Economic Overview of Animal Agriculture: Current and Forecast

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BEEF COWS THAT CALVED, JANUARY 1, 2012, (1000 Head)

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For: Matthew Rosencrans, NOAA/NWS/NCEP/CPC
Percent of Beef Cow Herd on Range and Pasture in Poor-Very Poor Condition on July 1

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All Hay Stocks on Farms, Dec (Million Tons)
Past and Projected with Basis Adjusted Futures Oct 16, 2012 Close
Accumulated Estimated Farrow to Finish Returns per Hog Sold Per Month, Jan 10 - Aug 12 and Projected Basis Adjusted Futures, Oct 16, Projected 10/16/12
USDA Estimated Cost of Milk Production, All Milk Price and Basis Adjusted Futures Forecast of Cost and Price

Projected 10/16/12
Summary of Drought Impact

• Crops
  – Yields reportedly better than feared
  – Higher test weights, less aflaxtoxin
  – Crop insurance provides safety net

• Livestock
  – Price, availability and quality of feed
  – Significant losses and they will continue
  – Long term reduction in supplies
WTI Spot Price, Cushing, OK $/Barrel

9/99 - 8/06
Min  18.28
Avg  37.91
Max  75.63
StDev 14.95

9/06 - 8/12
Min  32.98
Avg  82.13
Max  142.52
StDev 20.71
Downward Sloping Demand

Consumers buy more of something when it is cheaper than when it is more expensive.
Implications

• Demand shifters
  • Population and income growth slow and export driven
  • Tastes and preference are fickle
• Lower cost of production
  • Hope for policy change
  • Improve efficiency
• Integrated systems
• Demand shifters
  • Consumer expectations, exports or differentiation holds implications for farm level
    • Labeling
    • Production practices
    • Differentiation, certification
  • Market or regulatory?
    • Customer or consumer?
  • Public role in market attribute
• Demand shifters
  • Exports growth
    • Long term trend
    • Forecast to continue
    • Higher energy cost favors value added
  • Export risk
    • Disruption forces exports on domestic market
    • Disease risk
    • Political risk
US Meat Exports as a Percent of Domestic Production

- **Poultry**
- **Pork**
- **Beef**

Yearly data from 1995 to 2014 is shown.
Lower cost of production

• Improve efficiency
  • Lower food cost and increased availability
    • Consumers and early adopters benefit
  • Reduced environmental footprint
    • Carbon and water
    • Consistent with profitability
• Technology is key
• Human resources
Lawrence and Ibarburu, ISU 2007

- Increased in cost of production
- Higher costs resulted in
  - 18% less U.S. beef production
  - 180% increase in net beef imports
  - 13% higher retail beef prices for consumers.

Funded by GET-IT, a coalition of pharmaceutical companies
http://www2.econ.iastate.edu/faculty/lawrence/pharma%202007%20update.pdf
Lawrence and Ibarburu, ISU 2007

Other implications

• Similar beef cow inventory and herd profitability
• Reduced
  • Calf-crop
  • Feedlot inventory
  • Packer volume

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http://www2.econ.iastate.edu/faculty/lawrence/pharma%202007%20update.pdf
Life Cycle Analysis

• Beef production 2009 v. 1977

• For the same amount of beef today
  – 10 percent less feed energy
  – 20 percent less feedstuffs
  – 30 percent less land
  – 14 percent less water
  – 9 percent less fossil fuel energy
  – 18 percent decrease in total carbon emissions

Source: Jude Capper, Washington State University
Life Cycle Analysis

• Pork production 1959-2009
• For the same amount of pork today
  – 78 percent less land
  – 41 percent less water
  – 38 percent decrease in carbon footprint

Source: Boyd, 2012
Lower cost of production

- Technology is key
  - Research and development
    - Appropriate for resources
    - Accounts for externalities
    - Adoption strategies of the future
      - Extension and outreach
      - Private and licensing
Lower cost of production

• Human resources
  • Labor availability and affordability
  • No longer “large families on small farms”
    • Declining population in rural areas
    • Recruit and train non-ag people
Lower cost of production

- Human resources
  - Higher expectations of skill set
  - Technology, animal care, scale
  - Higher value of labor
  - Higher wages to attract new people
- Ag biosciences
  - Discovery and implementation
Lower cost of production

- Integrated systems
  - Not a new concept
  - New prices
    - Energy, feedstocks, land, regulation
  - New scale
    - Site and firm level
  - New scope
    - Geography, function
Rail Rates for Corn per Bushel

- Omaha - LA
- Omaha - Amarillo
Production Systems and Prices

• Relative prices matter
• Research and investment often based on lower energy costs
  • Grain transportation
  • Fertilizer cost
  • Less concern about emissions
• What research is needed today?
• What systems are needed today?
Drying of DDG can be 30% of the energy costs of ethanol production.

Fertilizer is ½ of the energy used in corn production.
Production Systems and Prices

Draw the boundary locally
• Neighboring farmland – grain and manure

Draw the boundary regionally or nationally
• Co-product recycling through livestock
• Manure to energy production
• Ash/nutrients to fertilizer manufacturer
• Economics of scale in transportation and production
Summary

• Farm level economics continue to be challenging
• Prices will adjust, but increased volatility and lag time between sectors a problem
• Improved production efficiency essential
• Re-evaluate integrated production systems