ECONOMIC CHARACTERISTICS OF THE AGRIFOOD SUPPLY CHAIN

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OBJECTIVE

• Overview of U.S. agrifood supply chains
• Describe seven specific characteristics that are different from industrial manufacturing and service supply chains
  – Discuss four of these characteristics

SEVEN CHARACTERISTICS

• Risk from the biological nature of agrifood supply chains
• Role of buffer stocks
• Scientific foundation of innovation
• Cyberspace and information technology influences
• Prevalent market structure at farm gate is oligopsony
• Relative market shifts away from food manufacturers downstream to food retailers
• Globalization of agriculture and agrifood supply chains

RISK FROM THE BIOLOGICAL NATURE OF AGRIFOOD SUPPLY CHAINS

• Risk exists throughout the supply chain for all parties due to perishability
  – Unpredictable yield risk
  – Seasonality
    • Global distribution channels have eliminated some of this
  – Orderly marketing has resulted in USA from public policy designed to avoid dramatic swings in volatility
RISK FROM THE BIOLOGICAL NATURE OF AGRIFOOD SUPPLY CHAINS

• Quantity risk is short-term shortfall in supply
  – “We will always plant another crop”
  – Yield volatility is greatest in maize relative to soybean, wheat, and rice
• Price risk occurs from changes in supply and demand
  – Ways to hedge this in futures markets or fixed price contracts of a short duration with specific delivery and quality attributes

REAL AGRICULTURAL COMMODITY PRICES ARE FALLING OVER TIME

YIELD INCREASES ARE VARIABLE

CYBERSPACE AND INFORMATION TECHNOLOGY INFLUENCES

• Transportation gains and communication technology have reduced real freight costs
• Widening of Panama Canal and expansion of US rail system will change US system
  – Projects in Brazil and southeast Asia (rail, deeper ports, etc.) will further reduce costs.
INFORMATION TECHNOLOGY IMPACTS

- Processors can use contracts to obtain certain plant varieties or animal breed
- Utilize research to change transfat profile in oilseeds or intramuscular fat in animals
- Whole grains, sodium, and calories are becoming critical issues.
- Traceability has become more common which requires trust.

INFORMATION TECHNOLOGY IMPACTS

- Harmonization of information used in business
  - Trade agreements and similar treaties have helped standardize how business is done and data reporting
    - Veterinary and scientific protocols
    - Exception: GMO tolerance differences still exist
    - International accounting standards
    - Value and volumes of export and import data

RELATIVE MARKET SHIFTS AWAY FROM FOOD MANUFACTURERS DOWNSTREAM TO FOOD RETAILERS

- Market power is shifting away from food processors to retail supermarkets and restaurants
  - Concept of “Chain Captains” in retail supermarkets who decide what is needed in supply chain and influence participants in the chain

SUPERMARKETS AND RESTAURANTS HAVE NOT ENGAGED IN EXTENSIVE VERTICAL INTEGRATION STRATEGIES

- Market power exists due to global market share and number of retail locations
- Volume and access to consumer demands leads to increased leverage
- Development of global brands
- Development of ‘sustainable’ practices
  - Size of space for layer chickens
  - Growth hormones in beef
  - Proposition 37 in California on food labeling
GLOBAL TOP 100 BRANDS WITH A FOOD FOCUS

Restaurants

Alcohol

Beverages

Consumer Foods

GLOBALIZATION OF AGRICULTURE AND AGRIFOOD SUPPLY CHAINS

• Information technology provides opportunities for globalization which leads to
  – Increases in market size
  – Returns to scale
  – Competition
  – Capital flows
  – Multilateral trade agreements

GLOBALIZATION OF AGRICULTURE AND AGRIFOOD SUPPLY CHAINS

• Use of World Trade Organization to settle disputes among countries
• Resource adjustment in agriculture us slower than in many other industries
  – Employment, food security, immigration, etc. issues

MANAGERIAL IMPLICATIONS

• Ability to process and understand change
  – Greater difficulty in raising prices even if your costs increase
• Number of products offered, geographic scope of firms, and source and sustainability of competitive advantage are important
MANAGERIAL IMPLICATIONS

• Foreign Direct Investment is more rapid when there are opportunities
  – Requires assessment of risk and reward
• Transportation investments are going to offer many opportunities but the timing of these investments is critical
  – Geo-politics may delay some investments

FOR MORE INFORMATION

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• Full description can be found in a publication by Tom Sporleder (retired) and myself entitled

MANAGERIAL IMPLICATIONS

• Role of trade associations in codifying self-regulation will be more important.
  – Food labeling, certification, and similar issues
  – Helping define sustainability issues
• Entire supply chains may compete against each other as opposed to individual firms.
  – Much different than what we have seen in past