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The Future of Dairy in the West

2013 June WAEA Symposium

Katelyn McCulloch

Dairy & Forage Economist

Livestock Marketing Information Center

Panelists

- Mr. Wilson Gray, Extension Economist at University of Idaho
 - Financial Condition of the Dairy Industry
- Dr. Joleen Hadrich, Assistant Professor at Colorado State University
 - Environmental Challenges
- Dr. David Anderson, Professor at Texas A&M University
 - Dairy Policy

The Future of Dairy in the West

The Financial Condition

C. Wilson Gray, District Extension Economist
University of Idaho
WAEA 2013

Western Dairies

Adapting to Change

- Western dairies were built on the “California Model”
 - ▶ Small land base
 - ▶ Purchase most inputs including feed
 - ▶ Low cost labour
 - Lower milk price offset by low input costs
- Mid-West/New England model
 - ▶ Land base to produce most feed
 - ▶ More family labour as “hands on”

Western Dairies

Adapting to Change

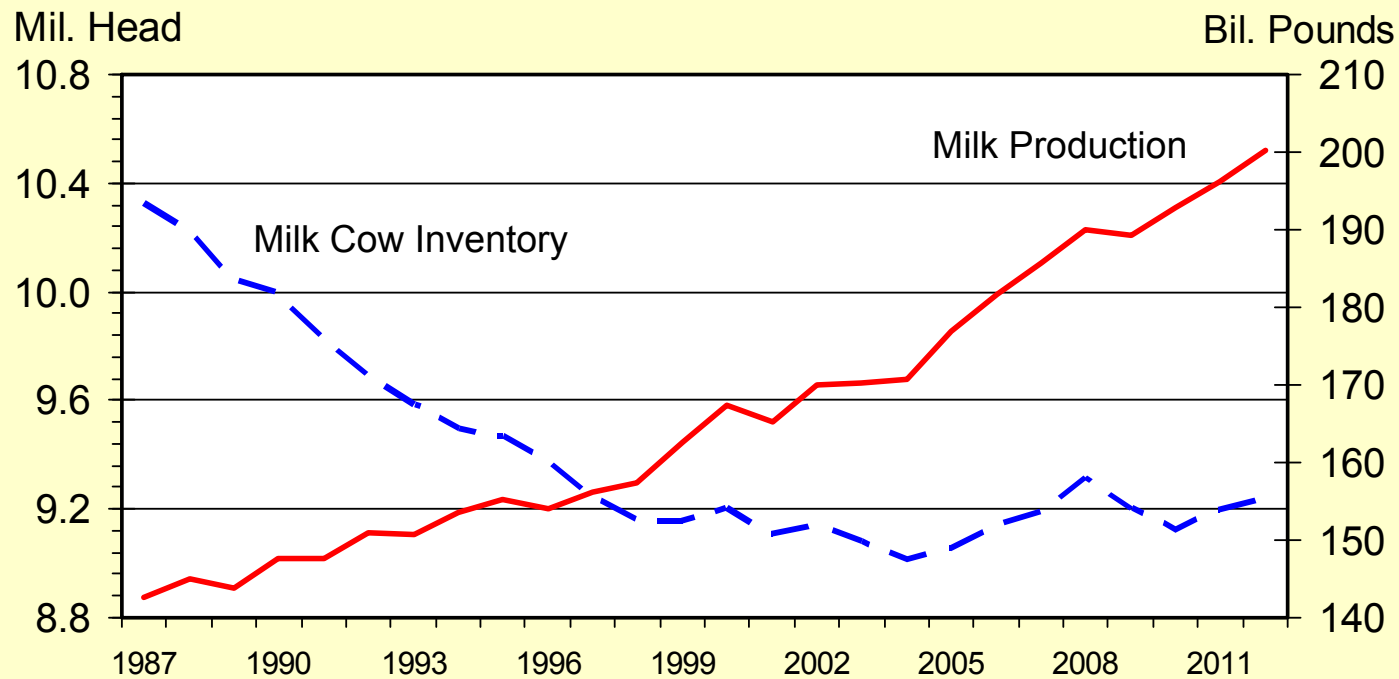
- Paradigm Shift since mid-2000's
 - ▶ Feed became increasingly costly
 - Renewable fuels standard, drought, floods, etc.
 - ▶ Environmental regulation changes
 - ▶ Government “safety net” was very low
 - Federal budget deficits
 - Farm bill
 - Lender regulation & scrutiny
- Where is the industry today?

Western Dairies Adapting to Change

- Debt
- Milk prices
- Feed costs
- Income over feed costs (the margin)
- Challenges for the survivors

Milk Productivity Has Increased

MILK PRODUCTION vs. MILK COW INVENTORY Average Annual Inventory, U.S.



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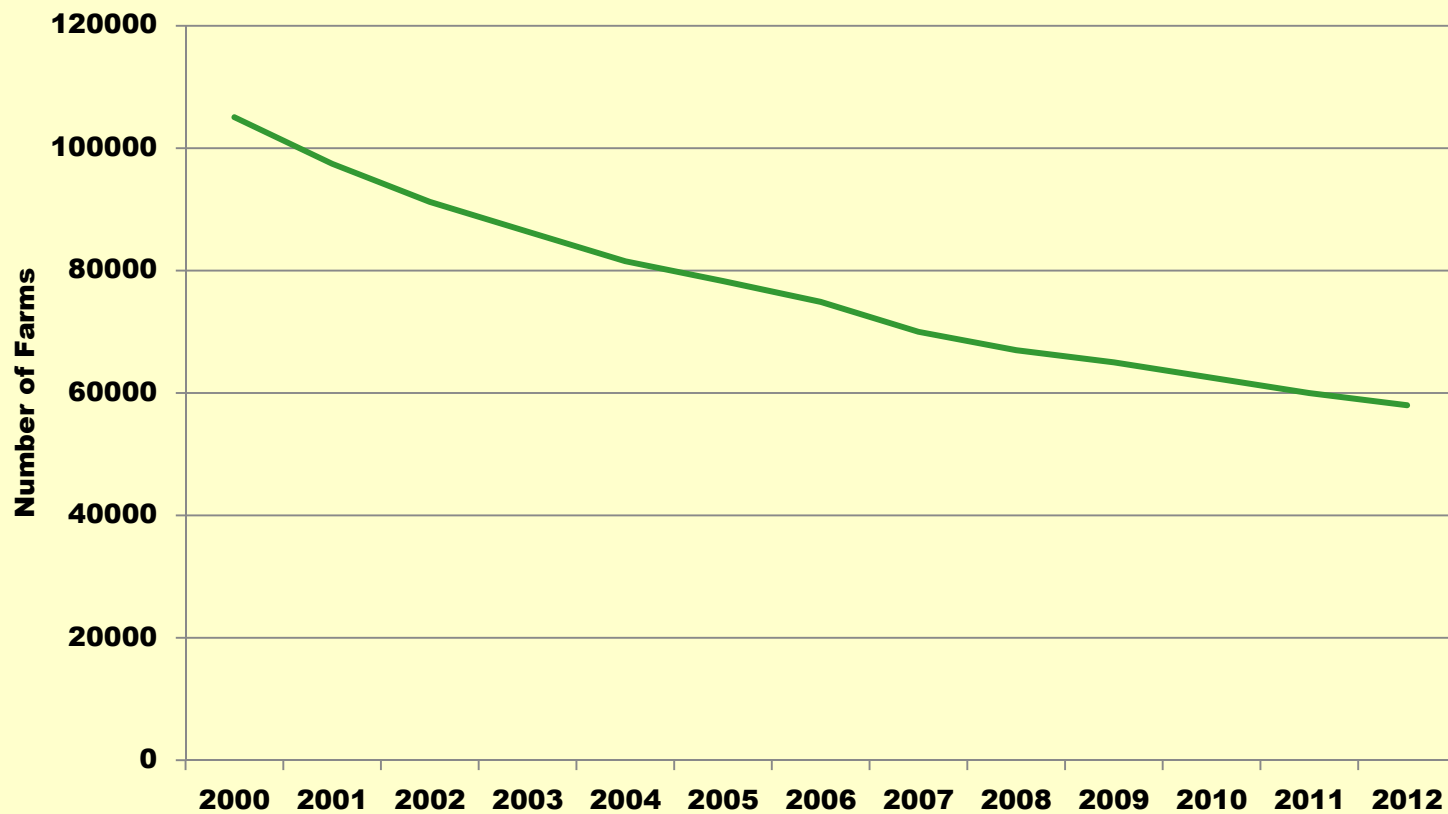
Data Source: USDA/NASS

