

Globalization of the Processed Foods Market

PART I: The Processed Food Sector in Global Perspective

The four chapters of Part I address patterns of global commerce in processed foods, place such commerce in context relative to both the processed foods sector as a whole and to the agricultural sector, and analyze such commerce in terms of both its driving forces and its consequences. Chapter 1 describes the sector, conveys the role of the related U.S. industries in international commerce, and examines the implications of globalization on consumers, firms in the food and agricultural sector, and others. Chapter 2 describes patterns and trends in international trade in processed foods, discusses the extent to which the United States imports and exports similar products and the importance of such “two-way” trade, and examines the factors that affect these patterns of trade. Chapter 3 addresses foreign direct investment in the processed foods sector, the impetus behind direct (as opposed to portfolio) investment, and the involvement of the U.S. food processing, wholesaling, retailing, and food service industries in foreign direct operations. Chapter 4, perhaps the core of the report, sifts through information on the leading firms in the processed foods sector, outlines their organization and their methods of doing business globally, and examines the issue of whether firms’ decisions to operate foreign facilities affect U.S. trade performance.

Definitions and Clarifications

As with any classification scheme, there are multiple ways of deciding what is or is not a processed food product. This report adopts the definition of “Food and Kindred Products” in the Standard Industrial Classification (SIC) system developed by the U.S. Department of Commerce. The SIC is the statistical classification underlying all establishment-based U.S. economic statistics that are classified by type of industry (OMB, 1987). It assigns establishments to industry groups based on their principal economic activity. Under the SIC system, establishments or plants that produce similar products, use similar processes, or provide similar services are assigned the same two-digit code number. The 49 industries in the processed foods sector are known as “Food and Kindred Products” and fall into group SIC-20, as listed in table 1.¹

SIC-20 includes establishments that manufacture or process foods and beverages for human consumption, as well as certain related products, such as chewing gum, fats and oils, and animal feeds. SIC-20 includes only foods, not agricultural products in general. Thus, tobacco products and textiles are not included in SIC-20, even though they are derived from agricultural operations. Similarly, the processed foods industries include fresh meat products and processed seafood, but not fresh fruits and vegetables. However, the processed foods category does include some products that are excluded when the Department of Commerce calculates output from the agricultural sector. Prominent among these products are: aquaculture output, such as frozen fish and canned

¹Three other industries are closely connected to food processing: food wholesaling (a portion of SIC-51), food retailing (SIC-54), and food service (SIC-58). Food wholesaling and food retailing together constitute the food distribution system, our food-at-home marketing network. Wholesale and retail firms work to ensure that a ready supply of a large variety of food products is available on demand to consuming households. Major functions of this network include food product assembly and distribution, product transportation, and storage and preservation. The food service industry constitutes the “away-from-home” food consumption market. This industry is dominated by restaurants and fast-food outlets, but also includes other commercial establishments, plus food service in establishments that cater to in-house residents, such as nursing homes and educational institutions.

tuna; tree produce, such as ground coffee and shelled nuts; and alcoholic beverages, since they are derived from grains and fruits.

Products in SIC-20 must be value-added products, which do not always correspond to the more problematical “high-value products” designation. Fresh fruits, seafood items, and unshelled nuts are examples of high-value products that have undergone no processing, and hence are excluded from SIC-20. Conversely, some “low-value” products are included in SIC-20, such as animal feeds and manufactured ice, because some processing had to take place to get the product to the customer. A final clarification was alluded to earlier, the distinction between intermediate goods and final goods. Many processed food products serve as inputs into other manufactured foods and other goods, particularly those in the dairy products, grain mill products, and fats and oils categories. All of these items are included in SIC-20, whether the final destination is use as an intermediate product or consumption as a final good. In addition, many products are sold at a number of value-added levels. For example, beef sold “on hoof” is listed as a raw commodity. However, as beef moves further down stream toward the consumer, it is always listed in the processed food category, whether it is sold as carcass beef (slaughter), as boxed beef (initial packaging), or as final cut (shrink-wrapped in the grocery display case).

Table 1—Standard Industrial Classification (SIC) codes for food and kindred products

