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Processed Food Trade Pressured by Evolving Global Supply Chains

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The last three decades have seen tremendous growth in sales of processed food—sales now total \$3.2 trillion, or about three-fourths of the total world food sales. But, contrary to initial expectations, this phenomenon has not led to significant growth in global trade—only 6 percent of processed food sales are traded compared with 16 percent of major bulk agricultural commodities. Although consumer demand for processed foods continues to grow globally, growth in trade has generally stalled since the mid-1990s. Global trade in processed food grew rapidly during the 1970s and 1980s, as consumers in high-income countries demanded more foreign food products. Through the mid-1990s, these products accounted for a bigger share of growth in U.S. agricultural exports, with expanding exports to Japan, Canada, and Mexico. However, since the mid-1990s, growth in both global and U.S. processed food trade has slowed, and bulk agricultural commodities account for more of the recent growth in U.S. agricultural exports.

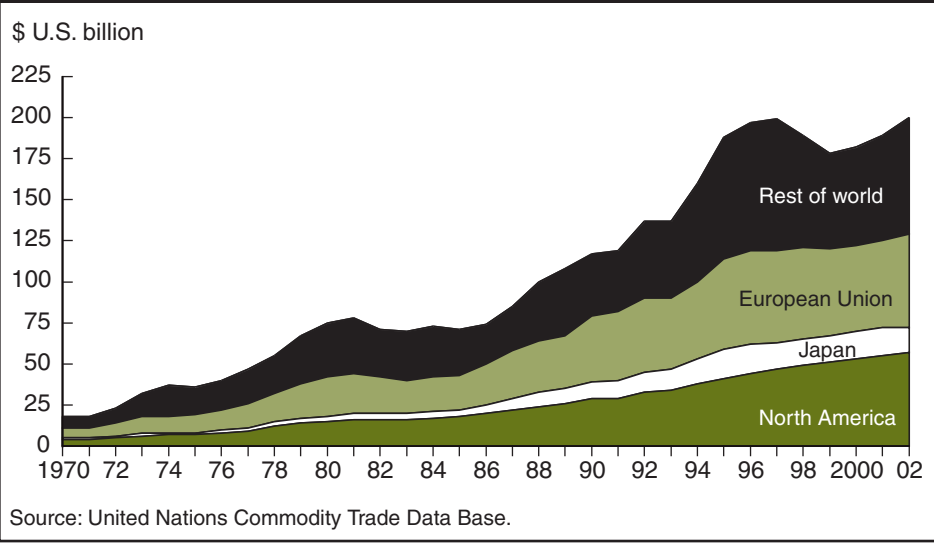


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World trade in processed food slowed in the 1990s



The slow growth in trade of processed food products has often been attributed to existing multilateral trade rules that favor trade in raw commodities at the expense of processed products. But trade policy is not the whole story—many other factors affect the choice of locations to produce and sell food products. Patterns of food trade are strongly influenced by the changing nature of competition in the global food industry—from shifting consumer preferences to the growth in multinational food retailers and the ways they manage their global supply chains. Consumer-driven changes are increasingly pushing food suppliers to meet consumer demand and preferences at a local level, even as the food industry becomes more global. Local processing allows manufacturers to strategically tailor both manufacturing and packaging to suit local tastes, preferences, and retailer needs. The result of this trend has been an acceleration of foreign direct investment (FDI), often at the expense of trade. As a case in point, U.S. food companies sell five times (\$150 billion) more through FDI

sales than through U.S. export sales (\$30 billion).

Shifting Preferences Shape Supply Chains

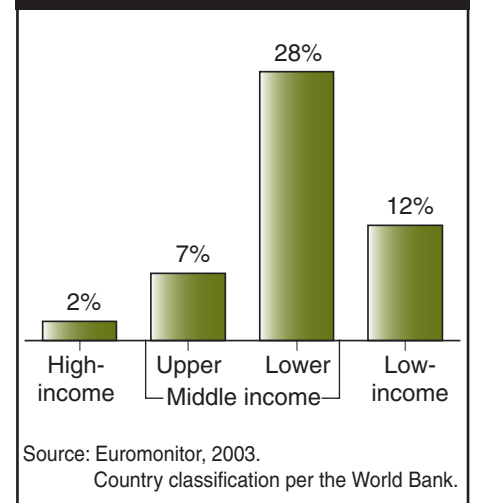
Food suppliers are increasingly tailoring their marketing strategies to the unique characteristics of consumer demands in each market that they serve, and the choice of strategy can either stimulate or discourage trade. At the broadest level, there are significant differences between developed- and developing-country markets, and suppliers have developed very different strategies in serving these two types of markets.

Market sizes, as indicated by retail sales value, are much larger for developed countries. The United States, the European Union, and Japan together account for over 60 percent of total retail processed food sales in the world. However, market growth has generally been faster among developing countries, particularly lower-middle-income countries such as China, Morocco, the Philippines, and many Eastern European countries. The transitioning Eastern European countries, such as Bulgaria,

Romania, and Ukraine, experienced double-digit growth in retail sales of many food and beverage products during the late 1990s. While sales in these markets have stabilized, Asian markets have picked up in the past few years, and processed food product sales are expected to continue to significantly increase.

