

GROWTH MANAGEMENT, MILK PRICE, AND MARGIN OUTCOMES: FARM-LEVEL CONSIDERATIONS

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Michigan 2002-2010

Year	2002	2003	2004	2005	2006	2007	2008	2009	2010
ROA (%)	3.2	4.3	7.7	6.3	5.5	11.3	7.0	0.4	7.0
Milk Price (\$/cwt)	12.47	12.59	16.42	15.70	13.44	20.21	19.41	13.31	16.78
Purch. Feed (\$/cwt)	3.45	3.56	4.36	4.06	3.74	5.32	5.56	4.56	5.06
Tot. Feed Cost (\$/cwt)	7.01	7.18	7.47	8.14	8.29	9.55	12.54	11.35	10.14
IOFC (\$/cwt)	5.46	5.41	8.95	7.56	5.15	10.66	6.87	1.96	6.64

Margin Protection Program

- All Milk Price – Average Feed Costs
- Average Feed Costs=F(Corn,Soy,Hay)
 - US prices
 - Weights vary with source and version
 - Higher weights imply lower margin
 - More likely high feed prices will trigger
- Base margin at \$4/cwt has
 - No premium
 - 80% of min(production hist/6, actual 2 mo production)
- Supplemental margins by \$0.50/cwt up to \$8/cwt
 - Premiums increase with margin
 - Coverage on 25 to 90% of production

Market Stabilization Program

- Revenue for milk production progressively reduced relative to base as margin falls below \$6/cwt or \$5/cwt for 2 consecutive months or \$4/cwt for one month
- When US dairy product prices are X% above world dairy product price, then program is suspended
- Participation in stabilization program required to be in margin protection program

Farm Participation Decision

- ❑ Trade off guaranteed margin (less fees and premiums) with potentially lower farm milk revenue for some periods
- ❑ Participate when expected benefits from margin protection exceed expected costs from market stabilization

Participate if

$E(\text{Margin protection} + \text{Other Benefits})$

$>$

$E(\text{Stabilization program withholds} + \text{Stabilization program farm compliance costs})$

+ Fees + Premiums

+ Net benefits from alternative tools

Key Issues

- ▣ Margin size and relative cost of substitute risk management tools
- ▣ Margin and stabilization triggers: how often and how much?
- ▣ Producer ability to adjust production in short-run
- ▣ Relative benefits by herd size, herd life-cycle, and region
- ▣ Relative benefits of programs as a function of participation rates

Farm Margin Considerations

- ▣ Basis issues with both milk and feed prices used in protected margin

- ▣ Role of substitutes:
 - Forward contracts
 - Futures and options
 - LGM-Dairy

Explaining the Use of Risk Management Tools

Variable	Description	Milk Price Risk Tools	Feed Price Risk Tools
		Marginal Effect	Marginal Effect
Herd size	milk cows	0.0002*	0.0006*
Land operated	hectares	0.0002	0.0005*
Solvency risk	debt-to-asset ratio>0.6 1 if true; 0 else	0.078	0.052
Cooperative member	1 if true 0 else	-0.023	0.127
Business organization	1 if sole proprietor 0 else	-0.125*	-0.104
Operator age	Years	-0.003	-0.008*
Operator education	Years	0.013	0.034
% Correct Predictions		81	74

Reasons farmers had not used price risk management tools

Reason	% of Responses
Basis risk	22.2
Cost	18.7
Difficult to use	13.8
Coop markets milk	12.3
Limited management time	6.9
Lack of understanding	6.9
Operation too small	3.9
Other	15.3

Farm Production Management Considerations

- Most operations are not actively shrinking herd size or total milk production
 - Trend US milk per cow growth rate is 1.55%
 - Large herd expansions are common
- Thus, ability to control milk production in short-run is a key consideration
 - Other uses for farm milk
 - Calves, pigs, other enterprises
 - Lactation distribution
 - Feed issues
 - Herd size/culling

