I. Core themes in the course

A. The course deals with broad concepts of economic organization in the food system—more than just markets than just markets. Indeed, one of the things we will discuss is the decreasing importance of "classical" spot markets in the food system as tools to organize economic activity.

1. NB most of standard economic theory until recently has been built around concepts that such markets are how the economy is organized -- Walrasian auctioneer, Arrow-Debreu, etc.

2. Modern microeconomics now deals much more with information issues (e.g., asymmetric information [1997 Nobel Prize to William Vickery and James Little; 2001 prize to Akerlof, Spence, and Stiglitz]), transaction costs, contracting, and game theory.

B. Course deals with:

1. Basic question of economic organization, using food system as an example. How do we organize ourselves to produce useful things:
   a. Who decides what is useful and how does that message get communicated?
   b. What are the incentives to respond to those signals?
   c. How can we define "good performance" of a food system, measure it, and then design actions to improve that performance?
   d. In so doing, the course recognizes that economic science is:
(1) Speculative—i.e., wrt opportunity costs—structuring the counterfactual

(2) Value-laden, as implicit in “evaluation”, so we should be explicit about those values.

(3) “Science” comes in through systematic applications of logic to our reasoning about these issues.

2. Builds on and makes concrete concepts from economic theory, such as
   a. Pricing efficiency
   b. Imperfect competition (see handout)
   c. Transaction costs
   d. Asymmetric information

3. Views production as taking place at all levels in the food system, from farmer to consumer, not just at level of farmer.
   a. Production as creation of time, form, space utility
   b. Therefore, farmer is not only "producer"—warn of my bias here.

II. Key themes in the course

   A. **Systems**—and the importance of thinking in a systems framework
      1. Define Food System (use overheads to illustrate).
      2. 2 key aspects of systems analysis
         a. What happens at one level of the system affects other levels
b. Optimizing at one level of the system does not necessarily lead to system optimization. This implies the need to coordinate actions across different levels.

c. Illustrations

(1) Development by Pioneer Hi-Bred of corn that will produce low-phosphate manure.

(2) Production of low trans-fatty acid soybean and the links between chemical/seed company, margarine manufacturer, and co-op.

(3) Coordination of maize varietal choice in Mali.

B. *Dynamics of Food System Evolution*

1. Importance in understanding that no food system is static, so that if you are trying to design policies for the future, need to understand how the system is changing.

2. Key factors in driving the organization of the food system

   a. Consumer demand and its evolution (e.g. of high-income countries, where demand is shifting rapidly due to rising incomes, changing lifestyles, changing demographics, etc.--But same factors operate in other countries, albeit sometimes at a slower pace--BUT IN NO COUNTRY IS DEMAND STATIC).

(1) Determinants of demand
(2) Ways in which the demand gets articulated (or not)

b. New technology and its implications for coordination

(1) Production technology--e.g.,

(a) Biotech and the designing of specific attributes into products

(b) Processing technologies

(c) Consumption technologies--e.g., microwaves

(d) Information technologies--e.g., scanners

c. Shift away from generic commodities to attributes (both on demand and supply side)--development of niche markets
d. Implications of all this for organization and coordination of the food system--how are the actors changing (e.g., rising importance of supermarkets), how are their behaviors changing, and how do we evaluate the consequences?

C. Analytic Framework used in the course based on:

1. Description

2. Diagnosis--Requires:

a. An analytic framework to understand why the system is operating that way (role of theory)

b. Tools of analysis (e.g., econometrics, system models, comparative institutional analysis)
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c. Standards of desired performance (value judgements)

3. Prescription

D. **Policy Implications** and the role of public and private actions in fostering improved food system performance.

1. Relevant to current debates about "deregulation" in both US and around the world (e.g., structural adjustment)

2. "Invisible hand can be a fist"--Shaffer

III. Concept of a market and of Marketing (McMillan, Bromley)

A. What do we mean by a market?

1. A physical place where buyers and sellers meet, exchange information, negotiate transactions, and to and from which commodities flow.

