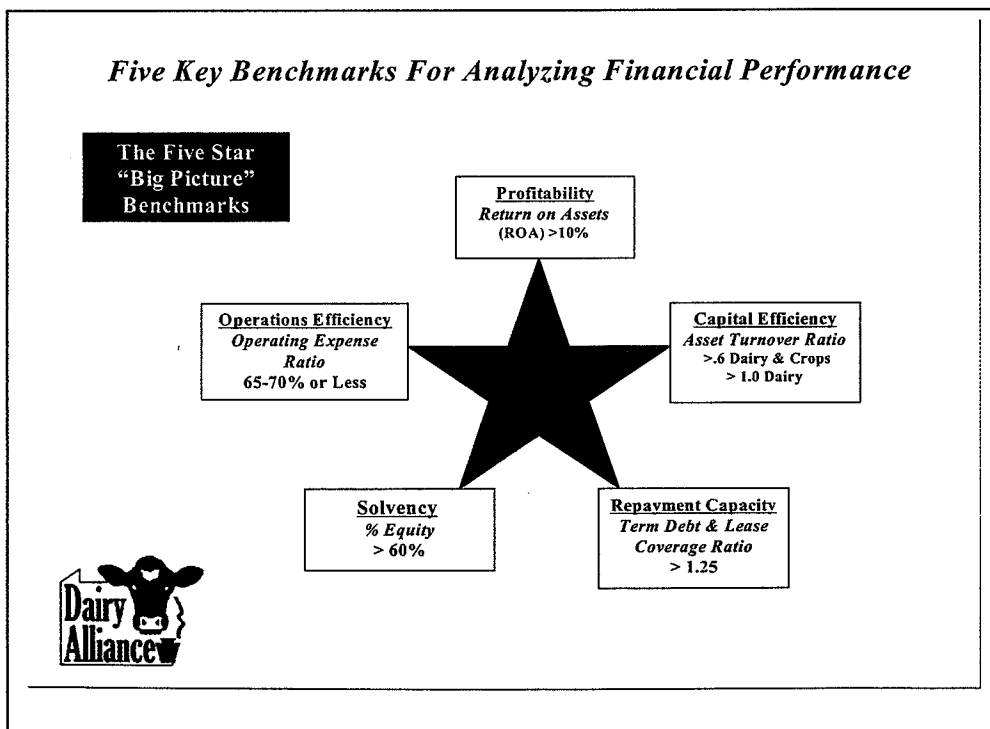
In conducting a comprehensive business analysis, dairy producers must be able to evaluate the financial performance of their business as well as production system performance. Producers must first evaluate the “Big Picture” view of both aspects of their business. This can be done with a set of ten key performance indicators, five addressing the financial criteria of the business and five assessing the production system or herd performance measures.

To begin the analysis, producers must answer five basic questions that provide the “Big Picture” view of the financial performance of their dairy business. This is accomplished by examining five critical financial criteria. These five questions are:

- 1) Is the business profitable? (Does it generate adequate returns to its resources?)
 - **Criteria - Profitability**
- 2) Is the business efficient in spending money to make money?
 - **Criteria - Operations efficiency**
- 3) Is the business utilizing capital efficiently?
 - **Criteria - Capital efficiency**
- 4) Is the business able to meet its financial obligations? Does it cash flow?
 - **Criteria - Liquidity & debt repayment**
- 5) How financially secure is the business?
 - **Criteria - Solvency**

The five key financial ratios that provide the answers to these questions, and some recommended benchmarks for each indicator, are illustrated in Figure 1. Business owners should calculate these five ratios for their business annually and should be able to recall them from memory at any time.

