Agriculture, Economic Principles, and Rural Communities

Bill Weida, PhD
GRACE Factory Farm Project
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- Colorado College, U.S. Air Force Academy, Pentagon

- Specializes in regional economics, statistics, and econometric modeling

- Leads the GRACE Factory Farm Project (GFFP)

- Spent the last 15 years providing advice to communities and regions on the impacts of various forms of economic development
Section A

Economics of Industrial Agriculture
Incentives

- Economics is a discipline of incentive
- What gives people or organizations the incentive to act a certain way?
Conventional vs. Industrial Agriculture

- Conventional agriculture
  - High variable cost
  - Low fixed cost

- Industrial agriculture
  - Low variable cost
  - High fixed cost
Conventional Farmers

- Low fixed costs—spend very little on facilities or investment
  - Buildings/barns
  - Equipment
  - Taxes or land charges

- High variable costs—spend money and in-kind labor directly on getting the crops or livestock to grow
  - Labor
  - Inputs
    - Feed and additives
    - Fuel and energy
    - Water
  - Waste disposal

- Therefore, control over normal agriculture cycles
Conventional Farm

Photo source: USDA Farm Service Agency.
Conventional Farm

Family farm in Vermont

Photo source: SRAP.
Control of Agricultural Cycles

- Conventional farmers had flexibility to react to normal agricultural cycles
  - E.g., if general supply increased, it was easy to cut back on production on the farm by cutting back on feed and labor inputs (the variable costs)
Post-World War II Shift in Agriculture—1

- Industrial model applied to animal agriculture
  - Raising livestock using methods similar to those of industrial production

- Goal: to gain giant economies of scale
Results

- Animal agriculture converted to reverse model of *high fixed costs* and low variable costs
  - Farmers asked to invest heavily in buildings, facilities, and equipment (at large costs)
  - Farmers had to borrow huge amounts of cash (with payments over many years)
- Loan payments had to be made regardless of price of the agricultural good
- As too much overall production has caused demand and prices to fall, the individual farmer has had to *increase* production (and expand further) to maintain farm income
Short-Term Experiment

- Expansion of the industrial animal facilities occurred at the expense of smaller conventional farms.

- Decreasing prices caused smaller conventional farmers to go out of business while industrial farms increased production by expansion.

- By 2000—raising same number of hogs as in 1920, but the number of hog farms down by 80 percent.

- This can’t last as it depends on a supply of conventional farmers to drop off line.
Underlying Assumptions

- Applying the industrial model of production to livestock would result in large economies of scale

- Larger numbers of livestock grown in less space would reduce cost per animal unit
Why Assumptions Are Wrong

- Application of the industrial model to livestock is limited

- Limits to how much natural and biological systems can be controlled and manipulated
  - Waste
  - Breeding cycle
  - Confinement results in greater costs for disease control
Are There Economies of Scale?

- No—economies of scale were not gained with producing and growing the animals

- Yes—huge economies of scale seen in the processing, distribution, and marketing of the meat

- So, the way to make a profit is in the processing and distribution—not in the raising of the animals
Vertical Integration

- Integrators gained control of all aspects of industrial food animal production

- Recognized that profit was in the final steps—processing and distribution

- Less profitable aspects of IFAP, i.e., producing and growing the animals—and most of the risk—were shifted to farmers under strict contracts
Contracts with Farmers

- Strict contracts with the farmers (“growers”) who were to “grow” the animals allowed the integrator ...
  - To specify exactly how to build the houses for the animals
  - 24-hour access to farms and buildings
  - Control of all feed and feed ingredients and additives
  - To dictate schedule of delivery and removal of animals
  - To specify all payment terms and scheduling
  - To dictate all aspects of livestock care and maintenance (light, temperature, feed schedule, etc.)
Why Are CAFOs So Large?

- If there are no economies of scale, what is the incentive to continue with the IFAP model and its huge facilities?
  - High-fixed-cost operations rely on high output and large numbers of units (animals)
  - As prices drop per unit, more units must be produced to cover fixed costs
Agriculture Is Cyclic

- Agriculture follows natural cycles with temperature and rainfall

- Industrial animal agriculture ignores this and has only one response—to expand—and is therefore in conflict with the cyclic nature of agriculture
If a problem is fundamental, it cannot be solved (Akira Kurosawa)

Industrial farm animal production has a fundamental problem since it is inherently in conflict with the cyclic nature of agriculture; and therefore the problem cannot be solved