   a. This is a view of markets used by geographers and some spatial equilibrium models, but

   b. not one that will be particularly stressed here, although we will talk a bit about market place development (e.g., wholesale markets)

2. An area of one price, where the same forces of supply and demand operate. Price differences therefore are due to location, time, and form (incl. quality) of products.

   a. This is a definition that we will stress more here
b. Although this sounds much like price analysis a la AEC 845, emphasis here will not be so much on modeling price behavior as in that course as:

(1) Looking at what conditions or lies behind S and D

(a) Demand (which are influencing changes in structure)

i) Income

a) Growth

b) Changes in its distribution

ii) Societal tastes (example of US), preferences in a dynamic sense, as

a) influenced by for example, income growth and advertising (i.e., endogenous, not exogenous)

b) Changes in life styles: examples of product differentiation:

- Cereals by age and gender
- Organic pet food

c) Concerns about nutrition, food safety, & ethical issues related to
production (animal and worker welfare)

d) changes in ethnic makeup of society

iii) Prices of substitutes and complements (e.g., sugar and corn sweeteners in the US)

(b) Supply

i) Firm cost structures (e.g., EOS)—i.e., nature of technology, which changes over time

ii) Nature of product, e.g.,

a) Perishability--

b) ability to modify product characteristics though biotech and food processing

iii) Market structure, rules, regulation

(themselves a function of changing S and D conditions—e.g., to control spread of Mad Cow Disease)–and the implications of changes in Demand and Supply conditions for tighter forms of coordination in food system than just open markets.

B. Why do economists love markets? - McMillan, Bromley
1. Focus of Hayek article (also McMillan), which, in 1945, was written in heat of debate over relative reliance to be placed on markets versus planning.

a. Interesting in light of market reforms of Eastern Europe, China, Vietnam--to address the shortcomings of central planning-- which he highlights-- but also the problems of establishing market institutions (which plagued reforms in Russia), which he does not address.

b. Informational efficiency of markets--Way of dealing with highly decentralized information in society regarding both wants and production possibilities==>markets as a superior way of coordinating economic activity in society.

c. Decentralization of power in society


IV. Basic Concepts in Marketing:

A. Market--covered above

B. Perfect Market (perfect competition)

1. Homogeneous product
2. Large number of sellers and buyers, none of whom can influence price
3. Perfect Information (no risk and no asymmetry of information)
4. Costless entry and exit
5. Rational utility maximizing behavior of producers and consumers
6. Under these conditions, overriding (exclusive) importance of price in coordinating economic activity—Price as a “sufficient statistic” to coordinate the economy, as they incorporate all information needed re MSB and MSC of various goods. Under these conditions, markets generate Pareto-optimal outcomes.
7. If these conditions exist in all markets, and all markets for all products exist, then one gets overall Pareto optimality in society. Arrow-Debreu result (Fundamental Law of Welfare Economics).

C. Market equilibrium and equilibrium prices (static concepts)— Cf. development as a process of generating disequilibria and using the rents thus generated productively for investment—Joseph Schumpeter’s “creative destruction”

D. Market “imperfections” or market failure, and its implications
1. Theorem of the second best
2. Role of non-price institutions as important coordinating mechanisms
3. Problems of government failure, and hence the need for a pragmatic, political economy approach to market organization. Focus in incentives, both in markets and organizations⇒⇒⇒⇒Agency Theory
4. Need to balance market failure, government failure, and community failure

E. Addition of dynamics, particularly when one makes tastes endogenous to the model (through advertising)

F. Imperfect Competition

1. Monopoly Model
2. Monopsony Model
3. Assumptions
   a. Profit Maximization
   b. Blockaded entry
   c. One-firm industry
4. Both perfect competition and monopoly/monopsony models have deterministic outcomes
5. Other types of imperfect competition
   a. Use following table and have students fill in the cells