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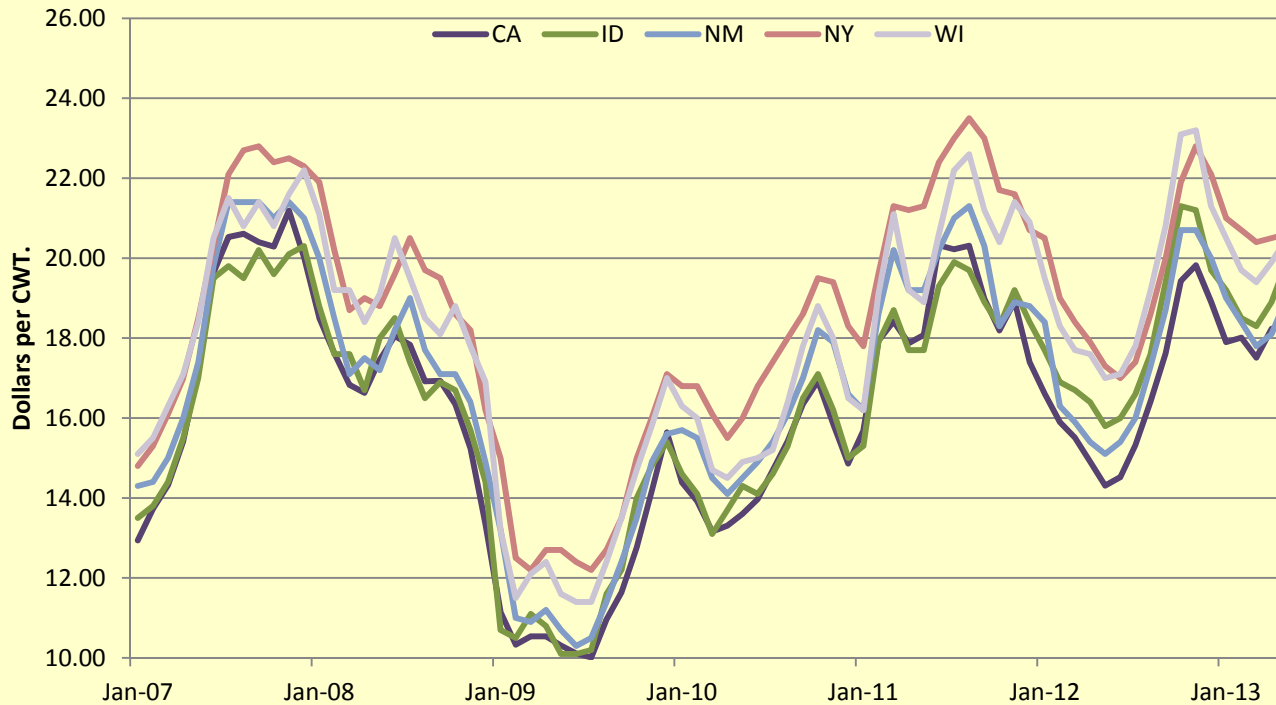
Operations Have Decreased 45%

US Dairy Operations



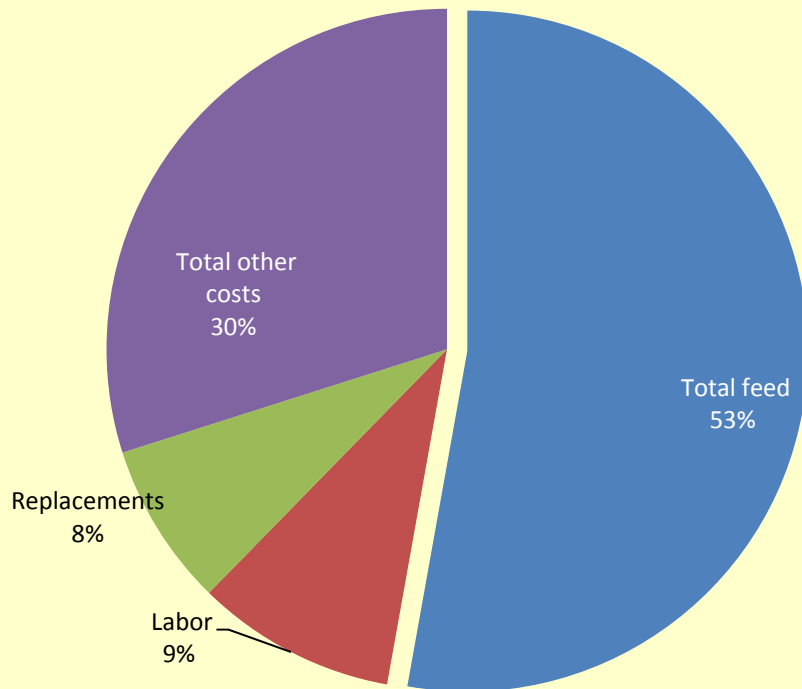
Western Prices Are Below Other Areas

All Milk Price

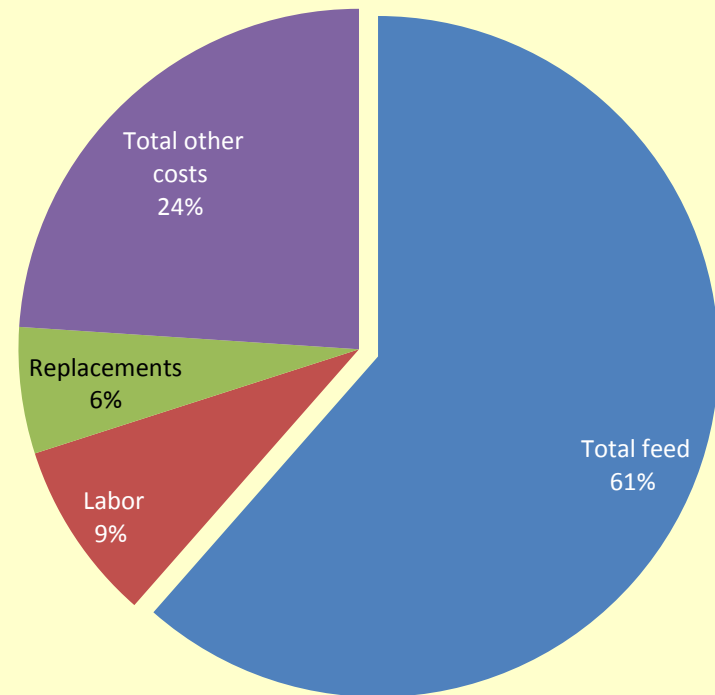


Feed Cost Is UP 15 Percent

2008 Cost Breakdown



2012 Cost Breakdown



The Double Whammy...

- Feed costs skyrocketed in 2008
- Milk Prices record low in 2009
- Years leading up to 2008 had been good
 - ▶ Many operations were expanding
 - ▶ Increased debt in an industry that operated on high leverage
 - ▶ Attitude that good times were here to stay

Fickle Finger of Fate Strikes

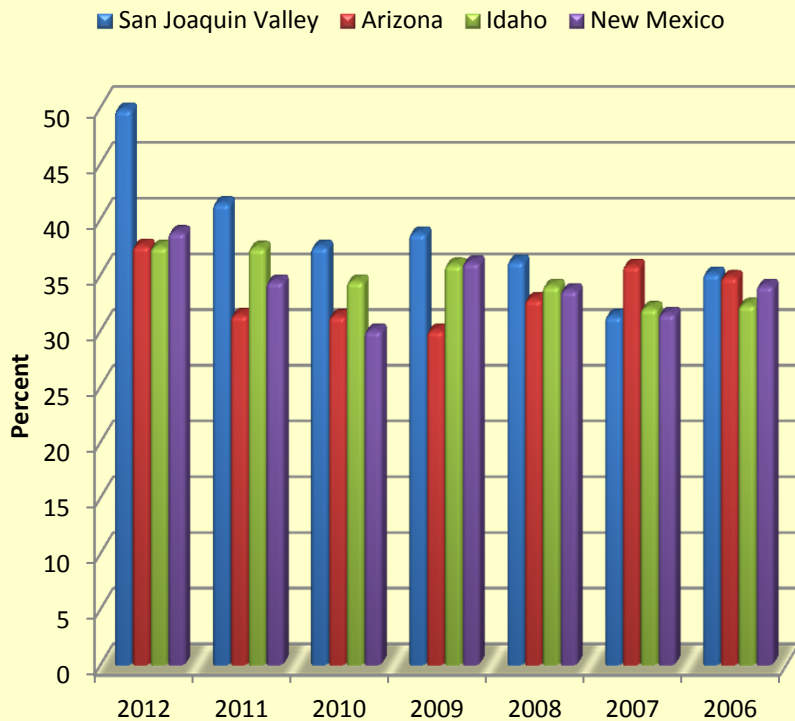
- In 2009 operations were losing from \$50 to over \$100 per cow per month
 - ▶ 1,000 cows = \$100,000/month = \$1.2 million in a year
- Price volatility has been the norm since
 - ▶ Both feed and milk prices affected
 - ▶ Margins (**income over feed**) have remained tight to negative for most