SIC	Product description	SIC	Product description
20	Food and kindred products	206	Sugar and confections
201	Meat products	2061	Cane sugar, raw
2011	Meat packing	2062	Cane sugar, refined
2013	Sausage and prepared meats	2063	Beet sugar
2015	Poultry dressing plants	2064	Candy and confectionery products
202	Dairy products	2066	Chocolate and cocoa products
2021	Creamery butter	2067	Chewing gum
2022	Cheese, natural and processed	2068	Salted and roasted nuts and seeds
2023	Condensed and evaporated milk	207	Fats and oils
2024	Ice cream and frozen desserts	2074	Cottonseed oil mills
2026	Fluid milk	2075	Soybean oil mills
203	Preserved fruit and vegetables	2076	Vegetable oil mills
2032	Canned specialties	2077	Animal/marine fats and oils
2033	Canned fruit and vegetables	2079	Shortening and cooking oils
2034	Dried fruit and vegetables	208	Beverages
2035	Sauces and salad dressings	2082	Malt beverages
2037	Frozen fruit and vegetables	2083	Malt
2038	Frozen specialties	2084	Wines, brandy, and brandy spirits
204	Grain mill products	2085	Distilled and blended spirits
2041	Flour and grain mill products	2086	Soft drinks and carbonated water
2043	Breakfast cereals	2087	Flavorings, extracts, and syrups
2044	Rice milling	209	Miscellaneous
2045	Blended and prepared flours	2091	Processed fishery products
2046	Wet corn milling	2092	Fresh fish
2047	Dog, cat and other pet food	2095	Roasted coffee
2048	Prepared animal feed	2096	Potato chips
205	Bakery products	2097	Manufactured ice
2051	Bread and other	2098	Pasta products
2052	Cookies and crackers	2099	Other food preparation
2053	Frozen bakery products, excl. bread		

CHAPTER 1

The U.S. Food Sector

Food Processing and Distribution in the United States

The food processing industries are the largest manufacturing sector in the U.S. economy, accounting for approximately 14 percent of total U.S. manufacturing output (U.S. Department of Commerce 1994). Food processing shipments have increased steadily in the last decade, from \$330 billion in 1987 to \$404 billion in 1992 and \$430 billion in 1994.² By contrast, on-farm cash marketing receipts from livestock and crops production totaled less than \$200 billion (Economic Report of the President, 1995). In fact, the total value-added (revenues less cost of purchased materials and energy) of the three main industries in the food marketing system (food processing, food wholesaling and retailing, and food service) was \$372 billion, over four times greater than the \$84.6 billion contribution of farm output to gross domestic product.

The number of food processing establishments declined from 28,193 in 1972 to 20,583 by 1987. This decline seems to have halted, however. By 1992, the number of establishments had increased slightly, to 20,792. There has also been a slow longrun decline in the number of employees in the U.S. food processing industries—from 1.75 million in 1972 to 1.64 million in 1982. Since 1982, the number of employees has remained virtually static, with only small year-to-year fluctuations.

Trade in Processed Foods and Farm Commodities

The processed foods sector is much larger than the farm sector not only in total value of production, but in international trade as well.

²In processed foods terminology, the term “shipments” refers, not to international transport, but to the domestic transport of processed foods from production plants to all destinations, including wholesalers, retailers, other plants, and export facilities.

Yet Dayton and Henderson (1992) point out that, compared with trade in commodities “. . . agricultural economists have given relatively little attention to international trade flows in processed foods” (p. 1).

The generally accepted view of agricultural trade is told from a comparative advantage argument emphasizing abundant, fertile land and a favorable farm structure. In this model, national specialization results in the United States exporting corn and soybeans, while importing bananas and papayas. Processed foods are different. Technology, with highly differentiated foods branded and made convenient for consumers, adds many dimensions not captured by standard analysis of comparative advantage.

Great distinctions can be made between raw agricultural products and processed foods at the producer level and at the consumer level. First, the distance to consumers is much less for processed foods manufacturers than for agricultural producers. The farther along a product moves in time, space, and form away from the farmer, the closer its connection to the consumer. Perhaps the most apparent result is branded products, which are not supplied by any but the most vertically integrated farmers. Grains fit the comparative advantage model very well, grain mill products fairly well, meat products less well, and Big Macs not at all.

The link between processed foods manufacturers and consumers is fed by the high incomes and individualistic nature of American society. These are reflected in the entrepreneurial nature of U.S. business and highly developed consumer preferences. Technology, information, communications, and research and development have all played a part in making the United States a leader in the processed foods industries.

The higher the level of processing, the higher the level of product differentiation, thanks to a very sophisticated marketing research capability in the United States. Manufacturers are able to discover what consumers want and deliver it with the product characteristics that consumers prefer. And the more differentiated the product, the more complex the marketing and the less dependent consumer

choice on lower costs of production of the raw agricultural commodity. There are fewer distinctions to be made between brands of flour than among brands of bread, for instance. All other things being equal, the cheaper amber waves of wheat in Kansas than in Germany still matter. But other things are not equal, and U.S. processed foods industries are quite capable. In processed products, they may be able to overcome the cheaper waves of grain in Argentina than in Iowa.

Commodity trade has received much more attention than processed foods trade. The focus on raw products trade may derive from its close association with agriculture. The family farm, “amber waves of grain,” the wholesomeness of rural communities — these are all notions that have become ingrained into the average citizen’s picture of U.S. agriculture. Raw commodity exports have consistently generated positive trade balances since 1960. With so much attention paid to U.S. trade deficits during the past two decades, one would naturally expect that any industry consistently generating strong surpluses would be favorably received by the media and the U.S. population. Processed foods have only recently begun to generate trade surpluses. The attention paid to commodity exports is also likely due to the enormous growth of the grain trade in the 1970’s. Grain companies and commodity producer associations publicize their high levels of grain exports, since farmers benefit from the higher prices that result from increased commodity exports. Finally, raw commodity trade accounted for the larger share of U.S. food and agriculture trade until recent years.

