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OPPORTUNITIES AND CONCERNS OF FOOD MARKETING, TRANSPORTATION, AND DISTRIBUTION: A LOOK INTO THE TWENTY-FIRST CENTURY

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INTRODUCTION

The economic sector beyond the farm gate -- which provides marketing, transportation, and distribution services -- has become increasingly important over time relative to farm production. In 1982, the cost of marketing farm foods reached an estimated 71 percent of total consumer expenditures. As we look to the 21st century, it is quite likely that the gamut of marketing services beyond the farm gate will account for over 80 percent of consumers' expenditures for food.

While part of this trend is due to the creation of new food products and/or new marketing services, much of the increase in the relative magnitude of marketing costs is due to the laggard productivity growth of the food system beyond the farm gate. Stated another way, the technological revolution on the farm from mechanical, chemical, biological, and managerial innovations has kept farm productivity at record levels. The output response from this farm revolution has also kept downward pressure on prices received by farmers.

In future years the combination of bioengineering and traditional agricultural research will keep the pace of productivity growth on the farm at even greater levels than the past. If this productivity growth in farm production continues, farm prices will continue to be under downside pressure, assuming that the structure of American agriculture remains fairly close to the model of atomistic competition. A comparable scenario of increased productivity and reduced costs of marketing, transportation, and distribution services is not envisaged.

LAGGARD PRODUCTIVITY GROWTH BEYOND THE FARM GATE

Both my Presidential Address before the American Agricultural Economics Association and the recently released report of the Office of Technology Assessment of the United States Congress have signaled the laggard productivity growth of the food system beyond the farm gate (Polopolus, Office of Technology Assessment). This causes poor use of scarce resources and it also contributes to inflation in the general economy. For the 1972-81 period, the index of consumer food prices increased an annual average 13.6 percent, a rate somewhat higher than nonfood prices over the same period. While the inflationary impact of food was sharply reduced in 1982, farm prices were the lowest since the 1930's. The cost of marketing services in 1982, however, increased 5.9 percent over the previous year and also above the percentage increase in the Consumer Price Index. Eighty percent of the increase in retail food prices in 1982 was for processing, shipping, and retailing (Jarratt).

A vivid example of productivity woes in food marketing comes from the daily reports of the news wire services, particularly as related to the United States meat packing industry. Wilson Foods Corporation has recently filed for bankruptcy and Greyhound Corporation will close and/or sell its 20 Armour Food Company plants. At issue is the wage rate for union workers at approximately $17 per hour versus management's interest in lowering wage rates to $6.50 per hour (Business Week, June 27, 1983, pp. 70-71). Once regarded as model contracts in agribusiness between labor and management in the 1950's, the gap between labor costs and labor productivity has undermined the profitability, as well as viability, of the nation's big names in meat packing -- Armour, Swift, and Wilson -- and permanently altered industry structure. The problems in meat packing also underscore the fact that almost one-half of the total marketing bill for food is expended for labor services.

The saga in meat packing is also akin to the competitive problems of domestic producers of automobiles, steel, textiles, cameras, and television receivers, to name a few products. There is a deluge of competitive imports from Japan and other countries with lower labor costs and better quality controls.

The expected importation of soybean products from Brazil into Memphis, Tennessee underscores the vulnerability of United States agribusiness in both production and marketing. Any large scale importation of grains from foreign sources into the heartland of America would raise serious concern about the future of our economic system and the sanctity of American democracy.

While our politicians are eager to wave the flag and compare our economic system to communistic systems (where our superiority is obvious), there is too little attention paid to the real threat posed by Japan. Japan is innovative in production, adept at marketing, and capable of delivering to consumers a superior product at lower unit cost. In effect, Japan seeks to manipulate both the supply (cost) function downward and the demand function to the right. The long run goal of the Japanese is to secure increased market share over non-Japanese competitors.

The American mentality in the food system beyond the farm gate is to attempt to manipulate demand via Madison Avenue tactics and simply pass on additional marketing costs with standard technology of processing and distribution. This system is vulnerable to competitive imports via Japanese investments in Brazil and other agriculturally productive areas of the world. Soybean imports from Brazil into the United States are the result of Japanese investments in production, processing, and transportation.