Coping Strategies

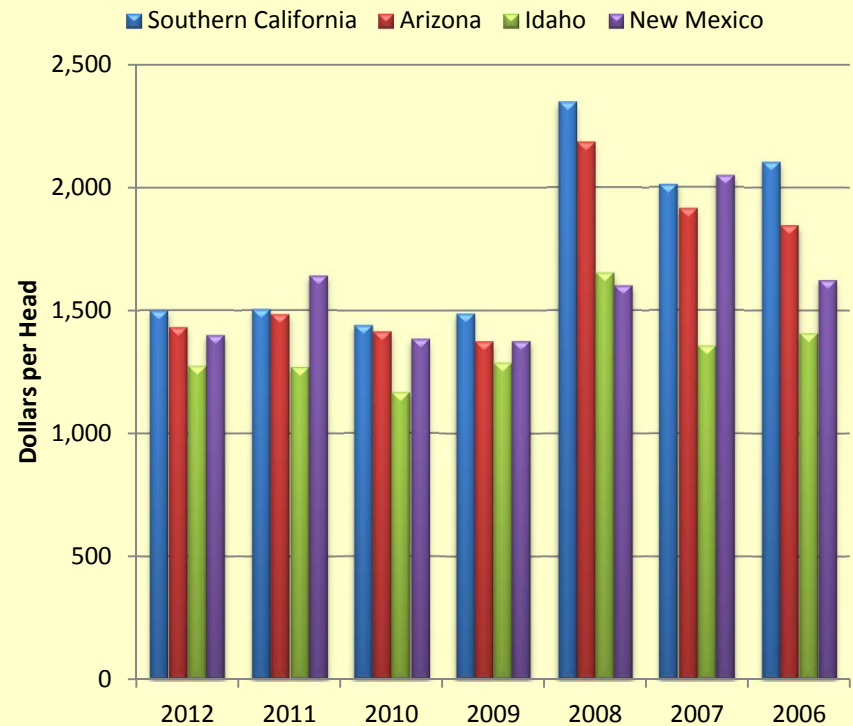
- Heavier culling of herds
- Cost cutting – cost saving measures
- Springer replacement prices weakened
 - ▶ Prices down by a third
 - ▶ More use of sexed semen = heifer abundance
- Controversy over rBst less newsworthy

New cows @ lower cost

Herd Turnover

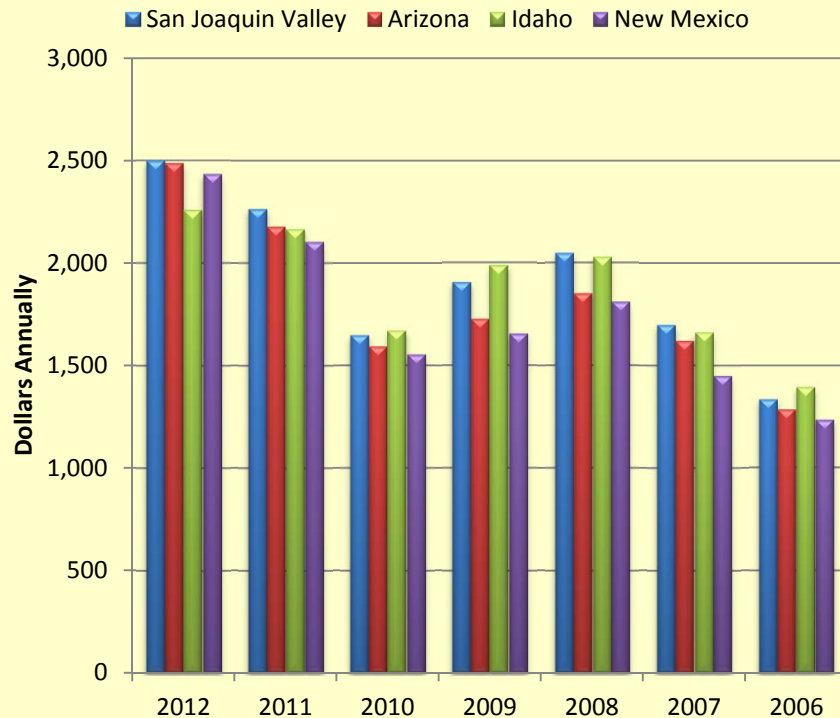


Cost of Replacement Springer

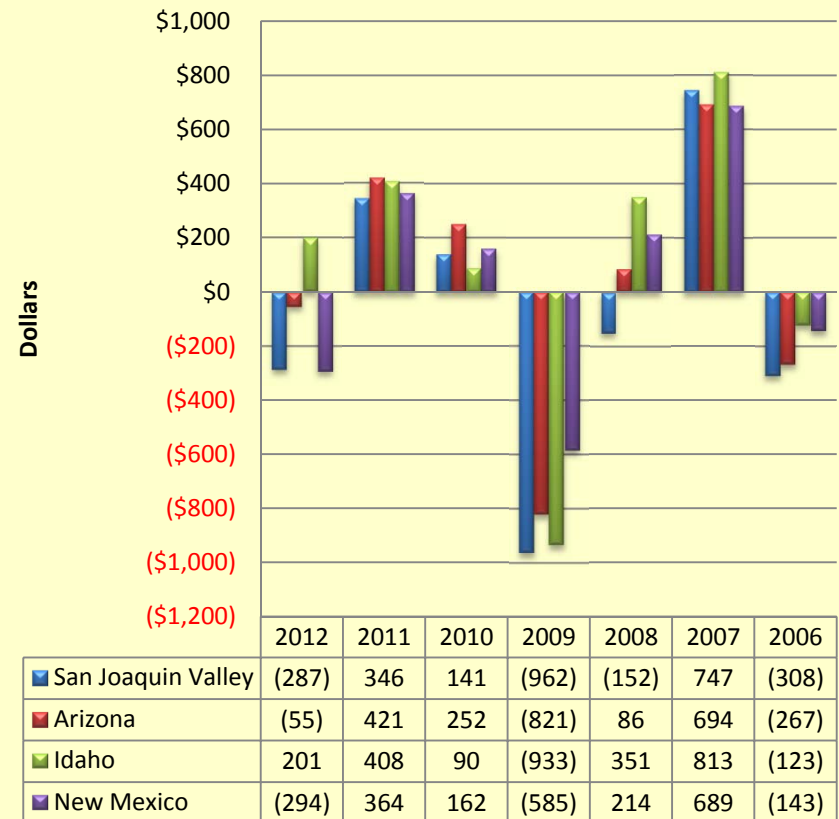


Feed Impacts Net Revenues

Feed Cost per Head



Net per Head



A Lenders Dilemma...

- Several Lenders Shared the Financial “Pie”
 - ▶ Bank of America – Wells Fargo – Farm Credit Services – Rabobank – various local lenders
- Since 2009
 - ▶ A few have left the scene or are looking for the exit
 - ▶ Most others are attempting to work out debt as much as possible

The Dilemma

- 2006-2009 rapid industry expansion
- \$2,000 + per head for springer's
 - ▶ Result = growth but no equity
- Those that didn't expand or were not as highly leveraged made the losses of 2009 back in 2010 & 2011.
 - ▶ Key factor: Land base for feed production
 - ▶ Many operations placed in "Special Assets"

Theme of the day = Caution

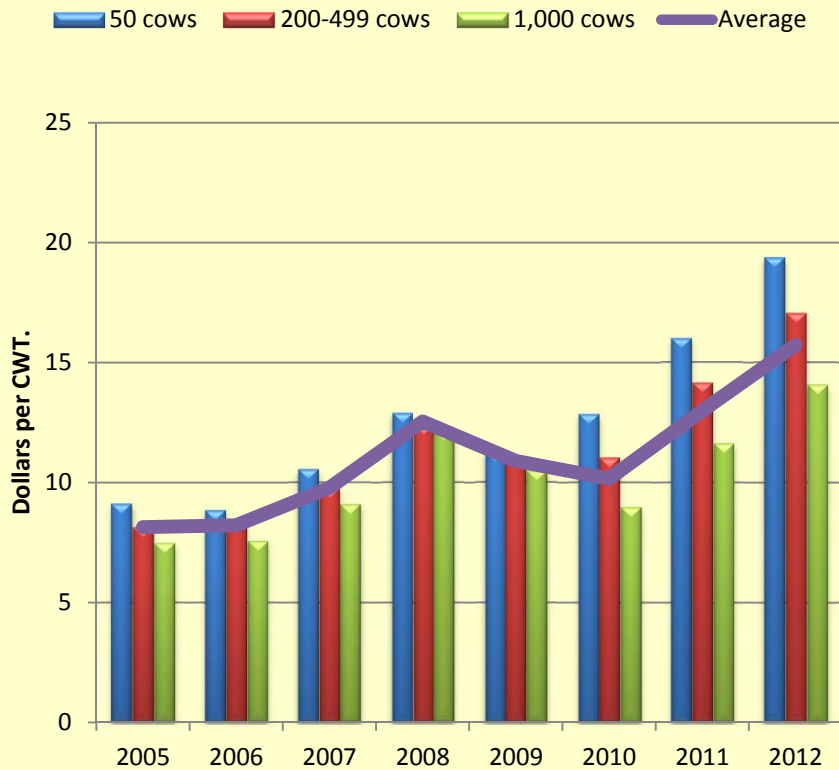
- Lenders perspective
 - ▶ Dodd-Frank has meant a more “cautious” approach
 - ▶ Asset purchases now require 35-40% equity
 - ▶ Feed & cows require 40-50% equity
 - ▶ More pay as you go
 - ▶ Debt reduction the focus

