

Controlling Costs

Theories, Approaches and Impacts

Jason Karszes
Wayne Knoblauch
Tom Overton

Department of Applied Economics and Management
Department of Animal Science
College of Agricultural and Life Sciences
Cornell University

Operations Management

- Maximize profits from operations
- Utilize profit equation in decision making

Profit Equation

$$\text{Profit} = \text{Volume} \times \text{Margin}(\text{Price} - \text{Cost})$$

- Need to remember interactions between all three areas

Cost Control

- Three principle means
 - Chew down price
 - Use less product
 - Maximize economic use of product

What do managers usually work on first?

Chew on Price

- Clear cut savings
- Have been working on for many years
- Need to be always looking at, but have to remember other areas
- How far can we really go with this?

Use Less Product

- Can have bigger savings
- Can also increase costs
- Harder to measure impact
- Really depends on the economic use scenario

Maximum Economic Use

Obtained when utilizing another dollar of input only generates another dollar of income.

- Also known as the point of diminishing returns.
- Profit equation is central in determining this point
- May not be maximum output!

Decision Tool

- Utilize partial budget approach
- Four areas to look at.
 - What costs go up?
 - What costs go down?
 - What income goes up?
 - What income goes down?

Looking at Inputs

- What is total cost of utilizing another unit of input?
 - Cost of the input
 - Change in costs of other inputs impacted?
 - Actual supplies
 - Management
 - Labor

Looking at Inputs

- What output is generated?
- What is the income that is generated from the output?
 - After marketing costs - not gross income
- Looks at volume and price portion of profit equation

Looking at Inputs

- If the income is greater than the expenses, then utilize the input.
- If there is a positive result, need to use another input.
- Keep going until there no longer is a positive result.

What are the Risks

- Hard vs soft dollars
 - Hard = guaranteed to happen
 - Usually on the expense side
 - Sometimes on the income side
 - Soft = may happen but dependent on a lot of things
 - Usually on the income side
 - Can also be on the expense side
 - Increased milk production always soft

What are the Risks

- **Price changes**
 - Input changes
 - Output changes

Price Changes

- **Need to reevaluate input use when prices change - and stay changed for periods of time.**
- **Need to utilize profit equation.**
- **Costs can actually go up if decrease use of the wrong input.**

Feed Costs

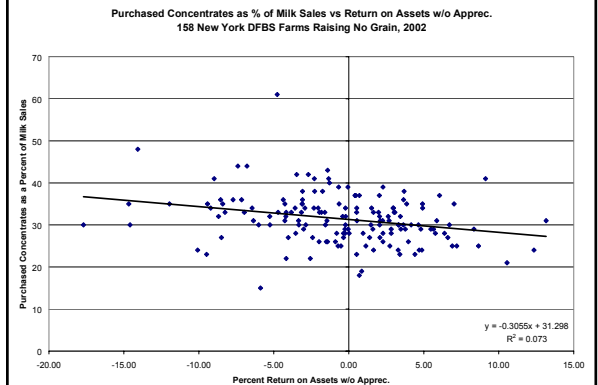
- **Maximum economic level is when?**
 - % of milk sales is 30%?
 - % of milk sales is the lower than goal and lower than last year?
 - Lower than any of your neighbors?
 - When milk income over feed costs is maximized within your management system?

Feed Costs

- **Purchased grain and concentrates**
 - **Purchased forages**
 - **Home grown grain and forage**
- Focusing on purchased grain and concentrates**

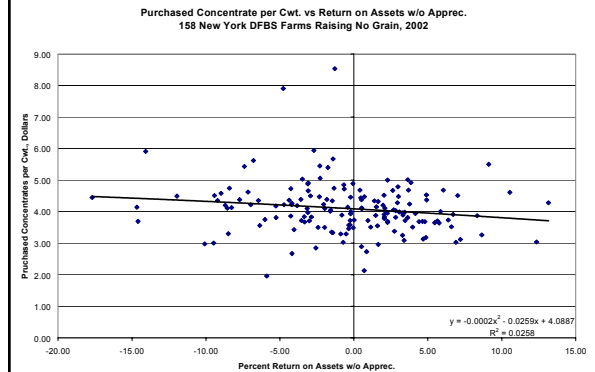
Purchased Concentrates as % of Milk Sales

- **Total purchased concentrates divided by milk sales times 100.**
- **Compares cost of input to value of output**
- **Widely used as measure to track feed costs**
- **Doesn't look at volume issue**



Feed Cost per Cwt.

- Total feed costs divided by number of cwt.'s produced.
- Just looking at costs.
- Used to track daily input levels
- Not impacted by output price changes.
- Volume has little impact - number of cows



Income Over Purchased Grain Costs

- Look at per cow - the producing unit.
- Over a period of time
- Gross price times milk produced minus total purchased feed expense.
- Looking at both cost and income.

Income Over Purchased Grain Costs

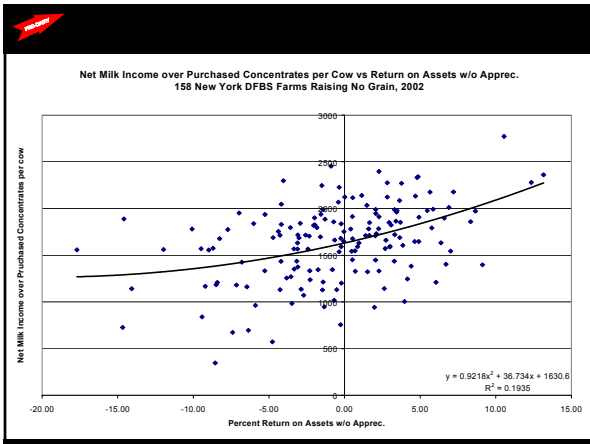
- Point of diminishing returns central to calculating.
- When point is reached and then surpassed, income starts going down.
- Takes into account price and amount of product used.

Income Over Purchased Grain Costs

- Want to maintain or increase over time to generate revenue to cover all other variable and fixed expenses associated with the business

Income Over Purchased Grain Costs

- Is there a concern with this measure?
 - Only looking at feed costs. Not accounting for other costs that may change due to utilizing more feed inputs or different feed inputs.
 - Chopper, feed storage, feet & legs, vet & medicine, breeding, etc



Using as a Management Tool

- Calculate quarterly
- Actual milk price and fixed milk price
 - What did price change do?
 - What did management changes do?
- Can generate historical for benchmark

Using as a Management Tool

- How does it compare to the past?
- If make a change, how will it change income over feed?
- After change, did the expected change occur?

Using as a Management Tool

- Can also include purchased forages.
- Can also include home grown forages.
- Records needed to calculate.

Summary

- Profit equation is key.
- Goal is not to minimize costs but to maximize profit
- Need to utilize combination of approaches to control costs
- Looking at just feed costs doesn't look at complete picture.