

Causes and Consequences of Concentration in Meatpacking

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Reference

- “A Review of Causes for and Consequences of Economic Concentration in the U.S. Meatpacking Industry.” *Current Agriculture, Food & Resource Issues* 3(2002):1-28. www.CAFRI.org

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

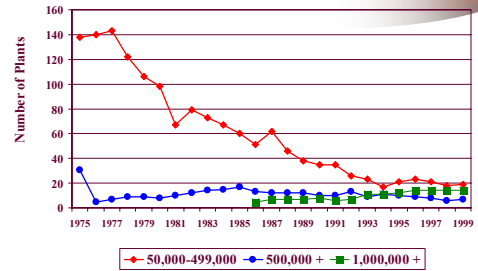
More Recent Historical Perspective

- “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

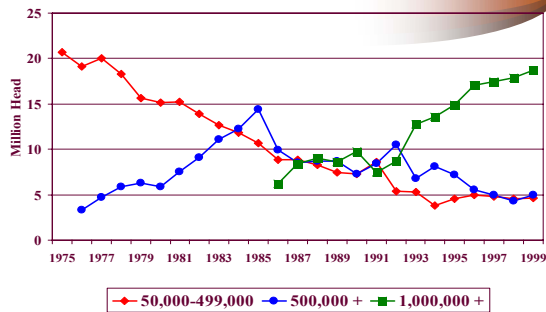
Objectives

- 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

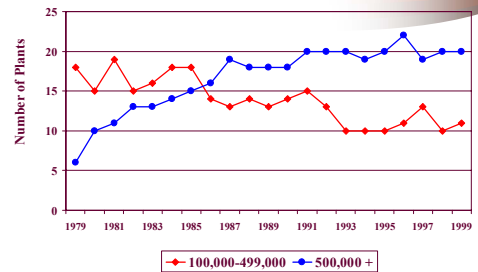
Number of Fed Cattle Slaughtering Plants By Size Group (annual slaughter)



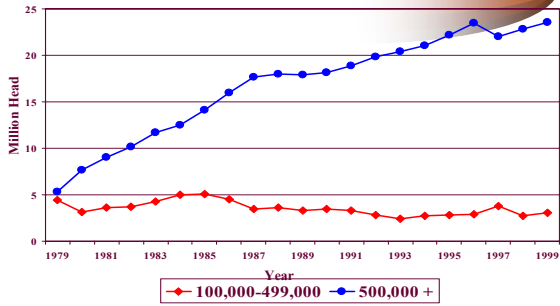
Fed Cattle Slaughter by Plant Size (annual slaughter)



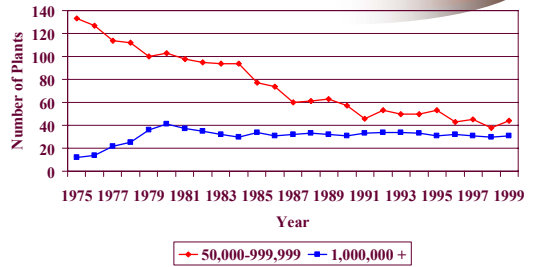
Number of Boxed Beef Plants By Size Group (annual production)



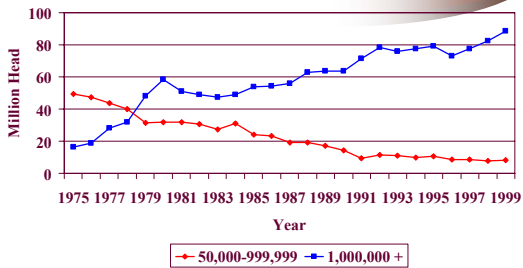
Boxed Beef Production by Plant Size (annual production)



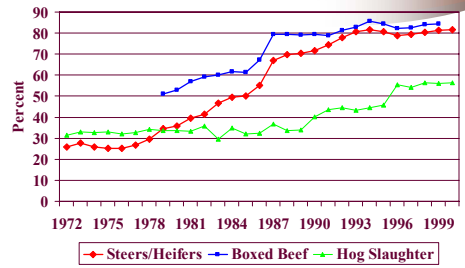
Number of Hog Slaughtering Plants By Size Group (annual slaughter)



Hog Slaughter by Plant Size (annual slaughter)



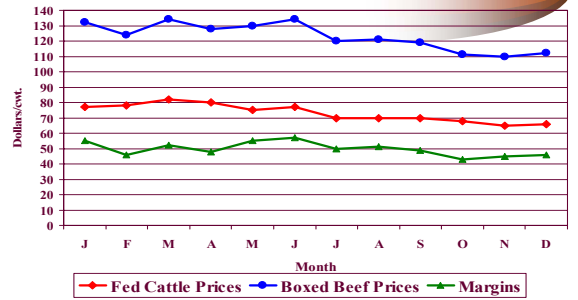
Combined Market Share of the Four Largest Firms