### Types of Market Structures

<table>
<thead>
<tr>
<th># Firms/Type of Product</th>
<th>Homogeneous</th>
<th>Differentiated</th>
</tr>
</thead>
<tbody>
<tr>
<td>Many</td>
<td>Perfect Competition</td>
<td>Monopolistic Competition</td>
</tr>
<tr>
<td>Few</td>
<td>Pure Oligopoly</td>
<td>Differentiated Oligopoly</td>
</tr>
<tr>
<td>One</td>
<td>Not Applicable</td>
<td>Monopoly</td>
</tr>
</tbody>
</table>
6. Note that in oligopoly models there is typically no deterministic outcome. Each firm's behavior, especially its reactions to its competitors, matters.

Mutual interdependence (*conjectural variations*). Implies that one needs to look at conduct carefully, not just market structure.

7. Economics profession has developed several tools to try to look at this
   a. Duopoly theory—e.g., Cournot, Nash
   b. Kinked demand curve theory
   c. I-O, as first developed by Joe Bain
   d. Game theoretic models of oligopoly
   e. Integration of imperfect competition into models of international trade.

V. Alternative Approaches (Schools of Thought) to the subject matter area of Agricultural Marketing. (Farris reading)

A. Market Development and Selling (Business School Approach) - Demand creation & promotion

1. Has a firm rather than system orientation, although it stresses how a firm's competitive position is critically determined by industry structure and gov't actions. Tends to view gov’t as a “constraint” to marketing.

2. Product Development, promotion, and strategic planning

3. Emphasis on the 4 P's (Product, Price, Place, Promotion)
4. Increasing emphasis on supply chain management, which leads it to have some similar concerns (but mainly from a firm perspective) as the market coordination school described below.

B. Farm gate-->What Happens? School

1. Defines marketing as everything that happens to a commodity after it leaves the farm gate before it gets to the consumer. Looks at the various functions carried out between farmer and consumer:

a. Marketing Functions (overhead)

   (1) **Exchange Functions**

      (a) Buying

      (b) Selling

   (2) **Physical Functions**

      (a) Transportation

      (b) Storage

      (c) Refrigeration

      (d) Processing

b. **Facilitating Functions**

   (1) Standardization

   (2) Finance

   (3) Information

   (4) Risk Bearing
2. This school emphasizes:
   a. Key role of market and price system in coordinating production and consumption (Often using perfect competition as a norm)
   b. Farmer and consumer welfare, through analyzing marketing margins and ways of reducing them.
   c. Does recognize important role for government to play in system.
   d. Still leaves impression that there is a dichotomy between “production” and “marketing.”

C. Market Coordination Approach (see also Breimyer article and Shaffer)—Strongly influenced by MSU, esp. Shaffer, but now reflected in the vertical approaches of most industrial organization, where we talk about competitiveness of different supply chains rather than just competitiveness of firms.

1. Food system: Orientation, from ag. inputs to the consumer.

2. Recognizes the importance of
   a. Oligopoly in certain parts of the food system
   b. Process of scientific industrialization of the food system
   c. Risk in the food system and consequently need to develop mechanisms to deal with it
   d. Need to analyze food systems in a dynamic context.

3. Emphasizes:
A. **Institutional mechanisms of coordination** in addition to just coordination by price.

b. Interdependence of various stages of subsector and across firms
c. Feedback loops
d. Dynamic processes

VI. Historical Development of Marketing Research in U.S.--1880s-present  (Useful for those from other countries to see that U.S. system developed in response to perceived political problems and range of institutions tried)

A. 1880-1920

1. Post-Civil War period, with westward expansion and development of Midwest grain belt.

2. 2 Key Characteristics of the food system at this time:

   a. Weak integration of markets due to infrastructure constraints

   b. Vastly different scale economies across different levels of the food system due to industrialization of off-farm segments of the food system.

   (1) This raised market power issues and led to the analysis of marketing issues as issues of market power.

   (2) This period was marked by the passage of the first anti-trust legislation in the US.