Whatever the reason for the fascination with commodity trade over processed foods trade, when presented side by side, the numbers are startling. In 1972, the value of world trade in agricultural commodities and processed foods across all countries was \$65 billion, of which 42 percent was bulk commodity trade (fig. 1). By 1982, after what is generally regarded as a decade of enormous growth in commodity trade, the total value of commodity and product trade had more than tripled, to \$201 billion. However, the commodities share of that total had decreased, to less than 40 percent. Between 1972 and 1993, the total value of international trade in processed food products climbed from \$38 billion to \$256

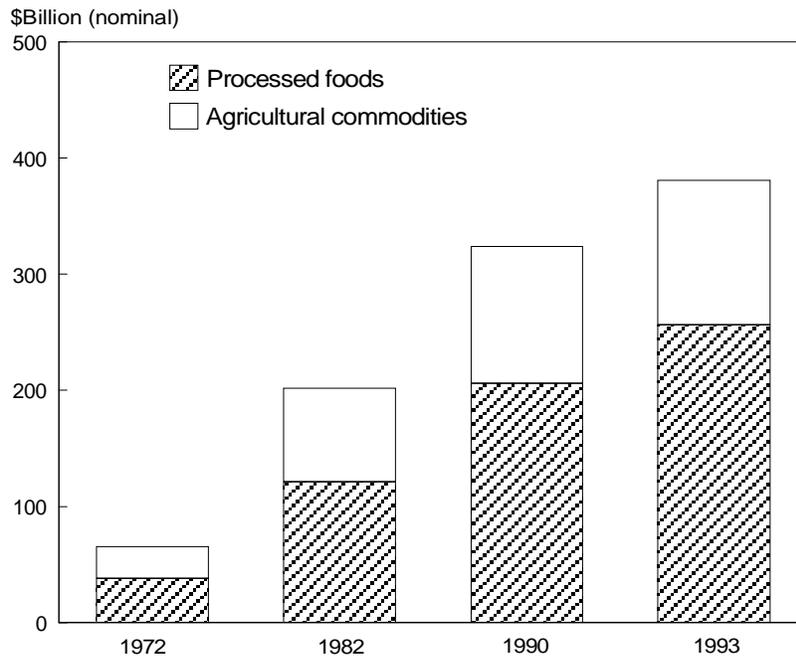
billion, an annual growth rate of 9.5 percent (Dayton and Henderson, 1992). In 1993 the global value of international trade in processed foods and beverages, constituted two-thirds of the \$381 billion global trade in agricultural products and commodities (Henderson and Handy, 1994). Thus, processed food's share of global agricultural trade rose from 58 percent in 1972 to 67 percent in 1993.

The U.S. Role in International Processed Foods Markets

There are no data available on the total value of food processing shipments worldwide. However, the Organization for Economic Co-operation and Development (OECD) provides a Structural

Figure 1

World trade in agricultural commodities and processed foods, 1972-90



Source: Economic Research Service, USDA.

Analysis (STAN) industrial database. This internationally comparable time series currently covers 20 countries (19 OECD countries plus South Korea) for all manufacturing industries. Data for the food and beverage industry (reasonably comparable to the U.S. food processing industry) are consistently defined across all countries.

In 1992, the gross output of processed food for all 20 countries totaled \$1.5 trillion (table 2). Output from the U.S. food processing industry (adjusted for international consistency) was valued at \$384 billion, accounting for 26 percent of the OECD-plus-Korea (OECDK) total across all countries. Japan had the second largest food processing sector with shipments of \$281 billion, followed by Germany, France, and the United Kingdom at \$155 billion, \$118 billion, and \$93 billion, respectively. The U.S. food processing industry accounted for 13.5 percent of total U.S. manufacturing output, the same as the average for all OECDK countries. Food processing's share of total manufacturing output ranged from a high of 33.7 percent in New Zealand to a low of 8.9 percent in Japan.

Table 2—Output and employment in food processing, United States and OECD-plus-Korea, 1992

Region/country	Gross output (shipments) \$ billion	Share of total manufacturing Percent	Total employment Thousand	Gross output per employee \$1,000
OECD plus Korea	1,502	13.5	8,199	183.2
United States	384	13.5	1,615	237.7
Japan	281	9.8	1,772	158.8
Germany	155	11.3	841	184.0
France	118	16.7	561	210.1
United Kingdom	93	16.3	559	165.6
Canada	39	14.8	223	177.1
Australia	26	20.8	188	137.3

Source: ERS tabulation of OECD data.