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TRANSPORTATION CONCERNS

Transportation costs will increase in the 21st century due to energy resource factors, dislocation of agricultural production, and locational shifts in the domestic population. The increase in fuel costs will result from the long awaited depletion of fossil fuels, plus the increase in world demand for energy. There will be a continued loss of certain productive agricultural lands. Higher price variability in commodity markets and sharpened world competition will create shifts in the sources of food supply.

Of possible significance to the Northeastern region of the United States, higher transportation costs may cause a change in areas of food production. In accordance with von Thunen location principles, higher transfer costs could force the relocation of highly valued and perishable commodities closer to population centers and possibly assist small scale producers in the Northeast (Hallberg). Such a scenario, however, is doubtful unless innovative production and marketing systems are developed for agricultural production in densely populated urban areas.

There is a serious need to develop intermodal transportation systems which utilize the most efficient aspects of motor vehicles, trains, airplanes, and ocean vessels. Special questions have surfaced regarding the transportation infrastructure in the Northeast. There appear to be problems involving trailers on flat cars (TOFC), low and poorly maintained bridges, and lack of a unified railroad system in the Northeast. Conrail may not survive, even if its workers become owners of the company. Mergers of other rail lines may improve overall efficiency. There is also a lingering concern about lumping in certain produce terminals.

Since the Northeast is a highly populated area and an important receiver of foods for the consuming public, agricultural economists have an important role to play in transportation policy and the economics of more efficient transportation systems. Producer groups in the region, however, may resist attempts to modernize the transportation sector on the theory that local production may be sacrificed to competitive imports from other regions and countries. An encouraging sign is that regional research projects have been approved which link agricultural economists in food supply states to the South with agricultural economists in the food deficit Northeast.

PROCESSING AND PACKAGING EFFICIENCIES

The multinational, multiproduct food processor will seek reliable, low cost raw materials from any location in the world. Public interest in food processing should focus upon converting raw agricultural commodities into processed foods at minimum cost. Also, minimizing the costs of energy, labor, capital, packaging materials, and other non-food inputs will be critical to overall efficiency and the plant location decision.

Environmental issues will continue to be important in the processing and packaging segment of the food and agricultural system. The increased expenses associated with the disposal of agricultural by-products and wastes from processing operations will make their utilization more attractive. There is also a need to minimize disposal problems and encourage the reuse of food packaging materials.

A strong case can be made for increased collaboration between agricultural economists, food scientists, and food engineers. While the economic-engineer of the Bressler era is now near extinction, there does appear to be an important role for the economist in food processing and packaging. At this point, it appears that the agricultural economist has abdicated the economics of new technology in food processing and packaging to the professional engineer.

SHIFTING CONSUMER DEMANDS

Shifts in consumer demand will continue into the 21st century and impact food production and marketing systems. It is predicted that the demand for fresh fruits and vegetables, poultry, and fish will continue upward, with decreases in red meat consumption on a per capita basis. There will be increased attention and interest by consumer and medical oriented groups on the healthful aspects of food.

Changes in consumer demographics will influence food demand. Special attention and analysis will be needed for the following factors: ethnic and racial composition, single family households, number of children per family, role of women in the labor force, age distribution, relative prices, and per capita real incomes.

The relationahip between food health and food safety will receive increased attention in the 21st century. A better public understanding of the relationship of food to health and degenerative diseases will create a greater need for new food products. This in turn will require analysis of marketing opportunities for food products which cater to people with real or potential health and medical problems. We will likely have food products which specifically eliminate certain ingredients, eg., salt, sugar, or caffeine, plus other sets of food products which contain certain additives, eg., ascorbic acid, iodine, or potassium.

Future consumer behavior research needs to monitor, analyze, and predict consumer behavior under alternative economic and institutional situations. There is an important role for extension regarding public awareness of changes in food demand and the impact of these changes upon participants in the production, marketing, and consumption of food. By definition, the entire citizenry is affected. There is a special role for extension specialists regarding the relationship between human helath and food consumption. In general food economists must develop a closer professional relationship with food scientists, nutritionists, and medical scientists.