3. Factors giving
a. Huge expansion of farm output and consequent fall in prices.

b. Dependence of West on railroads to ship goods east to market; concern about abuse of market power by railroads.

c. Changing structure of non-farm economy, with increased concentration, compared with atomistic agriculture. E.g., concentration of meat packers.

d. This was a period of agrarian unrest, with farmers supporting inflationary policies (free silver), etc. Marketing was popularly seen as an issue of political power rather than a question of economic efficiency.

4. Marketing work was basically descriptive and done in popular books and political pamphlets by various political movements (muckraking). Period of strong agrarian unrest. This led to several political actions:

a. Anti-trust laws (such as Sherman Act)

b. Interstate Commerce Commission, to regulate railroads

c. Food Inspection (e.g., meat inspection following work of Upton Sinclair; FDA established)

d. Establishment of local cooperatives (e.g., cheese processing, local grain elevators, livestock marketing assns) to try to countervail power of concentrated interests.

e. Market information services
f. During this era, ag. econ. just beginning to emerge as a profession in land grant universities and USDA).

B. 1920-1940

1. Key Characteristics: This was a period that went from boom to bust. The emphasis in marketing was to raise farm incomes and protect consumers==> Sectoral policies relating to the trade aimed at:
   a. Fair Trading
   b. Collective action to raise farm incomes

2. WWI (1914-18) was boom era in agriculture. By late 1919, prices began to break, and 1920-40 was era of agricultural depression.

3. This was a period in which marketing policy was seen as part of a rural incomes policy. During this era, many of the current agricultural marketing and commodity policies were designed.

4. Much emphasis here was on establishing rules for fair trading and orderly marketing of commodities, in an attempt to boost farm incomes.

5. E.g., in 1920s:
   a. Legislation on cooperatives (Capper Volstead, which gave anti-trust exemption to coops--1922)
   b. Failed attempt to use coops to boost farm prices through promotion of exports and stock holding (Ag. act of 1929)
c. Market regulations aimed at anti-trust and “fair trading” objectives.

   (1) Grain and meat/livestock standards to facilitate trading
   (2) Fruit and vegetable inspection services (grading)
   (3) Rules on grain futures marketing
   (4) Packers and Stockyards act to regulate meatpacking--Packers consent degree.

d. At same time, ag. econ. profession developing:

   (1) Establishment of BAE in USDA
   (2) Descriptive analyses of various commodity marketing systems
   (3) Market outlook work
   (4) Marketing margins
   (5) Production Econ. and farm mgt. work

C. 1930s-40s

1. Depression measures

2. Production controls and setting up of price support programs

3. Establishment of Gov't agency to buy and store grains (CCC)

4. Agricultural Marketing Act of 1937

   a. Marketing agreements and orders (boards):

      (1) to help assure orderly marketing and stabilize markets
(2) Strengthen co-ops and group action
(3) Support prices and incomes
(4) Assure consumers adequate supplies at reasonable prices
   b. i.e., focus on both farmer and consumer concerns

5. At same time, econ. theory evolving from that of Marshall to Keynes on macro side (justifying gov't action in econ.) and Chamberlin on micro side (imperfect competition)

6. University research and extension focused on:
   a. Analysis of gov't programs
   b. Descriptive market analysis
   c. Outlook

D. 1946-60

1. Key Characteristics: Fear of post-war decline in prices led to:
   a. Emphasis on improving market efficiency rather than earlier concerns with market power
   b. Increase in the research base on marketing and application of concepts of economic efficiency to agricultural marketing

2. Concern about post-War collapse of farm prices and general economic recession--Led to concern about increasing market efficiency to help boost farm prices and benefit consumers.
3. Agricultural Research and Marketing Act of 1946--Aimed to help boost farm incomes and help consumers by:
   a. Reducing marketing costs by increasing efficiency
   b. Promoting export markets for farm commodities
   c. Promoting orderly marketing
   d. Training professionals in ag. marketing.