Food processing plants on average are larger in the United States than in other OECDK countries, and are also more capital intensive. Although the U.S. share of OECDK food processing output in 1992 was 26 percent, its share of food processing employment was only 20 percent. Labor productivity (output divided by employment) in the United States is approximately 30 percent greater than the OECDK average. Labor productivity in the U.S. food processing industry was approximately \$238,000 per

Table 3—Country of headquarters and sales of the world's 50 largest food processing firms, 1993

Company	Headquarters	Processed food sales	Total company sales
<i>Billion dollars</i>			
1. Nestle S.A.	Switzerland	36.3	39.1
2. Philip Morris/Kraft Foods	USA	33.8	50.6
3. Unilever	UK/Netherlands	21.6	41.9
4. ConAgra	USA	18.7	23.5
5. Cargill	USA	16.7	47.1
6. PepsiCo	USA	15.7	25.0
7. Coca Cola	USA	13.9	14.0
8. Danone S.A.	France	12.3	12.3
9. Kirin Brewery	Japan	12.1	12.1
10. IBP, Inc.	USA	11.2	11.7
11. Mars, Inc.	USA	11.1	12.0
12. Anheuser-Busch	USA	10.8	11.5
13. Montedison/Feruzzi/Eridania	Italy	9.9	12.3
14. Grand Metropolitan	UK	9.9	11.2
15. Archer Daniels Midland Co.	USA	8.9	11.4
16. Sara Lee	USA	7.6	15.5
17. Allied Domecq Plc	UK	7.2	7.2
18. RJR Nabisco	USA	7.0	15.1
19. Guinness Plc	UK	7.0	7.0
20. H.J. Heinz	USA	6.8	7.0
21. Asahi Breweries	Japan	6.8	6.8
22. CPC International	USA	6.7	6.7
23. Dalgety	UK	6.7	6.7
24. Campbell Soup	USA	6.6	6.6
25. Bass Plc	UK	6.6	6.6

Continued—

person in 1992 compared with \$183,000 per person across all OECDK countries. Average labor productivity in the U.S. food processing industry was much higher than in most of the other major food processing countries: France (\$210,000), Germany (\$184,000), United Kingdom (\$166,000), and Japan (\$159,000). Because these numbers are averages that reflect the actual size and product mix of food processing plants in each country, they present a slightly distorted picture. Considering only the leading food processing firms in each country, one finds that these firms have access to the

Table 3—Country of headquarters and sales of the world's 50 largest food processing firms, 1993—continued

Company	Headquarters	Processed food sales	Total company sales
<i>Billion dollars</i>			
26. Suntory Ltd.	Japan	6.6	6.6
27. Associated British Foods Plc	UK	6.5	6.5
28. Kellogg Company	USA	6.3	6.3
29. Hillsdown Plc	UK	5.8	6.0
30. Quaker Oats	USA	5.7	5.7
31. General Mills	USA	5.6	8.5
32. Tate & Lyle Plc	UK	5.6	5.6
33. Cadbury Schweppes	UK	5.6	5.6
34. Coca Cola Enterprises	USA	5.5	5.5
35. Seagram	Canada	5.2	5.2
36. Sapporo Breweries Ltd.	Japan	5.1	5.1
37. Borden, Inc.	USA	4.8	6.7
38. Nippon Meat Packers	Japan	4.8	4.8
39. Yamazaki Baking	Japan	4.8	4.8
40. Tyson Foods Inc.	USA	4.6	4.7
41. Heineken	Netherlands	4.6	4.6
42. United Biscuits	UK	4.5	4.5
43. Fosters Brewing Group LTD	Australia	4.4	4.4
44. Ajinomoto Co., Inc. Japan	Japan	4.3	5.3
45. Snow Brand Milk	Japan	4.3	4.8
46. LVMH Moet Hennessy	France	4.2	4.2
47. Besnier S.A.	France	4.1	4.1
48. Itoham Foods Inc.	Japan	3.9	3.9
49. Meiji Milk Products Japan	Japan	3.9	3.9
50. Hershey Foods Corp. USA	USA	3.5	3.5

same technology regardless where their plants are located. However, the OECD results are consistent with a study by McKinsey that found labor productivity in food processing during 1987-1990 to be 20 percent lower in Germany than in the United States and 67 percent lower in Japan (McKinsey and Company, 1993).

U.S. firms dominate the list of the world's 50 largest food processing firms (table 3). In 1993, the United States accounted for 6 of the world's 10 largest food processing firms and 21 of the 50 largest firms. The United Kingdom and Japan are second on this list, each with 10 firms listed among the top 50 food processing firms. Only 2 of the top 50 firms were headquartered outside the United States, Europe, or Japan — Seagrams in Canada and Fosters in Australia. Turnover among the top 50 firms is moderate. Seven firms that were on the 1989 list were not on the 1993 list.

In summary, the United States is a major player in international processed food markets. It is near or at the top in firm size, labor productivity, total production, and international trade.