Theme of the day = Caution

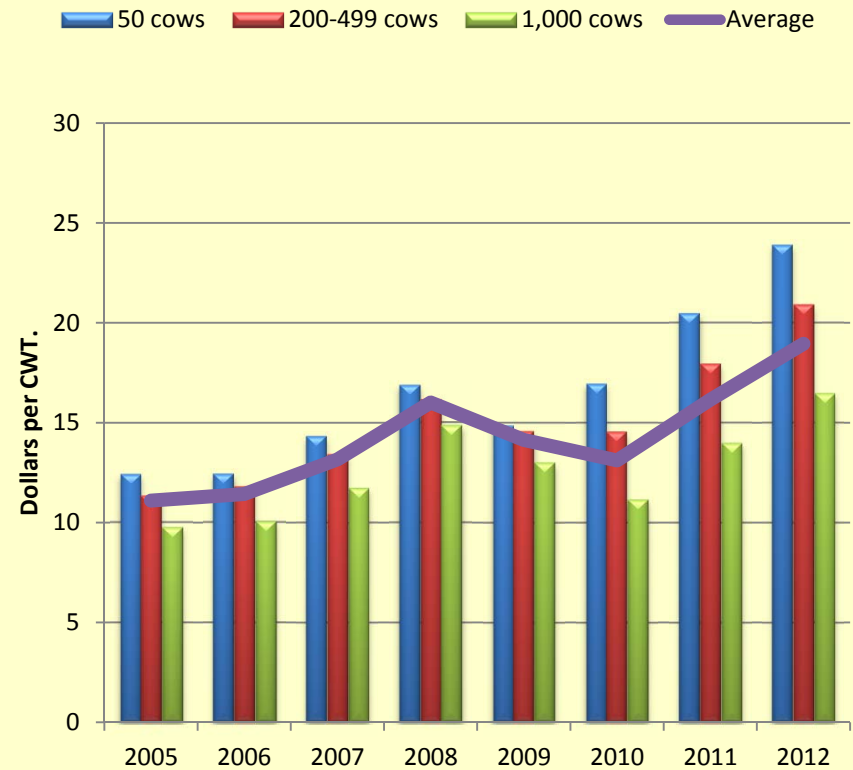
- Dairyman's perspective
 - ▶ Life as a "Special Asset"
 - Lender takes over account management
 - Lender is first in line for any payments due
 - Cash is the only way to pay feed, other
 - Cancel use of anything that is optional
 - Bankruptcy has been the option for many
 - ▶ Unsecured creditors left high and dry
 - Feed suppliers, Veterinary, other consultants
 - Repairs & maintenance deferred

Does Size Matter?

Total Feed Cost

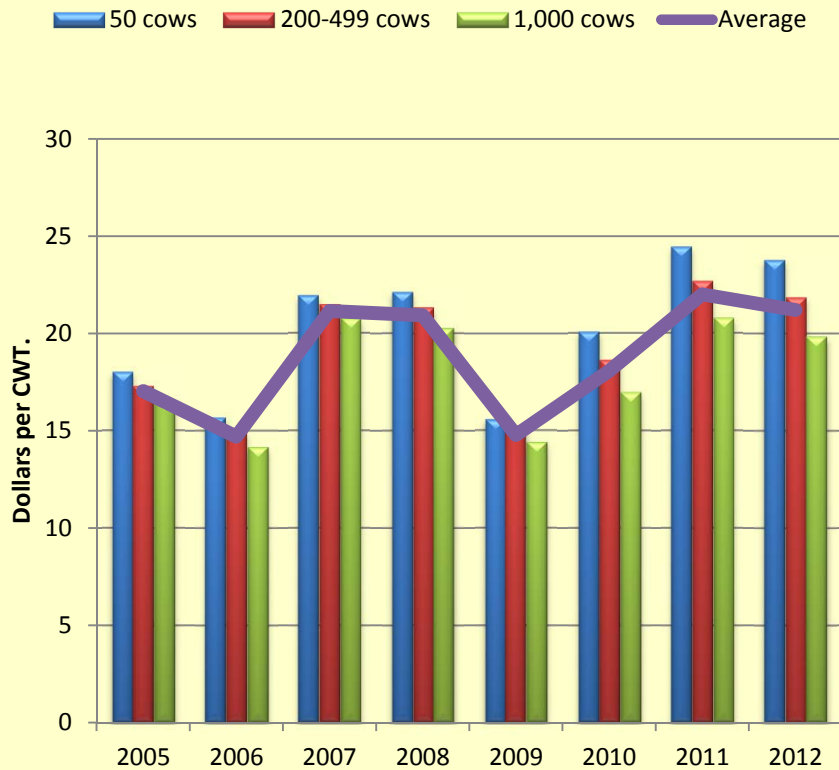


Total Operating Cost

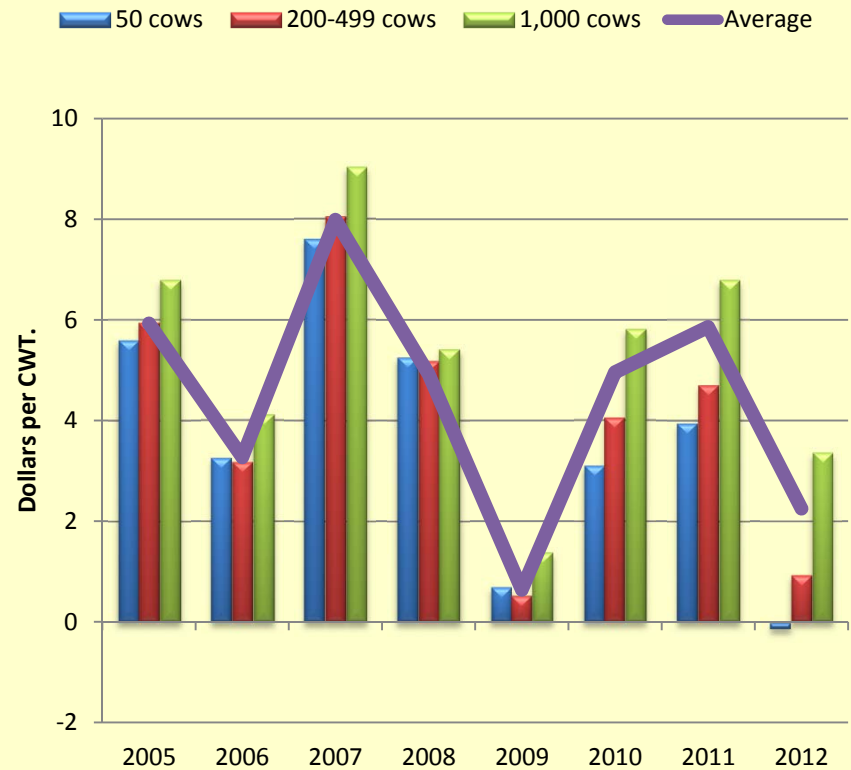


Size Matters...