Stabilization production adjustments

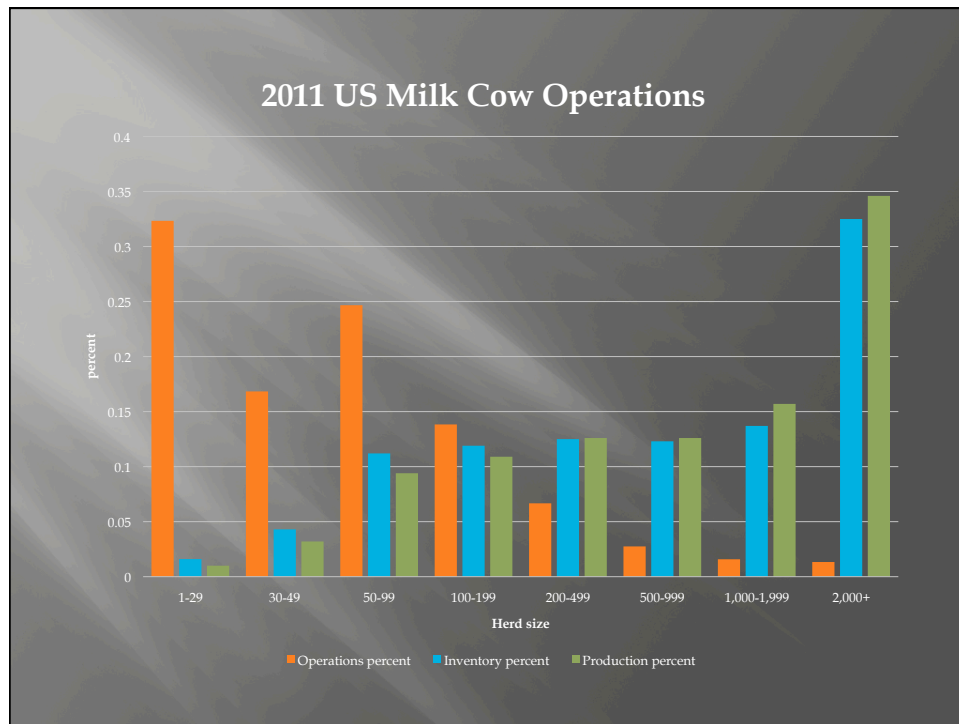
- Short-run culling cows is easiest but
 - Sub-optimal culling decisions are costly
 - Low end cows often produce less than one might think and others become more productive when they are gone
 - Selling heifers cuts that farm milk production but not market production
- Farmers hesitant to change diets
 - Longer run lactation and reproduction implications
- Perhaps a solid month required to make changes
- If reduction is expected to be very short (e.g., one month) some might “blow right through it” – i.e., not change milk production – even if they are participating

Farm Specific Participation Decision Factors

- ❑ Is the operation planning on expanding in near future (e.g., bringing a son/ daughter into operation)?
- ❑ Are the barns currently over-crowded?

Participation Decision (cont.)

- ❑ Current debt load may be important
 - Solvency issues make poor margin more risky
 - Will lenders encourage participation of heavily leveraged farms?
 - Cash flow considerations – cannot pay for barns that are not full
- ❑ Reaction to expected participation of others



Farm Size Considerations

- Pros for larger herd participation:
 - Larger herds more likely to have info such as daily milk weights – make adjustments less difficult
 - Larger herds might be at their longer-run herd size and not concerned with expansion
 - Larger herds might have more debt and more influence by lenders

- Cons for larger herd participation:
 - Large herds may already be utilizing price risk management instruments
 - Larger herds might think other goals are more important

Policy Options

Policy Option	Policy Description
End price support program	End the open government offer to purchase butter, nonfat dry milk and cheese.
End MILC	End deficiency payments triggered by Class I Boston milk prices and feed prices.
Income over feed margin protection	Implement a program that pays farmers if milk-feed margin is below trigger.
Growth management	Implement a program that withholds payment on portion of milk if milk-feed margin is below trigger.
End product pricing	Replace wholesale product prices used to set minimum milk class prices with a competitive pay price.
End ethanol subsidies	Eliminate ethanol blending credits and tariffs on imported ethanol.
End all dairy policies	Eliminate all programs (marketing orders, price support, DEIP, MILC, promotion).

Farmer Preference Shares

Policy Option	All Herds	<300 cows	300+ cows
	Percent		
End price support program	13.8	13.3	9.0
End MILC	12.0	11.8	7.5
Income over feed margin protection	17.2	25.8	8.1
Growth management	12.7	17.6	5.8
End product pricing	14.1	17.3	7.5
End ethanol subsidies	19.7	6.4	53.9
End all dairy policies	10.5	7.8	8.2

Concluding Comments

- ▣ Many dairy farm operators convinced some form of this program will be passed
- ▣ Need for decision support models
- ▣ Are herds holding onto cows they would normally cull to build “base” production for these programs in anticipation of this farm bill?
- ▣ Market situation at sign up may have large effect on participation
 - Milk and feed prices
 - More likely with current prices than with last years
 - Many farms have feed prepaid this year so are not noticing cash feed prices at current time