Chapters 2 and 3 examine in much greater detail the levels and trends in U.S. exports and imports of processed foods and beverages, and the extent of inbound and outbound foreign direct investment. Prior to this more detailed analysis, however, comes an exploration of the impacts of the globalization of the processed foods market on particular individuals, groups, and sectors in the U.S. economy.

Implications of Globalized Food Markets for Consumers and Industry

Clearly, markets for processed foods are increasingly global in character, and they are not typified by small firms selling standard goods. Processed products are differentiated and are often branded, relatively few firms typically dominate individual product lines, and firms often realize increasing returns to size. Patterns of international trade in such “imperfectly competitive” markets vary

widely from the international trade in indifferenced goods that characterizes trade in agricultural commodities. Many other global connections exist, including intra-industry trade (for example, the United States both imports and exports beef); trade in ingredients used for the manufacture of food products; production of foreign brands under license; joint ventures and co-packing arrangements between domestic and foreign food processors; and strategic alliances for assembling the latest in processing and packaging technology, product formulation, ingredient supply, and merchandising and distribution methods from around the world.

This variety in patterns of global commerce suggests a range of potential economic, social, and cultural impacts on both the originating and host countries (and on their consumers, laborers, capital owners, and businesses) that is much broader than the gains to trade traditionally recognized in conventional (neoclassical) economic thought. This section highlights the impacts of this eclectic pattern of globalization on consumers, on agricultural producers, and on food and agribusiness firms.

Consumers

International commerce in processed food is a win-win proposition for consumers: overall, consumers benefit both on the inbound side (imports and inward FDI) and on the outbound side (exports and outward FDI). Enhanced variety and selection are obvious benefits for consumers from inbound foreign commerce. For example, U.S. citizens routinely consume Mexican tortillas, Danish ham, Canadian bacon, Japanese sushi, Spanish tapas, Chilean fruits, German sausages, and Italian pasta. These are served with French wine, English ale, and Australian beer, and dinner is followed by Swiss chocolates, Dutch ice cream, and Colombian coffee. In similar fashion, foreign consumers enjoy a wide variety of American foods as a result of outbound commerce from the United States.

Some of these foreign foods are imported, and some are produced by U.S. firms under contract or license from foreign firms or by U.S. affiliates or subsidiaries of foreign firms. In the food service (restaurant) industry, virtually all inbound commerce is through

FDI, contract, or license. As in foods for home consumption, increased variety and selection are major benefits afforded consumers. Foreign food service firms provide U.S. consumers with a wide range of prepared eat-in or take-out foods, including such seemingly American product lines as Burger King, which is owned by Grand Metropolitan, PLC, in the United Kingdom or Dunkin' Donuts and Baskin-Robbins, both owned by Allied-Domecq in the United Kingdom.

Perhaps less transparent but of considerable importance are the competitive impacts of inbound commerce on the domestic food industry. Imported goods compete directly with other goods produced in the United States, as do foods that are produced here by affiliates of foreign firms or by domestic firms under contract or license with a foreign firm. This greater competition limits the ability of domestic food processors and retailers to increase food prices. Moreover, it also encourages domestic firms to innovate, both in terms of finding more cost-effective means of production and marketing, and in developing new and improved products that better meet consumer demands. Quantitative estimates of these pro-competitive impacts in specific markets have shown that gains from liberalizing international commerce due to increased competition are two to three times larger than gains from elimination of import tariffs (see, for example, Cox and Harris 1985 for Canada; Smith and Venables 1988 for the European Union).

Consumers can also benefit from outbound commerce. Gains can most easily be seen in the form of increased employment and income associated with exports of processed foods. Food processing is a "value-added" enterprise; workers add value to raw agricultural commodities through food manufacturing, packaging, distribution, retailing, and service functions. Typically, the greater the value-added component, the greater the employment share of total production expenditures and the higher the hourly wages. Thus the domestic work force, and thereby domestic consumers, benefit more in terms of employment and income when U.S. firms export value-added products, such as frozen apple pies, instead of apples. Value-added continues to increase for food products as the products move "down-stream" toward the final consumer, whether

domestic or foreign. There is also an income multiplier, that is, income earned by workers in the food system is spent in the local economy.

Consumer gains from outbound FDI and foreign production under U.S. license and contract are less clear, but are nonetheless real. To the extent that consumers are investors, their income is enhanced by dividends and other payments received as shareholders in a firm with profitable overseas operations. However, the potentially greater consumer benefits accrue from lower costs for domestic food products as a result of food manufacturers and distributors spreading their fixed costs over a larger volume by extending their operations overseas. That is, many firms can gain economies of size by expanding their operations abroad, thus lowering per-unit costs for products sold to domestic buyers as well as to foreign consumers.