Gross Revenue

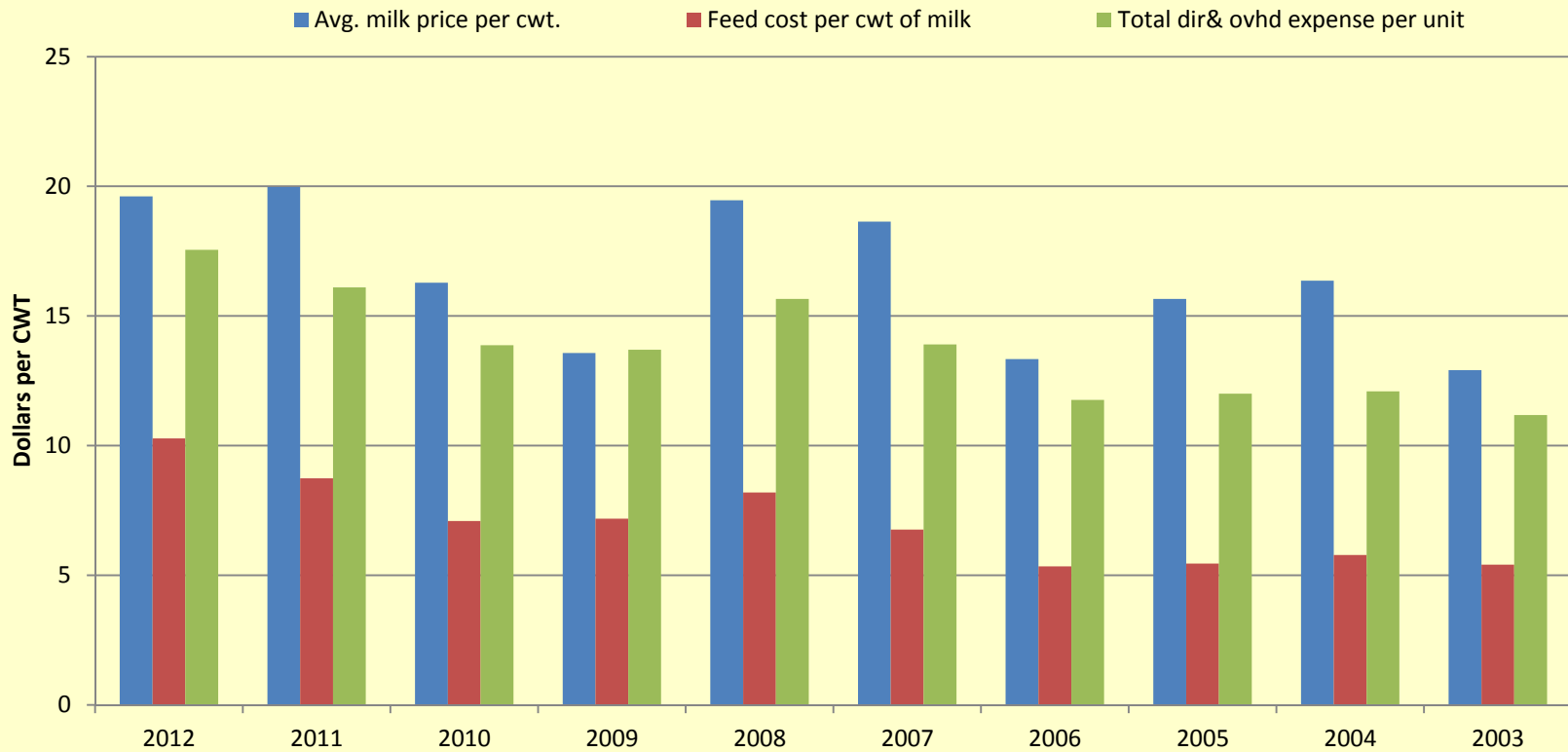


Net Over Operating Costs



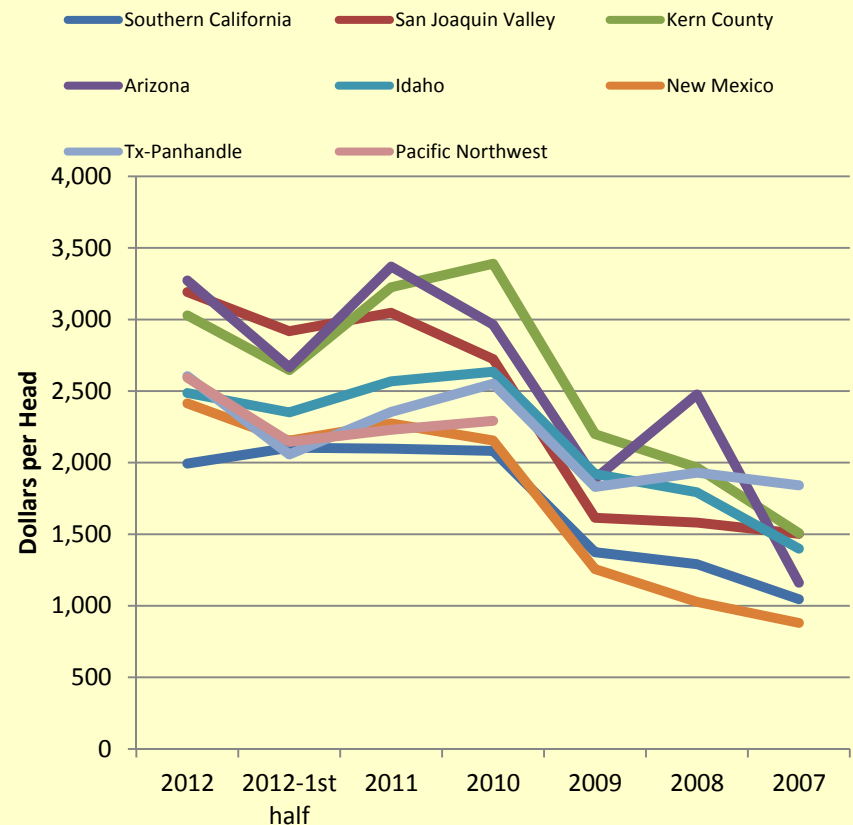
Location Too?

Mid-Western Dairies



Rising Debt per Cow

- A Financial Hole
 - ▶ Continued tight margins
 - ▶ Financial stress continues
- Leverage = 4 letter word in today's world



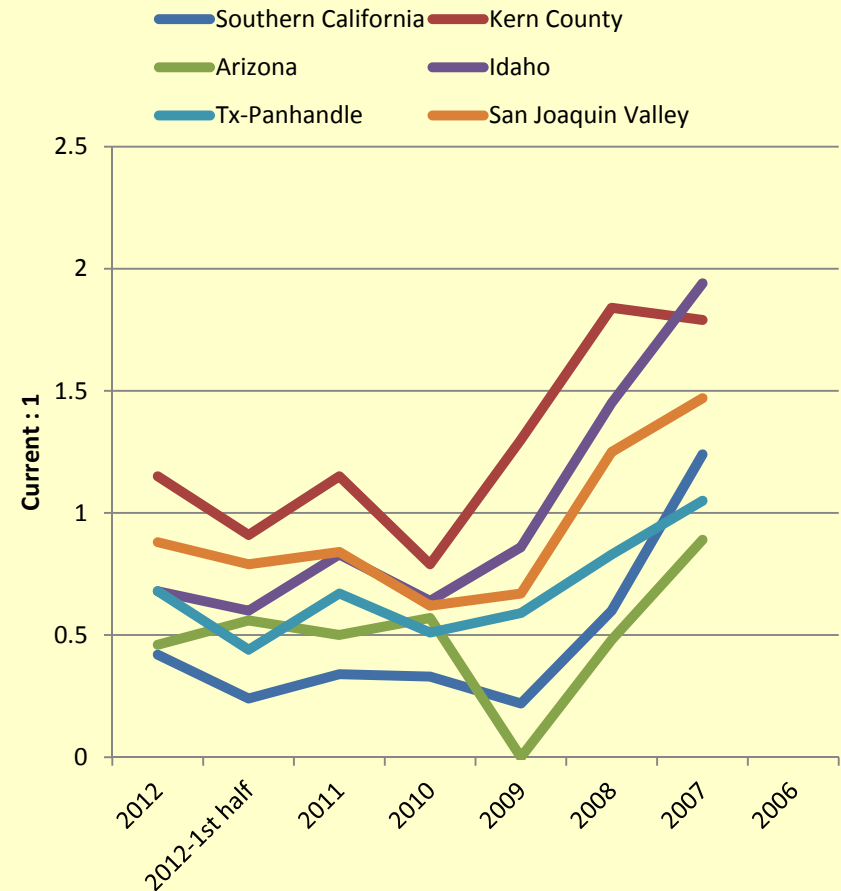
How current are we?