Figure 1. Five Key Financial Benchmarks

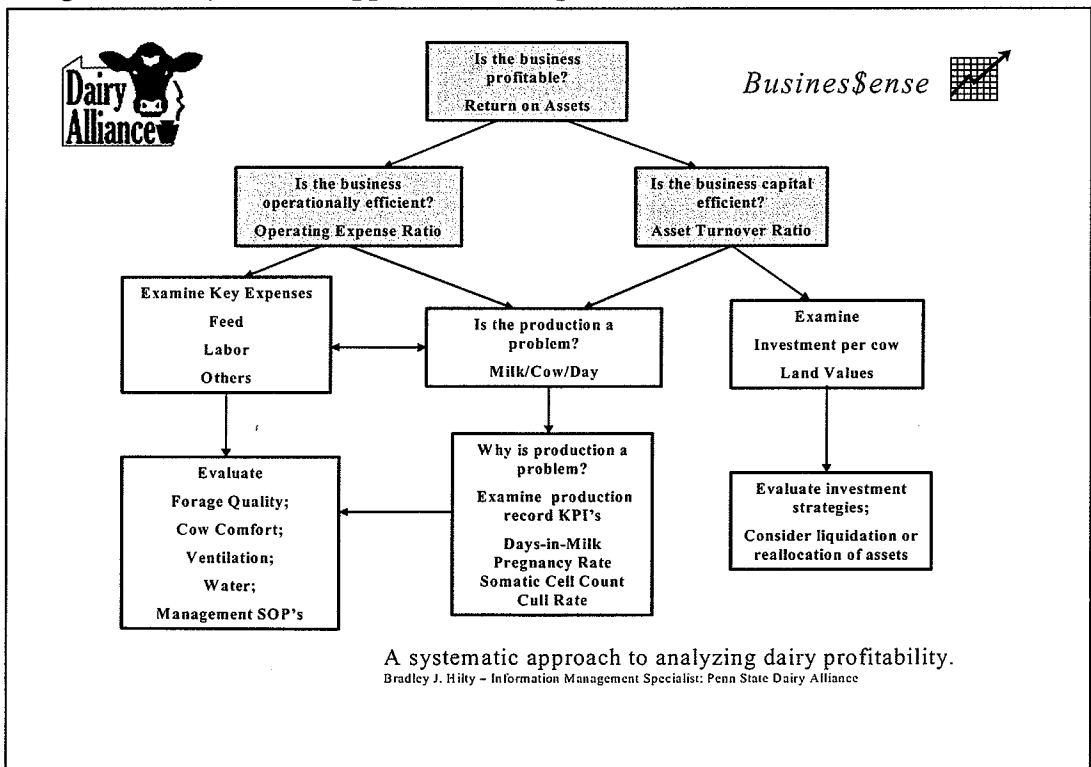


Once again, the five indicators of production efficiency only provide a “Big Picture” view of herd performance. They tell us little about specific problems with herd performance, but can help focus the analysis in the right direction. However, under each management area, there are a number of more detailed indicators that can help pinpoint where the bottlenecks in the production system might exist. These indicators are similar to the gauges on the dash board of a car. They will provide more specific information as to where problems might exist and the specific management areas that should be examined.

Understanding the relationship between each of these indicators and how they impact the profitability of the dairy business is important in conducting an integrated business analysis. We will define and examine the five financial benchmarks and the five production benchmarks in this publication, as well as others for evaluating key management areas that impact the profitability of dairy businesses, such as feed, labor, investment management, debt management and cost of production. These benchmarks can be used as guidelines in conducting an integrated business analysis to help you identify the areas you need to address to improve the profitability of you dairy business.

Having a systematic approach to integrating this data will make the analysis process easier to complete and increases the probability that the correct bottlenecks are detected and fixed. A model for this systematic approach to conducting an integrated business analysis, addressing profitability, is presented in Figure 3. A similar model can be used for evaluating cash flow problems.

Figure 3. A systematic approach to integrated business analysis



Key Measure of Profitability

Return on Assets

ROA evaluates how well the business generates returns to its resources.

Formula

$$\frac{\text{NFI}^1 \text{ (from operations)} + \text{Interest} - \text{Return to Owner \& Unpaid family labor \& management}}{\text{Average Total Farm Assets}}$$

Benchmarks

Average: 2-4%

Leaders: 12-15% or higher

Goal: 8-10%

Factors affecting ROA

- Operations efficiency
- Capital efficiency
- Production levels
- Milk price
- Value of operator labor and management & unpaid family labor

Keys to generating a high ROA

- Increasing production
- Careful investment in capital assets
- Controlling expenses

If ROA is less than desired goal, examine:

- Operating Expense Ratio
- Asset Turnover Ratio
- Production per cow
- Number operators drawing money from business

Key Point

Owner withdrawals can significantly impact ROA. It is important to use a number that represents fair compensation for the labor and management contributed by the principals (owners) involved in the business. This may or may not be equivalent to owner draws. If owner draws are less than an amount that would be considered fair compensation for labor and management, ROA will be overstated. Likewise, if an owner of a business is drawing out funds for extraordinary expenses, such as college tuition, using owner draws to calculate ROA, will result in ROA being understated. It is also important to compensate unpaid family labor to generate an accurate ROA.

Key Measure of Operations Efficiency

Operating Expense Ratio

Evaluates how efficient a business spends money to make money. Evaluates only operating expenses, not capital expenses (interest and depreciation). An expression of how much a business spends to make a dollar.

Formula:

$$\frac{\text{Total Expenses (minus interest and depreciation)}}{\text{Total Income}}$$

Benchmarks

Average: 74-78%

Leaders: < 65%

Goal: < 70%

Factors affecting OER

- Low production
- Poor cost control
- Poor forage quality
- Poor cow comfort levels
- Low milk price
- Poor labor management

Keys to Controlling the OER

- Increasing production
- Producing high quality forages
- Careful attention to cow comfort levels
- Differentiating between productive and non-productive expenses
- Controlling feed costs

If OER is higher than the Goal, Examine:

- Production per cow
- Cost per cwt. for key expenses
 - Feed
 - Labor
 - Replacements

Key Point

Accrual adjustments should be made to income and expenses prior to calculating this ratio. Income should include cull cow income, if replacements are raised on the farm or custom raised. Cutting costs is not the only remedy to a poor OER. Increasing production can improve the OER, by reducing the net cost of production of a single unit. In many instances, tightening up management can improve the OER. Improving forage quality, cow comfort, milk quality and reproductive performance can be as effective, if not more so, than cutting costs in reducing the OER of an operation.

