Introduction to Industrial Organization

Should US ranchers or consumers be concerned about the takeover of Swift & Co. (3rd largest US beef and pork packer) by JBS & Co. of Brazil to form world’s largest meat packer?

Why...

...might the U.S. Justice Dept make Cargill sell certain U.S. grain elevators before purchasing Continental Grain?

...does it matter if Safeway Australia refuses bread deliveries from 3 regional suppliers?

...did cattlemen bring legal action against Tyson regarding the use of “captive supplies” (cattle owned or forward contracted by beef slaughter companies)
More Food for Thought...

✓ In many African countries during the 1980s and 1990s, there were legal prohibitions against small grain mills competing with large industrial millers. Why have many economists argued that such restrictions need to be removed if grain farmers are to benefit from structural adjustment programs?

Market Structure Spectrum

Perfect Competition  Monopolistic Competition  Oligopoly  Monopoly

What does theory tell us about the outcomes?

Which best describes the food system?
Industrial Organization

✔ Body of economic research that studies how firms and markets are “organized”, how they interact, and how that interaction affects market outcomes, and - ultimately - society’s welfare

*Structure-Conduct-Performance*

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The Industrial Organization Framework

*Structure-Conduct-Performance*

Public Policy

Structure  Conduct  Performance

Basic Conditions

Firm Decision Environment
IO History 101...

✓ 1939 IO Beginnings
  × Case studies of diversely structured industries (Mason)
    – Generalizations about structure-performance relationship
✓ 1950's Ongoing argument develops
  × Market power (Bain, Means, Kaysen)
  × Efficiency (Schumpeter, Stigler, Adelman, later Demsetz)
✓ 1960's
  × Empirical cross-sectional studies multiplied.....Concentration = Bad!
✓ 1970's
  × Firm behavior, political power, income distribution, information, x-inefficiency
  × Growing discontent with SCP empirical approaches
  × Game theory development in economics literature

1980's
  × New Empirical Industrial Organization (NEIO)
    – Game theory
    – Heavy reliance on microeconomic theory as basis for modeling.
1990's
  × Ongoing debate between SCP “traditionalists” and NEIO empiricists
2000 and beyond
  × More blending of traditional and NEIO, both conceptually and in modeling
  × Impact on and relationship with vertical linkages
Why...

✔ ...might the U.S. Justice Dept make Cargill sell certain U.S. grain elevators before purchasing Continental Grain?

Grain Elevator Locations
(PreMerger)

Source: www.cargill.com/images/us.gif

AEC 841-IO
Cargill’s Acquisition of Continental Grain

✔ Cargill
  ✗ Largest U.S. grain buyer; Strong linkages into processing
✔ Continental
  ✗ Second largest U.S. grain buyer; Grain merchandising focus
✔ Post-acquisition
  ✗ Cargill alone handles 13% of all U.S. grain moving to market and 35% of U.S. grain exports.

The Industrial Organization Framework

Structure-Conduct-Performance

Public Policy

Structure  Conduct  Performance

Basic Conditions

Firm Decision Environment
Basic Conditions

Economic characteristics that shape the market environment

- Geographic Distribution
- Market cycles
- Information availability
- Economies of scale

- Supply Factors
  - Elasticities
  - Supply
  - Input demand
  - Uncertainties
  - Technology
  - Production cycle length

- Demand Factors
  - Elasticities
  - Price
  - Income
  - Substitutes
  - Market growth rate

Public Policy

- Taxes & Subsidies
  - Corporate tax structure
  - Farm programs
  - Int’l trade rules
  - Regulation
    - HACCP
    - Environmental
    - Property rights
    - Patents
  - Price controls

- Antitrust
  - Degree of enforcement
  - Political environment

- Information provision
  - Food labeling
  - FDA approval
  - Grades and Standards
Structure

The market environment that influences the rivalry among buyers/sellers

- # of buyers & sellers
- Market shares
- Cost structure
- Capital intensity
- Product characteristics
- Vertical Relationships
- Capacity
- Specialization
- Collective Action
- Entry & exit conditions
- Financing characteristics

Structure as an Indicator of Power

✔ What does society want?
✔ How do we achieve what society wants?
✔ How do we measure “power”?
✗ Indicators of potential power
  - 4 Firm Concentration Ratio
    ✔ % industry sales by 4 top firms
  - Herfindahl-Hirshman Index
    ✔ Concentration & Distribution

How much is too much?
Concentration in U.S. Food and Agricultural Processing

✓ Beef Slaughter: CR₄ = 84
✓ Flour milling: CR₄ = 62
✓ Butter: CR₄ = 40
✓ Cheese: CR₄ = 43
✓ Beet sugar: CR₄ = 72
✓ Canned Fruits & Vegetables: CR₄ = 29

Source: USDA

Concentration in Food Retailing

Global

✓ Wal-Mart (U.S.)
Argentina, Brazil, Canada, China, Germany, Hong Kong, Japan, Mexico, Puerto Rico, Singapore, South Korea, U.K., U.S.
✓ Carrefour (France)
Argentina, Bangladesh, Brazil, Chile, Colombia, Czech Republic, Dominican Republic, Egypt, France, French Guiana, Germany, Hong Kong, Indonesia, Iran, Israel, Italy, Japan, Korea, Luxembourg, Malaysia, Morocco, Netherlands, Nigeria, Pakistan, Peru, Poland, Portugal, Romania, Russia, Saudi Arabia, Singapore, Switzerland, Taiwan, Thailand, Tunisia, Turkey, United Arab Emirates
✓ Metro Group (Germany)
Austria, Belgium, Bulgaria, China, Croatia, Czech Republic, Denmark, France, Germany, Greece, Hungary, Ireland, Italy, Japan, Luxembourg, Malaysia, Mexico, Netherlands, Poland, Portugal, Romania, Russia, Slovakia, Spain, South Africa, Switzerland, Thailand, Turkey, Ukraine, U.K., Vietnam
✓ Ahold (Netherlands)
Costa Rica, Czech Republic, El Salvador, Estonia, Guatemala, Honduras, Latvia, Lithuania, Netherlands, Nicaragua, Norway, Poland, Slovakia, Sweden, U.K.
✓ Tesco (U.K.)
China, Czech Republic, Egypt, Hungary, Ireland, Japan, South Korea, Macau, Poland, Slovakia, Switzerland, Thailand, Turkey, U.K.

U.S. (Top 5 = 38%)

✓ Wal-Mart Supercenters
Revenue: $115,095,600,000
Stores: 1,712
✓ The Kroger Co.
Revenue: $56,985,463,000
Stores: 3,232
✓ Albertson's, Inc.
Revenue: $38,425,000,000
Stores: 2,536
✓ Safeway Inc.
Revenue: $35,094,220,000
Stores: 1,215
✓ Costco Wholesale Group
Revenue: $28,287,427,000
Stores: 382

Source: SupermarketNews.com

Source: Food Marketing Institute
All Things Considered...

✔ Is the increasing international sourcing and distribution of goods and services by private food companies an issue of food security?
  ❌ Does “structure” matter?
  ❌ Structure refers to horizontal and vertical aspects
  ✔ Employing “Comparative advantage”

Bain’s Barriers to Entry: The Big Three

✔ Economies of Scale

✔ Absolute Cost Advantage

✔ Product Differentiation