Vulnerable 1.1

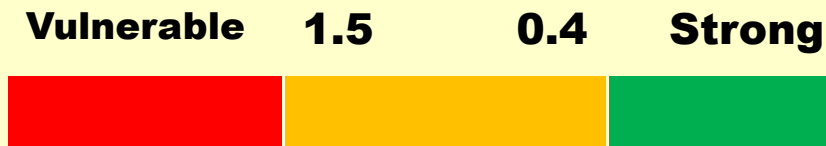
1.7 Strong



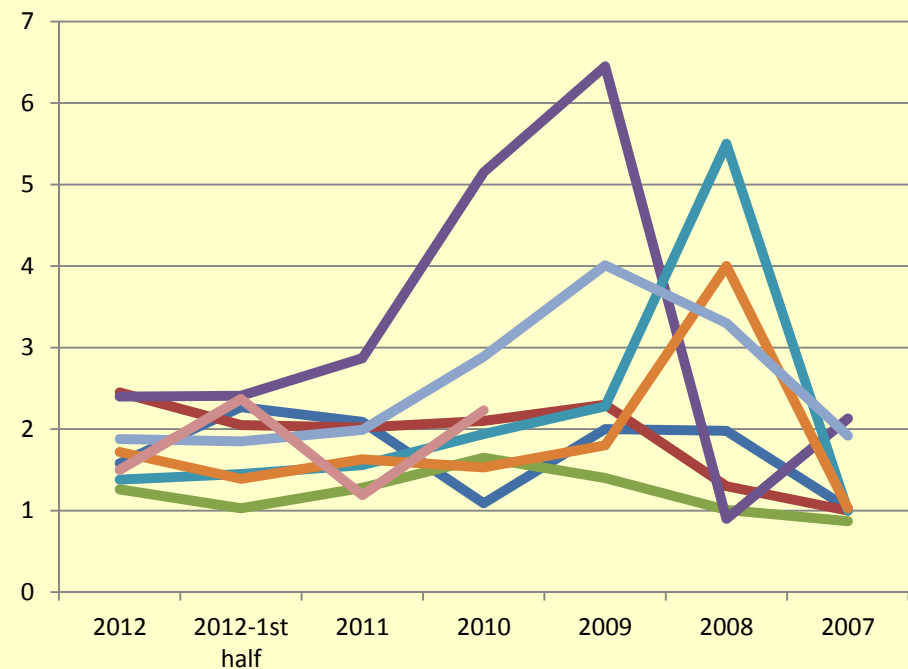
- Current assets divided by current liabilities
- Cash Flow has slowed
- Gradual (very) improvement
- Weather and feed situation important to cost control



Debt to Equity Ratio



- Total debt divided by total equity
 - Higher value = more capital supplied by borrowing
- This was on the increase (more leverage)
- Still high but improving

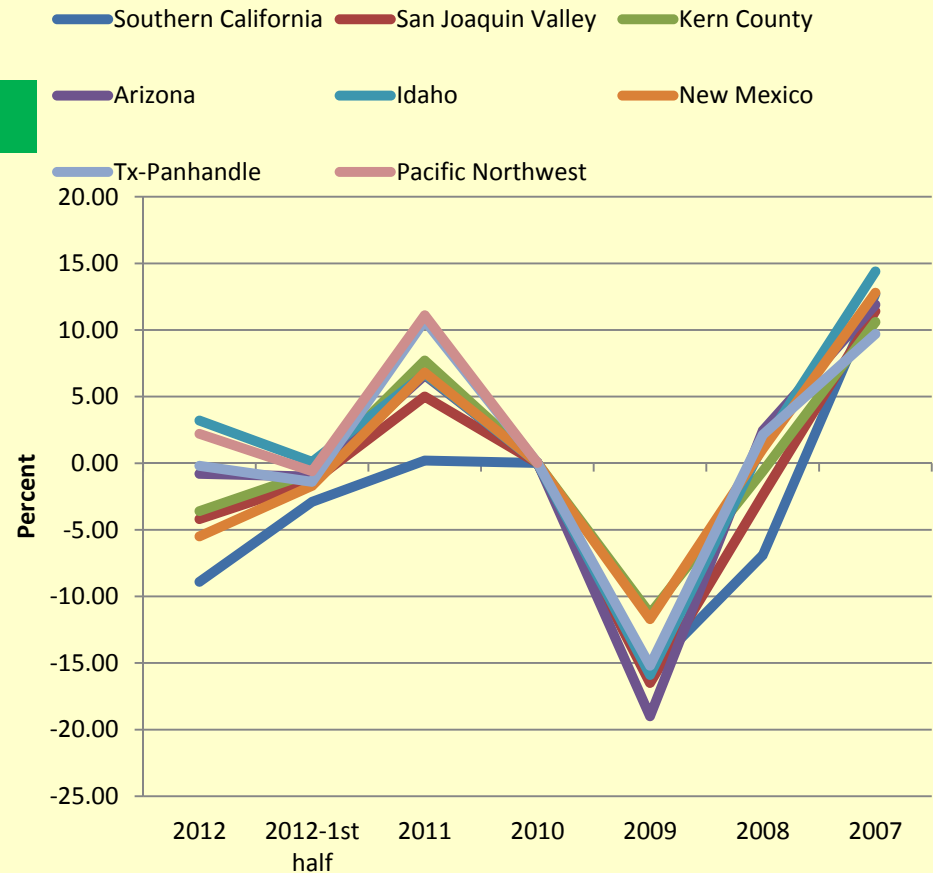


Return on Total assets

Vulnerable 4% 8% Strong



- Net Income divided by asset value at cost
 - ▶ The deep hole of debt has not been overcome
- Volatility has kept returns low



Where Now - Next

- Most that have made it this far may survive
- Operators attitudes:
 - ▶ Range from cautious to “scared to death”
 - ▶ Very cautious about leverage
 - ▶ Interested in “Lender Loyalty”
 - ▶ Search for land base to reduce feed costs
 - Farm ground has become expensive

Where Now - Next

- Dairy is not sharing in the current “good times” of agriculture
- Better times are ahead
 - ▶ Global demand for dairy is increasing
 - ▶ US can fill much of that demand
 - ▶ Domestic demand is stable
 - ▶ Dairy will be (hopefully) more cautious about expansion & exceeding production needs in the future

Data Sources



**Understanding
Dairy Markets**



University of Idaho
Extension

Thank You

Corn Time by Bob Lang



Dairy Policy and Trade

**Future of the Dairy Industry Symposium
Monterrey, CA**

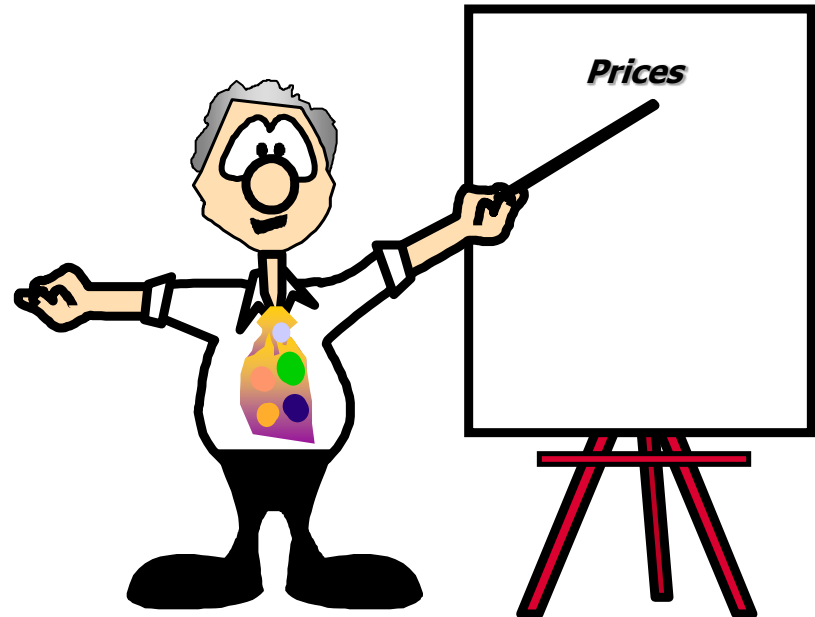
June 27, 2013

**David P. Anderson
Professor and Extension Economist
Livestock and Food Products Marketing**

**TEXAS A&M
AGRI LIFE
EXTENSION**

Overview

- Policy
- Trade



Dairy Policy in the Farm Bill

- Dairy Security Act
 - Eliminates MILC, price supports, DEIP
- Two Major Parts
- Dairy Producer Margin Protection Program (DPMPP)
- Dairy Market Stabilization Program (DMSP)
- Margin Protection and Supply Management

Why The Change?

- Price Supports, MILC
 - Ineffective for years
 - Price based payments
- Response to Changing Economic Environment
 - Milk prices more volatile, feed costs skyrocketing
- Shift in Advantage from Buying to Raising Feed
 - “Western model”

Why The Change?