Lower per-unit costs are also achieved through attributes and activities unique to a particular firm. Contemporary economic thought regarding multinational firms identifies the existence of firm-specific assets as a principal factor encouraging firms to develop foreign operations (see, for example, Dunning 1981, Ethier 1982, and Grossman and Helpman 1991). Firm-specific assets, sometimes equated with headquarter services, refer to unique advantages firms have created through intellectual activities. For example, firm-specific assets can include such things as innovative production and distribution methods, merchandising expertise, ownership of brand names with high consumer acceptance, unique product formulations, and special relationships with ingredient and commodity suppliers. Investment in firm-specific assets can be substantial, easily 15 to 20 percent of total assets for typical producers of branded food products, and sometimes as high as 30 to 40 percent (see chapter 4). Firms are motivated to expand the reach of their markets in order to spread their investment in firm-specific assets over a larger volume. Outbound investment and licensing for foreign production are ways of doing this. The result is lower total cost per-unit sold, which often yields lower consumer prices (Smith and Venables 1988).

It is in this phenomenon of firm-specific assets where global commerce in processed foods differs dramatically from international trade in agricultural commodities. Because agricultural commodities are undifferentiated and are sold in markets that closely resemble the textbook model of perfect competition, selling firms are typically not characterized by large investments in firm-specific assets and do not benefit from the resulting increase in returns to size. Thus, increased volume by expanding operations abroad is usually associated with constant or even increasing per-unit costs. In that case, foreign commerce can actually raise domestic prices. For processed foods, by contrast, per-unit costs can actually decline as a result of globalization of markets (Cox and Harris 1985).

Employment and Income

The labor force can also benefit from inbound commerce; most directly so in the case of inward FDI and domestic production under license and contract. Typically, inbound commerce occurs because a foreign firm discovers a way to expand the size of the domestic market through new and innovative products that attract new spending, or through more efficient processes that lower costs and thus increase effective consumer buying power. The result is greater employment and higher aggregate consumer income. Even when foreign direct investment involves the purchase of existing plant and equipment, the motivation for the acquiring firm is to exploit its product innovations or operating advantages in order to gain market share. This, in turn, often generates more aggressive marketing by domestic rivals, resulting in greater total market volume.

By contrast, there are often costs to employment and consumer income associated with food imports. To the extent that the competition from imported goods adversely affects production levels of domestically produced goods, the U.S. work force could suffer in terms of higher unemployment. This could also result in downward pressure on wages and, to the extent that either wages or hours decline, overall income levels could fall. However, because imports are only a small fraction of total inbound commerce in

processed foods, in the aggregate this effect is generally believed to be more than offset by gains associated with greater domestic employment generated by inbound FDI, and by contract and licensing operations of foreign firms.

Agricultural Producers

Producers of agricultural commodities are also subject to gains and losses from globalization of processed food markets. While the impacts of globalization on consumers are mostly positive, implications for agricultural producers are ambiguous. For the most part, producers as a group benefit from exports of processed foods and from inbound foreign direct investment. However, processed food imports and outbound FDI can generate both gains and losses to agricultural producers, the net effect of which is difficult to quantify.

Gains and losses from exports and imports of processed foods are relatively straightforward. If U.S. food manufacturers increase their exports of processed foods in response to increased demand by foreign consumers for American products, domestic production increases. The increased production of processed foods raises the demand by food manufacturers for the agricultural commodities used as ingredients. This, in turn, leads to an increase in total revenue in the commodity market, an outcome generally beneficial to producers.

Reversing this logic raises expectations that increases in U.S. imports of processed foods may reduce revenues to U.S. commodity producers. To the extent that imported foods displace domestic products in the consumer marketplace, the demand by food manufacturers for basic agricultural commodities declines, thereby lowering revenues to commodity producers. This is a clear case of producer loss.

It is virtually impossible to net out the overall effect of imports and exports of processed foods on commodity producers without a detailed case-by-case analysis. In general, however, because the annual values of U.S. imports and exports of processed foods are

roughly equal, the net impact may be relatively small. The trend in recent years toward faster growth in U.S. exports than in imports suggests, on balance, that U.S. trade in processed foods may be increasingly beneficial to the U.S. farm sector.

The effect of FDI on producers is even more difficult to evaluate. Inbound foreign direct investment is generally positive for commodity producers, especially to the extent that foreign investment adds to existing capacity for food manufacturing and distribution and uses local raw materials. Like their domestically owned competitors, U.S. affiliates of foreign food manufacturers and food service firms need agricultural commodities and intermediate ingredients as inputs. Thus, the addition of new facilities increases the overall demand for agricultural commodities, with corresponding benefits to producers.

When a foreign concern purchases existing facilities, producers could gain or lose. Positive outcomes could arise under two scenarios: (1) if the plant or firm had been a marginal producer that may have been closed had foreign interests not stepped in, and (2) if the foreign entity brings new product ideas or new production, merchandising, or distribution techniques that result in increases in processed food output. In both of these cases, the demand for agricultural commodities increases, or at the least a decrease is prevented, and agricultural producers benefit. On the other hand, producers could lose sales if the foreign investor closes some production facilities.