Key Measure of Capital Efficiency

Asset Turnover Ratio

Asset Turnover Ratio (ATO) measures how efficiently the business uses its assets to generate income.

Formula:

$$\frac{\text{Gross Income (Revenues)*}}{\text{Average Total Assets**}}$$

* Finpack uses Value of Farm Production, (Gross Income-cost of goods sold)
**Business assets only

Benchmarks

Average: .40-.45

Leaders: >.65

Goal: >.60 For dairy operations that raise crops
>1.0 For dairy operations only

Factors affecting ATO

- Over investment in low earning assets
- Low production
- High land values
- Milk price

Keys to generating a high ATO

- Maximizing production
- Sound investment strategies
- Limiting investments in land & machinery

If ROA is less than goals, examine:

- Investment per cow
- Land values
- Machinery investment per cow
- Production per cow
- Herd size

Key Point

This ratio is a function of volume, price and investment values. Practicing wise investment strategies and maximizing production will help ensure that the business generates an acceptable asset turnover ratio. Milking 3 times per day; the use of BST; over-crowding, within reason, are all practices that can help improve the ATO of an operation. The high investment requirements in land and machinery will reduce this ratio for operations that raise crops versus those that do not. Highly fertile land will help improve the ATO. This indicator will be higher in operations that rent land and facilities. However, the operating expense ratio will be somewhat higher for renters. The ATO will drop in years of low milk prices. The values placed on assets will have a major impact on ATO.

Key Measure of Cash Flow/Repayment Capacity

Term Debt and Lease Coverage Ratio

Examines the amount of money available to pay required term debt payments as a percent of total debt payments.

Formula:

$$\frac{\text{Net Farm Income} + \text{Depreciation} + \text{Interest} + \text{Non-Farm Income-Owner Draws}^3}{\text{Principal and Interest Payments on Term Debt (plus Capital Lease Payments)}}$$

Benchmarks

Average: 1.0 – 1.15

Leaders: >1.5

Goal: >1.25

Factors affecting TDLCR

- Poor profitability
- Operations efficiency
- Debt levels & debt structure
- Production levels
- Milk price
- Owner draws

Keys to generating an acceptable TDLCR

- Controlled debt management
- Increasing production
- Controlling expenses
- Wise investment practices

If TDLCR is less than Goals, Examine:

- Debt per cow
- Investment per cow
- Operating Expense Ratio
- Owner draws
- Production per cow

Key Point

To illustrate this measure consider a dairy operation with annual principal and interest payments of \$100,000. If the business has \$110,000, after owner draws have been deducted, to make those payments, the TDLCR would be 1.10. If \$130,000 were available the TDLCR would be 1.30. The excess funds are money that is available to invest back into the business, pay down debt at an accelerated rate, put aside for additional risk protection, invest in a retirement account or it could be used for extraordinary family expenses, like college tuition. ³ We recommend evaluating the debt repayment capacity of the dairy business only by excluding non-farm income and including only those owner draws that are taken from the dairy business.

Key Measure of Solvency

Percent (%) Equity

Expresses the share of the business assets owned by the business owners.

Formula:

$$\frac{\text{Assets} - \text{Liabilities}}{\text{Total Assets}}$$

Benchmarks

Average: 50-55%

Leaders: 50-55%

Goal: 50-60% *

Factors affecting % Equity

- Debt levels
- Profitability
- Financial efficiency

Keys to increasing % Equity

- Sound investment management
- Careful debt management
- Operating a profitable business
- Expense control

If %Equity is less than Goals, Examine:

- Asset Turnover Ratio
- Return on Assets
- Debt per cow

Key Point

The percent equity of a business should be calculated using the market value of assets. Although a goal of 50-60 percent is listed for this indicator, it is more important to evaluate businesses on an individual basis over time, as it will vary during the life of a business. A mature business with 50-60 percent equity should probably own more of the business (70-80 percent equity). The percent equity of a business will decrease during periods of growth and should increase as debt is paid off. Tragedies, such as drought or disease, usually cause a drop in this ratio. Percent equity is driven by the profitability of a business. A highly profitable business with 30-35 percent equity may actually be performing better than a business with 65-70 percent equity. Managers of highly profitable businesses tend to leverage their business by borrowing money at a lower rate than the business generates.

Solvency measures the ability of a business to cover all of its financial obligations if liquidated at a given point in time. It is important to include deferred taxes on the balance sheet or percent equity could be grossly overstated, giving the owners a false sense of security. A business with \$1,000,000 in assets and 50 percent equity appears to have a net worth of \$500,000. However, if upon liquidation the business owes \$200,000 in capital gains taxes, after the sale of assets, the owners would only have \$300,000 left to reinvest after liquidating the business. Therefore, it is extremely important to include deferred taxes in liabilities.



An upward trend in percent equity is imperative for a business that is not in a growth phase. However, even growing businesses must see upward trends in this ratio if they want to continue growing.

To Increase Percent Equity

- **Improve profitability**
* See Return on Assets
- **Reduce debt**
* Consider liquidation of low or non-earning assets to pay off debt. But be sure to consider tax consequences.
- **Make wise investments**
* Invest only in items that have a rapid payback (1-2 or 3-5 years)