- Tried Supply Management in the Past
 - Thinking back over 40 years, many supply controls or management policies tried
- Rarely Worked Because the “Stick” for Over Producing Was Never Large Enough to Offset the “Carrot” of Getting Larger
 - Returns to size and scale

Emphasis on Margin

- Not Just Milk Price
- Feed Prices Rising and More Volatile
- Margin, or Income Over Feed Costs, Becomes More Important
 - Time for prices to respond to feed costs

Supply Management

- Try to Limit Margin Wrecks
 - Climb out faster
 - Try to limit govt. costs
- Most Interesting Part of Bill
 - From a political or philosophical point of view
 - Amendments to strike the supply management part played role in failure of farm bill in House

Basics

- DPMPP

- Payments triggered when IOFC falls below trigger level
- Producers allowed to “buy up” to higher level of margin protection
- Base margin of \$4 per cwt, buy up to \$8
- Covers 80% of highest of last 3 years marketings
- Supplemental base to allow for dairies to grow

Basics

- DMSP
 - Margin falls below \$6 per cwt for 2 months then supply management triggered, or \$4 for one month
 - Producers not paid on a percent of milk base production (paid on 98% of milk base)
 - Ends when margin increases to over \$6

Research Summary

- Producer Income Increases
- Almost No Change in Milk Production, on Average
- Can Effect Exports Slightly
- Adoption is Key, As is Buy Up
- Alternatives – DFA (amendment)
 - DSA margin protection aids producers more when margins are low
 - Supply management reduces govt. costs

Trade

- Much More Important in Dairy
 - Larger share of milk production
 - >10% of production equivalent
- U.S. Has Become More Competitive in World Markets
 - Price competitive
 - Advantage in year around supply
 - Increasing production

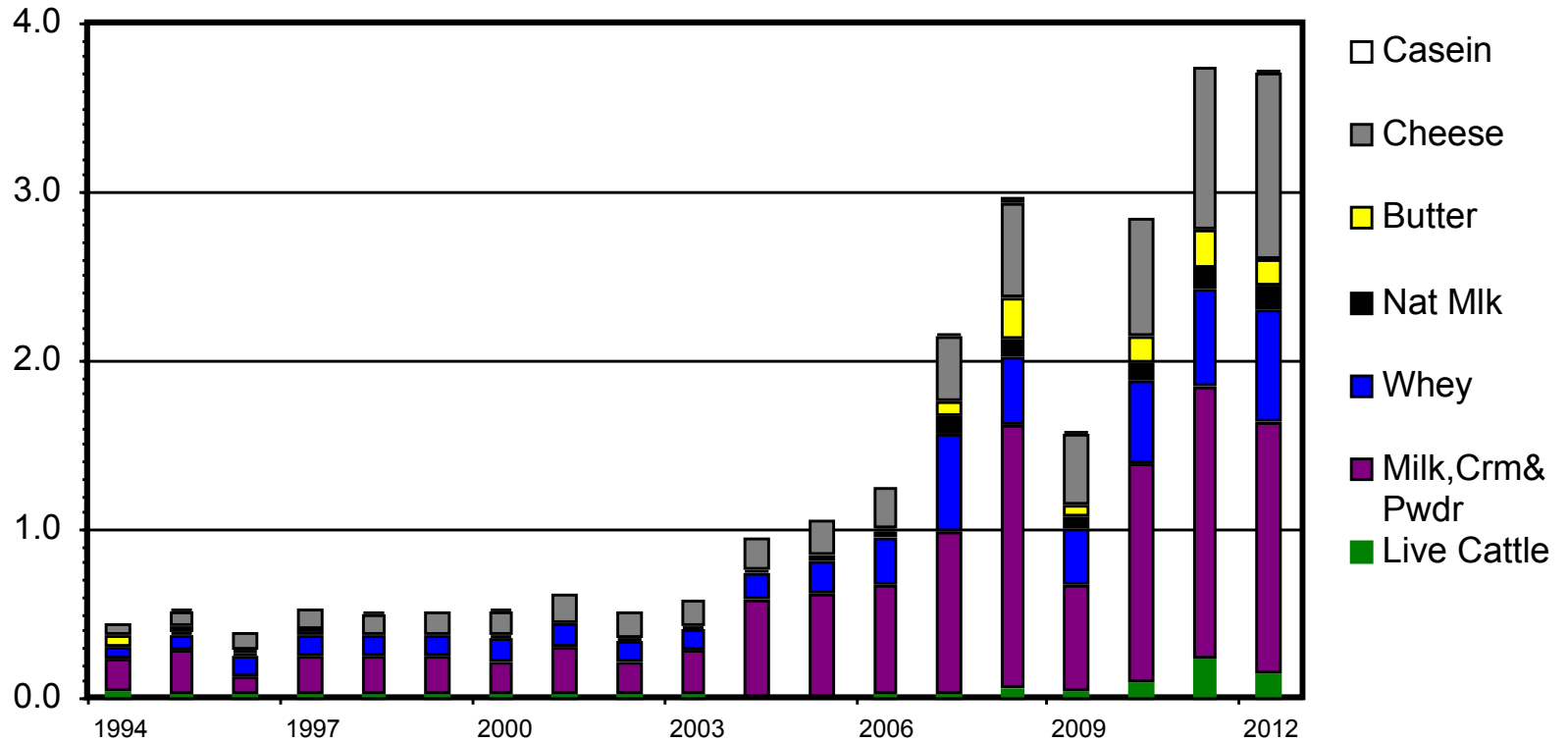
Trade

- Increasing World Incomes
- Increasing U.S. Production
- Might Argue That Trade Contributed to DSA
 - Recession hit
 - Exports declined
 - Milk prices declined
 - EU export subsidies didn't help
 - Increasing feed costs
 - Margin crunch

U S DAIRY INDUSTRY EXPORT VALUES

Annual

Bil. \$



Livestock Marketing Information Center

Data Source: USDA-FAS, Compiled & Analysis by LMIC

02/08/13

Trade and Policy

- Significant Opposition to Supply Management is Driven By Processors and Exporters
- Increased Reliance on Trade Does Have Some Implications for Price and Margins

Future

- Increasing Milk Production
- Advantage Remains Shifted to Those Who Grow Feed (for now)

The Future of Dairy in the West: Environmental Challenges

Colorado State University

Joleen C. Hadrich

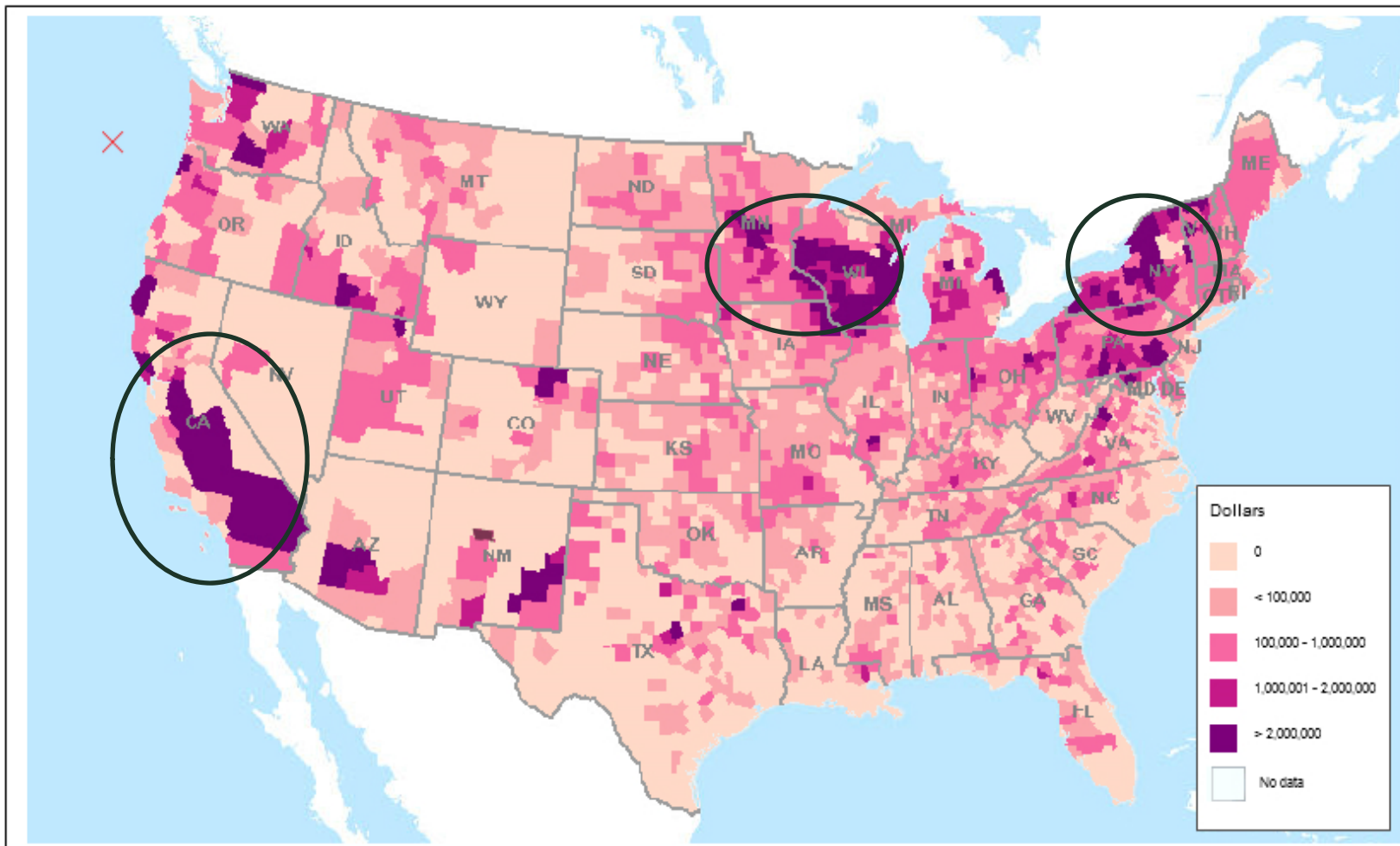
WAEA Symposium

Thursday, June 27, 2013



Where are the cows?