Contrary to the typical case for exports and imports, the expected impacts of outbound foreign production are not a “mirror image” of those for inbound foreign production. When U.S. firms invest in foreign operations, they often add a complement of U.S. ingredients to commodities purchased in the host country. This can increase demand for certain farm commodities either as direct ingredients or as inputs for semi-processed ingredients manufactured in the host country. This occurs because key domestic commodities or ingredients are considered essential to foreign manufacture of the American-style foods being produced and sold abroad. Indeed, as discussed earlier, contemporary explanations of the reasons firms

extend their operations abroad depend on their ability to expand the market for firm-specific advantages such as unique product characteristics and formulations. There are many examples: McDonald's world-wide use of Idaho potatoes for french fries; Ocean Spray's use of U.S. cranberry juice as a key ingredient in foreign-produced varieties of its fruit drinks; Coca-Cola's exports of cola syrup to foreign-affiliated bottlers; overseas shipments of U.S. citrus concentrate for use by foreign formulators of Sunkist soft drinks; and Hershey's delivery of U.S.-produced chocolate syrup for use in foreign production of its candy bars.

Agro-Industrial Firms

The agricultural and food system can be divided into six interrelated sectors of activity: supply of farm inputs, farm production, food processing/manufacturing, wholesaling, retailing, and food service. The implications of globalization in processed food markets on the first two of these sectors follows the discussion above for agricultural producers. In general, as agricultural producers benefit from increased volume, so does the farm supply sector.

In this section, implications for sectors "downstream" from farms are examined. These are the firms and industries most directly involved in commerce in processed foods. The term "downstream" is used to convey the sense of product flow through the value-adding chain, from production to final consumption. While each of the downstream sectors realizes some sector-specific impacts of the increasing globalization of the processed foods market, these sectors are affected the same in a number of ways. These common threads are discussed first, followed by some sector-specific implications.

Many downstream firms operate in markets that can be characterized as imperfectly competitive. In imperfectly competitive markets, the number of sellers is small enough relative to the size of the market that an individual firm may have some degree of market power over the selling price of its products. Firms typically gain market power by differentiating their goods and services from those of their rivals, thus using their firm-specific assets to create a unique

“consumer franchise.” While firms can, and sometimes do, use such market power to raise prices and profits, strategies vary widely. Some firms concentrate more on expanding total sales, while some adopt low-price strategies to expand market share, and others emphasize the development of new products, innovative sales methods, or more efficient means of production or distribution. By contrast, perfectly competitive markets are those which have such a large number of (relatively small) participants that no one seller is able to individually affect price or total market volume.

Globalization affects the use of market power in a number of ways. First, foreign firms become competitors with home-market firms in supplying products to the domestic market. The presence of foreign firms increases the level of price competition, thereby limiting price increases and, in many cases, actually lowering product prices throughout the market. Second, it puts competitive pressure on home firms to find innovative ways to lower their costs. Third, less innovative or poorly managed firms that have been operating at the margin may be forced to leave the market, thus raising the overall efficiency of the entire industry. Fourth, as foreign firms bring different products to the market, home firms tend to expand their efforts in new product research and development, thus increasing even further the variety of products available in the domestic marketplace. In many cases firms discover new economies of scope as their range of products increases. By expanding the range of products sold, they spread their facilities, marketing, and management over a larger volume, thereby reducing per-unit costs.

In addition to economies of scope, firms in the processed food sector can benefit from the potential for economies of size and scale that increased globalization brings. When new markets are opened in foreign countries, increased production is needed at all levels in the processed food sector. Standard economic thinking holds that, in perfectly competitive markets, increased production is undertaken at increasing per-unit costs. However, when markets are imperfectly competitive, increased production of a given product may come at lower per-unit cost through economies of size and scale; for example, efficiencies gained from acquiring inputs in

greater quantities or more extensive utilization of existing production technology. Increased size contributes to more than just lower production costs. Typically, larger firms also have advantages in information gathering and processing, in transportation and distribution, and in research and development.

Additionally, firms in imperfectly competitive markets have an inherent potential for greater gains from free trade than do firms in the textbook version of perfectly competitive markets. This follows from the above: as demonstrated by Cox and Harris (1985) for North America and by Smith and Venables (1988) for Europe, globalization brings enhanced efficiency and innovation in imperfectly competitive markets, in addition to the traditional gains from trade associated with elimination of tariffs and other trade barriers in competitive markets.

Specific to U.S. agrofood firms, increased globalization offers another significant benefit — the potential to expand more rapidly than the rate of growth in the domestic market. The United States has perhaps the world's most advanced food system. It provides a bountiful supply of food at the lowest cost of any country in the world, measured on the basis of share-of-income spent. Most Americans have at their disposal a tremendous variety of food from which to choose. But, as a result, the U.S. processed foods market is among the world's most highly saturated. Because the U.S. market is so advanced, export and operating opportunities in other countries can be quite attractive to U.S. firms. Indeed, for the U.S. agrofood system as a whole, capitalizing on its competitive advantages in global markets is already a success story. An overview of each of the downstream sectors reveals both important common themes and some sector-specific implications.