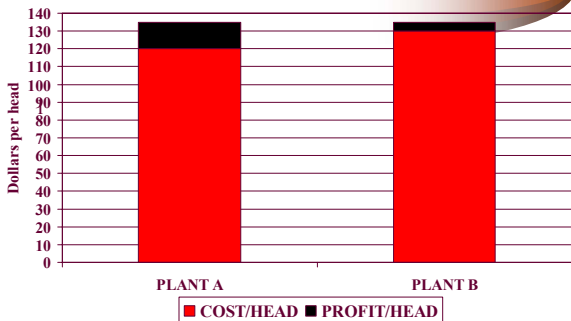
Important Notes

- 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

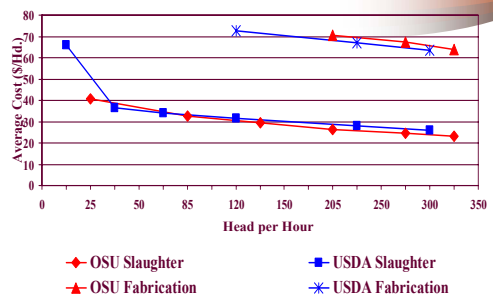
Input (Fed Cattle) and Output (Boxed Beef) Prices and Margins



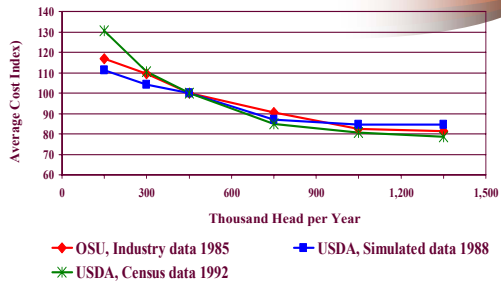
Cost And Profit Trade-off In Meatpacking



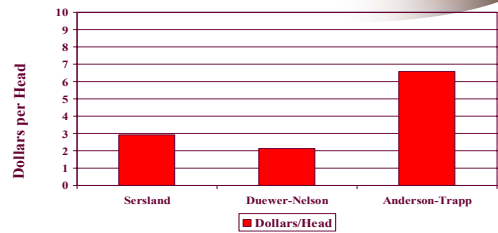
Cost Comparison by Plant Size: Cattle Slaughter only, Fabrication only



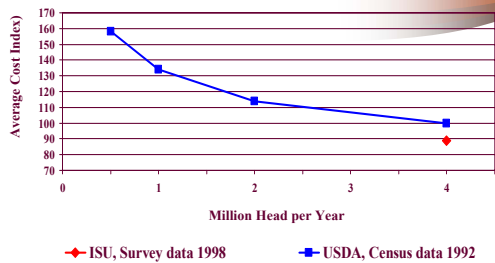
Cost Comparison by Plant Size: Cattle Slaughter-Fabrication



Marginal Importance of Plant Utilization



Cost Comparison by Plant Size: Hog Slaughter



Economies of Scope in Meatpacking Firms

- 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

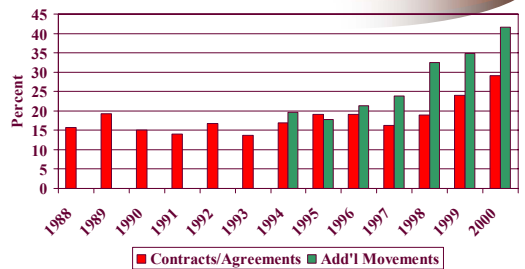
Breakdown of Contracting by Type in 2001

- 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%

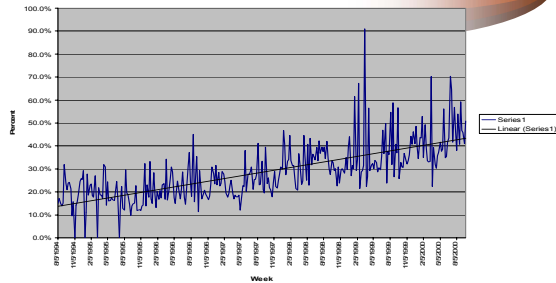
U.S. Beef Industry: Extent of Contracting

- 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%

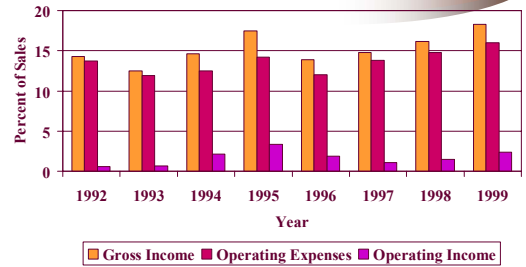
Estimated Contracting of Fed Cattle, GIPSA vs. AMS



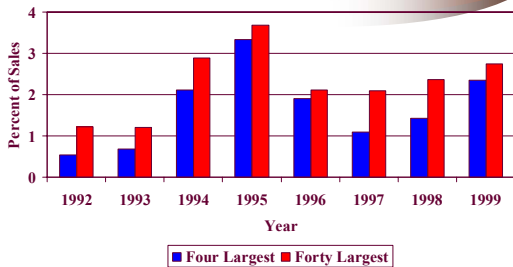
“Additional Movement” of Fed Cattle, 1994-2000



Financial Performance for the Four Largest Firms



Operating Income for the Four Largest versus Forty 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*

Price and Market Structure Characteristics

- Positive relationship between livestock prices and number of buyers (Ward 1981, 1984; Rhodus, Baldwin, Henderson 1989; Ward 1992; Schroeder et al. 1993)
- Price differences among buyers (Ward 1982, 1984, 1992; Schroeder et al. 1993; Ward, Koontz, Schroeder 1998)
- 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

- Evidence of oligopsony behavior (Schroeter 1988; Azzam and Pagoulatos 1990; Azzam and Schroeter 1991; Koontz, Garcia, Hudson 1993; Weliwita and Azzam 1996; Koontz and Garcia 1997)
- 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