Colorado State University



By county, Total MILC payments, 2009

Top Milk producing states

Colorado State University

1. California ←
2. Wisconsin
3. Idaho ←
4. New York
5. Pennsylvania
6. Texas
7. Minnesota
8. Michigan
9. New Mexico ←
10. Washington ←



Average dairy farm size

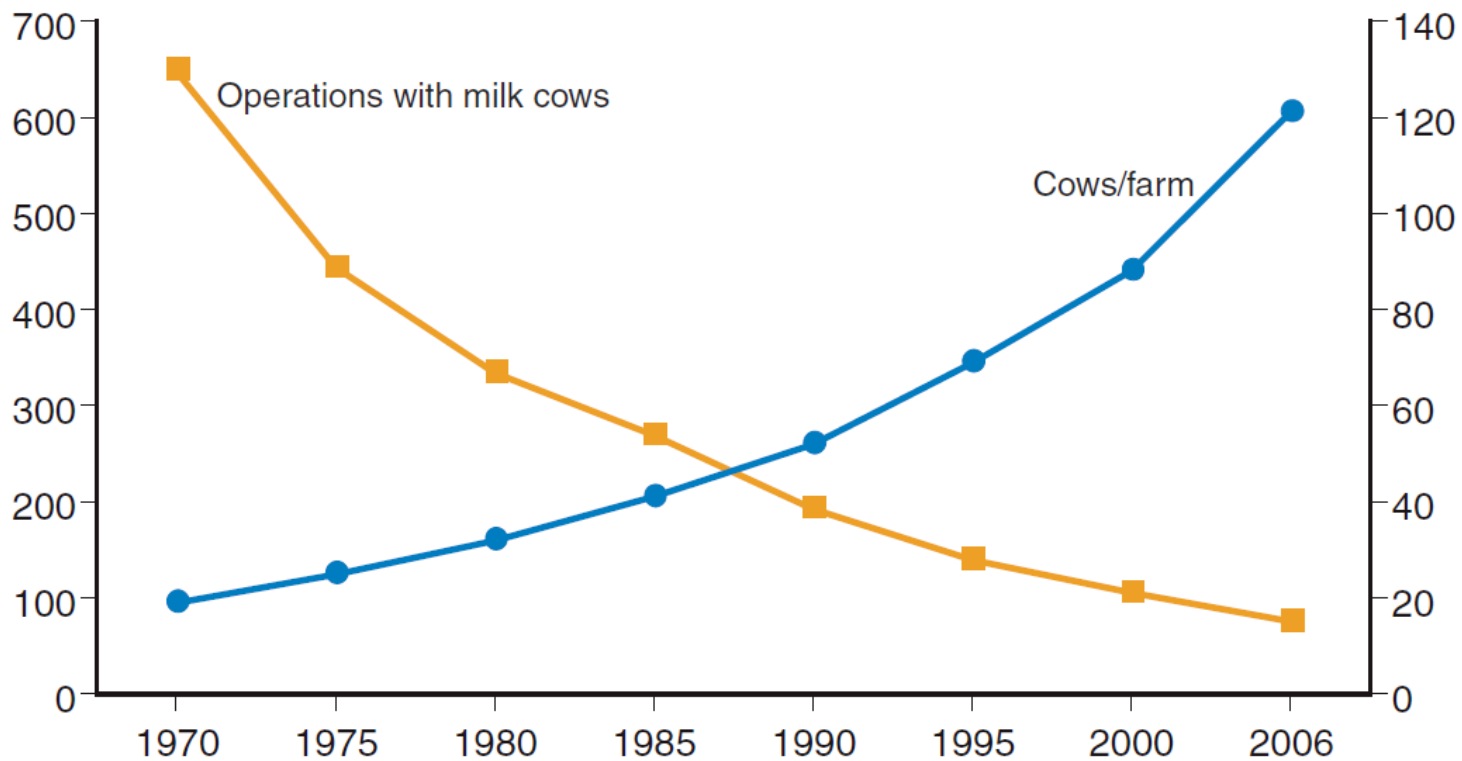
Colorado State University

Figure 1

The number of dairy farms is declining, while average size is growing

Number of farms (1,000)

Cows per farm



Source: USDA, NASS.

Dairy Characteristics

Colorado State University

- Above average milk per cow (U.S. = 21,691)
 - CA = 23,457
 - NM = 24,694
 - ID = 23,376
 - WA = 23,794
 - CO 23,978

- WI = 21,436
- NY = 21,633

Source: Milk cows & production by state and region, 2008-2012:
<http://www.ers.usda.gov/data-products/dairy-data.aspx#.UcNaSpxQqck>



Cows & the West

Colorado State University

- Dairy farms are spatially concentrated
- Large number of cows on small amount of land
 - Causes concern for nitrogen and phosphorus loading via manure management → water quality concerns
 - Urban pressure



Federal Regulations

Colorado State University

- Clean Water Act – 1972
 - EPA – 1998 –AFOs are a significant source of water pollution in the U.S.
 - NPDES permits
- Clean Air Act –1970 (Ammendments-1990)
 - Air Compliance Agreement – 2005
 - Greenhouse Gas Reporting Rule – 2009



Sources: Water Quality

Colorado State University

- Dairy farms have various sources of potential water pollution
 - Run-off from manure lagoons
 - Milk waste water
 - Silage/haylage bunker run-off
 - Manure application run-off
 - Etc.



- NPDES permits (Federal)
 - Required for CAFOs (> 1,000 AU or 700 dairy cows)
- CNMP (comprehensive nutrient management plans)
- BMPs
 - Agronomic manure application rates
 - Feeding livestock to minimize nutrient excretion

- 2005 Air Compliance Agreement (Federal)
 - Dairy, swine, & poultry
 - Results available in 2011
 - Evaluating appropriate and consistent methods to measure emissions for possible future regulation
- 2009 Greenhouse Gas Reporting Rule (Federal)
 - Any dairy farm that emits 25,000 or more metric tons of GHGs (CO₂e) must report
 - No fees or fines, just need to report it (due March 31) & \$900 for equipment
 - Applies to 40-50 of the largest dairy farms



- Specific Air Quality Regulations in ID, CA, & AZ
- Other states have air quality recommendations
 - CO Air Pollution Prevention & Control Act
 - NM Dairy Quality Assurance Program
 - WA Air Quality Management Policy & BMP for Dairy Operations
 - Regional policies



- Anaerobic digesters
 - Extensive manure waste handling facility that generates electricity
 - Electricity can be used on the farm or sold to the grid for additional revenue
 - Size a good thing in the west for green energy
 - Becomes more economically feasible with more than 500 dairy cows, but can be used on smaller dairy farms



- Colorado and our town of Greeley are changing. We are in an area of rapid urban growth that has brought more visibility to us as dairy farmers. The challenge we face is being able to operate a dairy farm efficiently in an environment of growth and change.

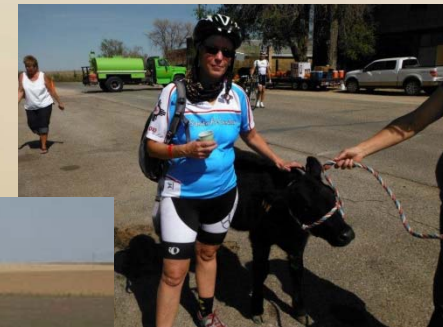
--Les Hardesty, CO (dairyfarmingtoday.org)



Urban Pressure

Colorado State University

- Distance between urban and rural populations is shrinking
- Dairy farmers must have good relationship with their urban neighbors
 - Pedal the Plains (CO)



Right to Farm Act

Colorado State University

- Each state has a Right to Farm Act which provides farmers with protection against nuisance lawsuits
 - Protection level varies by state
 - Can be housed within state government agencies
 - DEQ, Dept. of Ag, Dept. Public Health, etc.



Questions?