4. USDA and Land Grant University research:
   a. Big expansion of activities
   b. Cost and efficiency studies--economic engineering
      (1) Firm operating efficiency
      (2) Plant location
      (3) pricing efficiency
      (4) coop operational efficiency

5. Work with processors, wholesalers, and retailers

6. Consumer education programs

E. 1960-1970s

1. Key Characteristics: Split of marketing field and big growth of I-O and empirical work
   a. Subsector analysis
   b. National Commission on Food Marketing
   c. NC 117
2. Split in marketing work between
   a. Industry and subsector analysis--We focus on this. Marketing as coordination.
   b. Demand and price analysis, which grew out of outlook work.--econometric modeling

3. Publication of Bain's book in 1959 issued in era of I-O research--An attempt to address problems in imperfect markets--e.g., structures. SCP approach began to be applied to agriculture.

4. Integration of poultry industry caught ag. econ. profession with its pants down--Needed approach to analyze such vertical integration--Led to adapting SCP to subsector approach.

5. Regional and national research on food system, based on concerns about industrialization of food system and organization and control of US food system
   a. NCR 20
   b. National Commission on Food Marketing--Federal commission, established by congressional action at the request of the president (LBJ) in 1964:
      (1) Objective--evaluate the performance and competitiveness of US food system--Stemmed from concern of position of
farmer in system and widening farm-retail marketing margins

(2) 5 members appointed from the Senate, 5 from House, and 5 by the President; hired a technical staff

(3) Had subpoena power, which was first to get much empirical data from food mfg. firms on structure of industry.--George Brandow headed this. Ran from late 1964 thru mid 1966

(4) Ag. economists, working with economists from business schools and food industry

(5) Large number of technical studies by industry

(6) General conclusion--system was competitive; increasing concentration in some parts of the system, but gov't action should focus on reinforcing elements that had led to good performance in the past rather than massive restructuring of food system.

c. Followed by NC-117--1970s thru mid 80s, based at Univ. of Wisconsin--Organization and Control of US food system.

F. 1980s-present

1. Key characteristics:

   a. Restructuring of economies
b. End of sovereignty–globalization

c. End of traditional commodity and food policies on both consumer
   and farmer side

d. New theoretical developments

e. Reintegration of various parts of the field of marketing?

2. Era of profound rethinking of role of state and private sector in food
   system, both in US and abroad:

   a. US: Reagan and the Republican revolution

   b. Europe/Asia - Fall of Communism and subsequent economic
      restructuring

   c. Low/Middle-income countries: Structural adjustment and post-
      structural adjustment (e.g., Stiglitz’s *Globalization and its
      Discontents*)

3. Areas of emphasis:

   a. Deregulation--transport, FTC and re-regulation--debates about role
      of gov't in markets and subsequent debate about “re-regulation”,
      especially following Asian collapse of late 1990s.

   b. Globalization and the “end of sovereignty”--Link to
      macroeconomics and trade- Analyses of WTO, NAFTA
c. Privatization of grades and standards with rise of global supply chains and increasing role of large retailers like Walmart, and the “supermarket revolution.”

d. Food and fiber policy--not just farm policy, with domestic policy being driven by trade policy rather than vice versa

e. Food Safety

f. Consumer subsidies--e.g., food stamps and subsequent reforms

g. Farm Price subsidies
   (1) budget constraints
   (2) WTO
   (3) Farm bill of 2002 (currently up for reauthorization), with its heavy subsidies, and the impact that has had on developing countries (e.g., cotton producers). Are there alternative ways to coordinate the food system?

4. Broader industrial policy questions

5. Concern about continual increasing concentration in the food system, both in the retail sector as well elsewhere, including farming; its implications for performance (e.g., who can participate in the more tightly coordinated supply chains)

6. Theoretical Developments and the reintegration of price and institutional analysis?
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a. Rise of work on asymmetric information (transaction costs, agency theory, emphasis on contracting) as tools to help analyze these issues.

b. New I-O work

c. Game theory

d. Applications to international trade