Causes and Consequences of Concentration in Meatpacking

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Reference


Historical Perspective

• “This squall between the packers and the producers of this country ought to have blown over forty years ago, but we still have it on our hands…”
• Senator John B. Kendrick, Wyoming, 1919

More Recent Historical Perspective

• “Only after considerable further investigation will we know whether or not reform in the packing industry is necessary. It is conceivable that such monopoly elements as exist yield desirable results. A less extreme possibility is that results are undesirable but not sufficiently bad to bother about.”
• William H. Nicholls, J. Political Economy, 1940
Objectives

- Review structural changes in the U.S. meatpacking industry
- Review causes for these structural changes
- Review several studies bearing on the consequences of increased concentration
- Summarize the results and central issues for economists
Important Notes

- The largest firms today are not the same as 25-30 years ago
- Mergers and acquisitions have had a significant effect on increasing concentration
- Despite numerous civil antitrust lawsuits, there have been no large “victories”
- And there have been no major Federal antitrust cases

Input (Fed Cattle) and Output (Boxed Beef) Prices and Margins

Cost And Profit Trade-off In Meatpacking

Cost Comparison by Plant Size: Cattle Slaughter only, Fabrication only
### Cost Comparison by Plant Size: Cattle Slaughter-Fabrication

- **Graph:**
  - Y-axis: Average Cost Index
  - X-axis: Thousand Head per Year
  - Data sources:
    - OSU, Industry data 1985
    - USDA, Simulated data 1988
    - USDA, Census data 1992

### Marginal Importance of Plant Utilization

- **Graph:**
  - Y-axis: Dollars per Head
  - X-axis: Million Head per Year
  - Comparison among Siersland, Duewer-Nelson, and Anderson-Trapp

### Cost Comparison by Plant Size: Hog Slaughter

- **Graph:**
  - Y-axis: Average Cost Index
  - X-axis: Million Head per Year
  - Data sources:
    - ISU, Survey data 1998
    - USDA, Census data 1992

### Economies of Scope in Meatpacking Firms

- **Listed Options:**
  - Multi-function - slaughtering plus fabricating or processing
  - Multi-plant - two or more plants
    - Livestock procurement
    - Food safety
  - Multi-species - beef, pork, poultry
**U.S. Pork Industry: Extent of Contracting**

- 1993 - Hog procurement by the largest packers - 13% contracts, 87% cash market
- 2001 - Hog procurement by the largest packers - 82% contracts, 17% cash market

**Breakdown of Contracting by Type in 2001**

- Formula-priced contract based on cash market - 54%
- Fixed agreement based on feed price - 16%
- Fixed price contract based on futures - 6%
- Formula contract with window - 7%

**U.S. Beef Industry: Extent of Contracting**

- Fed cattle procurement via contracts and marketing agreements by the four largest packers (GIPSA-USDA), 1988-99 - ranged from 13-24% annually
- “Additional movement” of fed cattle in the major cattle feeding states (AMS-USDA), 1994-2000 - increased from about 20 to about 50%

**Estimated Contracting of Fed Cattle, GIPSA vs. AMS**
Financial Performance for the Four Largest Firms

Market Behavior and Performance Review

- Grouped research into four interrelated, indistinct categories
- Discussed research in chronological order within each category
  - Price and Market Structure Characteristics
  - Price and Pre-committed Livestock Supplies
  - Margins and Concentration
  - Oligopoly and Oligopsony Market Power

Operating Income for the Four Largest versus Forty Largest Firms

“Additional Movement” of Fed Cattle, 1994-2000
**Price and Market Structure Characteristics**

- Negative relationship between livestock prices and concentration (Menkhaus, St. Clair, Ahmaddaud 1981; Menkhaus, Whipple, Ward 1990; Ward 1992; Marion and Geithman 1995)
- Positive relationship between livestock prices and concentration (Matthews, Jr. et al. 1999)

**Price and Pre-committed Livestock Supplies**

- Negative relationship between livestock prices and pre-committed supplies (Elam 1992; Schroeder et al. 1993; Ward, Koontz, Schroeder 1998; Schroeter and Azzam 1999)
- Differences noted for type of pre-committed supplies (Ward, Koontz, Schroeder 1998)
- Conceptual model suggests negative relationship not due to non-competitive behavior (Azzam 1998)
- Conceptual model suggests negative relationship but also increased plant utilization for packers (Love and Burton 1999)

**Margins and Concentration**

- Evidence of monopoly and monopsony behavior by packers (Schroeter and Azzam 1990)
- Positive relationship between margins and packer concentration (Brester and Musick 1995)
- No evidence of oligopoly and oligopsony behavior by packers (Schroeter and Azzam 1991; Ward and Stevens 2000)
- Evidence of negative relationship between margins and packer concentration (Matthews, Jr. et al. 1999)

**Oligopoly and Oligopsony Market Power**

- Little or no evidence of oligopsony, oligopoly behavior (Driscoll, Kambhampaty, Purcell 1997; Muth and Wohlgenant 1999; Schroeter, Azzam, Zhang 2000; Paul 2001)
Oligopoly and Oligopsony
Market Power (continued)

• Packers follow average cost pricing, do not maximize short-run profits (Stiegert, Azzam, Brorsen 1993; Driscoll, Kambhampaty, Purcell 1997)
• Economies of size more than offset oligopsony price distortions (Azzam and Schroeter 1995; Paul 2001)

Summary and Conclusions

• Research varies widely in data
  – Data unit aggregation (transactions to annual observations)
  – Collection length (one month to decades)
  – Spatial aggregation (local market to entire U.S.)
• And in methodology
  – Econometric estimation with varying functional forms, simulation, game theory, conjectural variation, and combinations thereof

Summary and Conclusions (continued)

• Despite the differences, results are quite robust
• Research - whether from indirect or direct measures - suggests a dynamic, bidirectional linkage between structure, conduct, performance

Two Issues Emerge from This Review

• First - How large is large? How small is small? When is the evidence “significant”?
  – Measure in %, $/unit, or total $? on prices or profits?
  – Small % per unit impacts may sum to large totals
• To some, large sums are an antitrust target, evidence of lax enforcement, grounds for corrective legislation
Two Issues Emerge from This Review (continued)

- Second - Research suggests resource distribution implications over time for the structure of agriculture (production) and for the broader food sector (processing and distribution)
- What should be done? How can economists contribute? Do we …
  - Do nothing – let markets work? Monitor changes and results? Seek legislative and regulatory relief unique to agriculture?

Final Comments

- Evidence of structural changes is clear and research findings on causes and consequences are quite robust
- Neither policy alternative - either monitor trends and do more research, or advocate for governmental and legislative solutions - may be very satisfying to agricultural producers and policymakers