Food Manufacturing

For the most part, the impacts of globalization on the food manufacturing sector parallel those for the system as a whole. Firms benefit directly from increased exports of processed foods and outbound FDI and contract operations, and experience increased competitive pressures from inbound operations and processed food

imports. In addition, they may benefit from access to imports of foreign food ingredients that allow them to expand their product lines.

The case for gains from exports and from outbound FDI, licensing and other contract operations is straightforward and needs no further elaboration. Some observers, however, have suggested that these are substitute strategies, that outbound FDI displaces product exports and thus is somehow less desirable. The actual relationship between U.S. exports and outbound FDI is explored in greater detail in chapter 4.

The impacts of imports and inbound direct foreign-controlled operations require more case-by-case assessment. Some product imports are direct substitutes for domestic production and compete with domestic manufacturers. On the other hand, some imports are complementary materials useful for further processing, allowing domestic food manufacturers access to ingredients not readily available at home, thus facilitating product innovation and product-line extensions.

Overall, the impacts of inbound foreign commerce are beneficial to the competitive health of the sector, although not all firms gain. In particular, those that have fallen behind in efficiency and product innovation may view inbound commerce as more of a curse than a blessing; some undoubtedly fail under the competitive pressure. Yet some domestic firms find inbound FDI to be an important means for accessing the operating capital, product innovation, and managerial expertise needed to revive an old, tired operation and become, once again, a progressive player at home. Others, particularly those with strong firm-specific assets, find competition by foreign manufacturers a challenging inducement to fight ever more aggressively for domestic market share.

Food Distribution

The food wholesaling and retailing sectors benefit substantially from both product trade and foreign operations. Wholesaling, almost by definition, is an industry that operates on volume. This

sector benefits from both imports and exports by having more product to distribute to retail outlets at home and abroad. In addition, inbound FDI increases volume — on the supply side for wholesalers when FDI is in food manufacturing and on the output side for FDI in food retailing. Outbound FDI by food retailers potentially increases foreign demand for U.S. manufactured food, which is also likely to increase volume for domestic wholesalers willing to extend distribution to support these retailers. Outbound FDI by manufacturers probably has little direct impact on home-market wholesalers, while inbound and outbound FDI by food wholesalers have competitive impacts on the sector similar to those in food manufacturing.

As food wholesalers make investments in firm-specific assets such as brand names, just-in-time inventory management systems, and merchandising expertise, the potential to gain size advantages from outbound foreign operations becomes even more similar to those in the food manufacturing sector. Although directly competitive inbound FDI in wholesaling could squeeze out less efficient, less progressive firms, it can also be a source of new performance-enhancing management, technology, and capital.

Food retailing also benefits from increased imports of processed foods, primarily in terms of greater product variety and lower prices. Overall, an increase in processed food exports would probably be neutral for domestic food retailers. There are some gains from lower processed food costs associated with increased size and scope economies in food manufacturing, but these may be offset by the impact of increased foreign demand on processed food prices.

The impacts of inbound and outbound FDI in food manufacturing on food retailing are essentially the same as for food wholesaling. Inbound FDI in wholesaling could benefit the retailing sector by bringing with it new services and/or more competitive pricing, while outbound FDI in the wholesale sector would have little direct impact on the domestic retailers. Inbound and outbound FDI in food retailing enhance competition within the sector, with firm-specific results similar to those in wholesaling and manufacturing. Casual observation, however, suggests that there may be less in the way of

cross-country management and technology transfer in food retailing due to country-specific idiosyncracies in consumer food shopping behavior.

Food Service

Globalization impacts in the food service industry are almost exclusively issues of direct foreign operations, either FDI or franchise contract-type operations. There is little international product trade in the sector, except in selected food ingredients and other supplies. Outbound food service operations increase exports of some ingredients and supplies. However, the overall impact is probably relatively small, primarily because labor comprises much of the variable costs of food service operations and, except for some personnel engaged in firm management, is supplied in the host country. Inbound direct operations may have similar, minor impacts on imports of some supplies. More significantly, foreign direct operations in food service tend to induce foreign direct operations in food manufacturing. The normal mode of operations is for food service firms to develop strong dependency relationships with specific food manufacturers. An example is the tie between McDonald's and Keystone Foods; as the former expands its direct operations to new foreign markets, the latter follows with new outbound FDI in meat processing.

The food service sector provides one of the clearest examples of American firms advancing their firm-specific advantages through outbound foreign operations. Much of what the major food service firms export is intangible: trademarks, logos, merchandising slogans, quick service techniques, product consistency, and the like. Indeed, from a U.S. perspective, it stands as an example of commercial success in merchandising "Americana." No other segment of U.S. industry, with the possible exception of commercial aircraft, has accomplished so much in terms of selling American ideas, know-how, and products abroad and creating value from these intangible assets, some of which flows back to the United States.