EXPANDING WORLD MARKETS

Increased exports of value-added products, such as processed foods, may be one way to earn foreign exchange, increase farmers' net returns, and improve our competitive position in world markets. This would be in contrast with America's historical orientation of exporting raw agricultural commodities.

One function of the agricultural economist in the Northeast region will be to identify potential new products where the region may have a competitive advantage over other areas of the world. This search process will require close collaboration with other agricultural scientists. Genetic engineering could possibly open up some interesting situations for the Northeastern region.

Expansion of world markets will require increased research and education on international economics and trade policies. The exchange rate for the United States dollar has become a singularly important variable affecting U.S. trade. The U.S. dollar is now overvalued by approximately 20 percent. As our currency value has climbed, the competitiveness of U.S. exports has declined. Imports other than oil have surged upward. Capital investment has been curbed or postponed by many firms. The "super" or "sky high" dollar has also encouraged some companies to invest abroad rather than at home.

Overall, the overvalued U.S. dollar has lowered Gross National Product, induced higher unemployment, increased real interest rates, and attracted enormous amounts of foreign money. One beneficial aspect has been the slow down in the rise of the Consumer Price Index.

Increased volatility in world commodity and product markets will require better models of demand and supply relationships, as well as price forecasting. Tariff and non-tariff trade policies as well as international finance and international relations have become crucial aspects of future planning for farmers, processors, handlers, exporters, importers, and government agencies.

PUBLIC INVESTMENTS IN FOOD SYSTEMS RESEARCH AND EDUCATION

While the food marketing, transportation, and distribution sector accounts for over two-thirds of the agribusiness economy, federal investments for Research and Development (R&D) to public institutions are meager. Most of the public investment is oriented toward post harvest R&D and concentrated on farm level or first handler problems. Generally ignored in the post harvest R&D effort are the productivity and efficiency problems of transportation, wholesaling, storage, retailing, and food service establishments and industries. Moreover, the role of economics and management science is relatively minor to the total public investment in post harvest technology when compared with the biological and physical sciences (Polopolus, p. 808).

It is argued by some that public investments are not needed in view of rather substantial R&D investments by private companies. Ruttan has estimated the private sector R&D for agricultural inputs, food processing, and distribution to be over $2 billion (Ruttan). Business Week reported in 1979 that R&D by food and beverage firms was 0.5 percent of sales and 15.3 percent of profits (Ricker, Anderson, and Phillips). The rate of R&D increased to 0.7 percent of sales and 18.4 percent of profits in 1982 (Business Week, June 20, 1983). Compared with U.S. industry as a whole, food industry R&D is low, as the all industry R&D rates were 2.4 percent of sales and 56.4 percent of profits in 1982. Much of the research and development which does occur in the food industry is focussed upon the proliferation of new products and not necessarily oriented to productivity and efficiency considerations.

CONCLUDING REMARKS

If the United States is to regain its economic competitiveness in the 21st century, it needs to seek persistently to introduce new technologies and efficiencies in both the production and marketing of food. Madison Avenue is adroit at demand stimulation and this is needed for effective marketing strategies. But our products must also be priced competitively in domestic and world markets. The key to future competition in food markets will be cost reduction technologies in food transport, processing, storage, and retailing. Electronic marketing, laser scanning, and innovative applications of computer technologies offer many exciting opportunities for improved marketing performance.

Because labor costs now account for almost one-half of the food marketing bill, there is a great need to improve labor productivity and labor relations. The entire field of labor economics and labor management for processing, marketing, and distribution requires specialized attention in college teaching, extension, and research programs.

Because of the population concentration in the Northeastern region of the United States, agricultural economists in the region have a special role to conduct analyses of alternative public policies affecting marketers, distributors, and consumers in the region. This need exists even if the food products do not originate in the Northeast region. The effort is required before the reality of new laws and/or private actions.

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