Consumer preferences, shaped primarily by incomes, changing lifestyles, and evolving cultural preferences, largely determine the items available in grocery stores in different markets. In developing-country markets, higher incomes result in diet upgrades, with increased demand for meats, dairy products, and other higher value food products. These include packaged cereals, pasta, oils, and other items used in meal preparations. In the developed-country market, where consumers already consume sufficient quantities of these items, sales growth is noted for labor-saving products, such as prepared meals. Food sales in developed-country markets are also being influenced by consumer preferences for greater product variety and food products possessing specific attributes—for example, products perceived to be safer or more healthful or products produced in

Annual retail food sales grow faster in the lower income countries, 1996-2002





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ways that are more beneficial to the environment and take animal welfare and equitable labor concerns into consideration.

In developed-country markets, where the volume of food consumed increases largely with population growth, food suppliers can increase returns mainly by adding value to their products—either by increasing the production of ready-to-eat food products or producing foods with special attributes desired by consumers, such as organic foods or foods with special health properties. In contrast, in developing countries, where incomes are rising and lifestyles are rapidly changing with urbanization, retail sales growth results

largely from increased volume and, to some extent, increased sales value. As the signals from different markets are transmitted up the supply chain, food producers, processors, and traders adapt to meet the evolving retail demand in each market. The differing adaptations ultimately contribute to changes in food trade patterns by influencing the import demand for processed food products and the inputs used in their manufacture.

Demand Growth Lures FDI to Developing Countries

Recognizing the large potential in developing-country markets, food manu-

facturers are expanding their operations in those markets. But they have several options for selling their products; exporting is just one option and, in many cases, not the preferred one. Most foreign food sales are generated by investing abroad and processing in foreign markets. The choice between exports and FDI depends on the type of products sold. Products that do not undergo major changes from their basic commodity forms through processing (known as *land-based products*), such as rice, wheat flour, meats, and fruits and vegetables, are less suited for FDI because their production is limited by specific growing conditions. For these products, processing generally takes place close to the location of primary production. Processed land-based products, such as fresh or frozen meat, frozen and canned fruit and vegetables, and dry milk powder, can be exported to foreign markets.

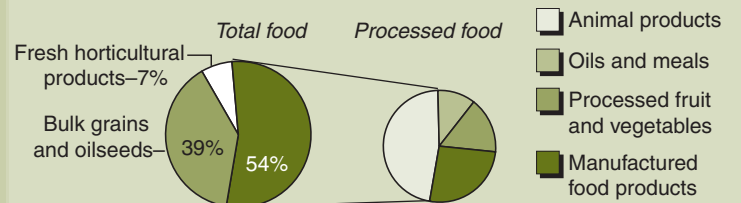
Production of manufactured foods is less location specific because technology and capital are mobile in the world food economy. Through FDI, food manufacturing can expand to another country to satisfy the demand there. Therefore, land-based products tend to be traded far more than manufactured packaged products.

Food and Agricultural Product Trade Shaped by Product Characteristics

Trade in food and agricultural products can be distinguished by the international mobility of inputs used in the production process. On the one hand, trade is generally greater among products for which production largely depends on land and other geo-climatic factors—termed for simplicity in our discussion as land-based products. On the other hand, there tends to be less trade in consumer-ready manufactured products, which can be produced almost anywhere investments in processing facilities are made.

Land-based food products include bulk agricultural commodities, such as wheat, corn, soybeans, coffee, and tea; horticultural products, such as fruit, nuts, and vegetables; semiprocessed products, such as vegetable oils, grain flours, sugar, and animal products; and some processed food products sold packaged and consumer-ready in grocery stores, such as fresh and chilled meats, flour preparations, and processed fruit and vegetables. Manufactured foods include other processed foods that use multiple inputs in their formulation and undergo significant changes from their raw forms. Examples are breakfast cereals and various bakery and confectionery goods. As can be expected, trade among processed food products varies based on their char-

U.S. processed food exports are largely land-based products



Note. Processed category includes semiprocessed food products. Manufactured food products consist of food preparations, flavorings, breakfast cereals, bakery products, pet food and prepared feeds, confectionery, soft drinks, and malt beverages. Source: Foreign Agricultural Trade of the United States, 2003, USDA/ERS.

acteristics. Land-based products, identifiable by their basic commodities, such as meats and frozen vegetables, tend to be traded more than manufactured products.

and account for over 75 percent of the total value of U.S. processed food trade (see box, "Food and Agricultural Product Trade Shaped by Product Characteristics").

The largest firms, based in Western Europe and the United States, are expanding their sales in numerous foreign markets to maintain growth, while growth in the home markets stagnate. Some firms, such as Nestlé, Kraft, and Unilever, already operate in over 140 countries. With young, growing populations in Asia and Latin America driving sales in baby foods, milk-based products, bakery products, and confectionery, it is no surprise that manufacturing firms are expanding to supply the emerging large-scale supermarket chains in these regions.

Growth in large-scale retailing in the developing countries has coincided with new investments by foreign food manufacturers. In 2002, Heinz expanded its plant capacity by 15 percent in China and opened a new plant in the Philippines. The Kellogg Company now has manufacturing plants in China, India, Japan, South Korea, and Thailand for supplying retail chains in Asia. PepsiCo, the second-largest U.S.-based food company, is continuously extending its geographical reach with its extensive international mar-

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keting arm in snack foods, currently focusing on Latin America and Asia-Pacific. The French-based Danone Group is developing a stronger presence in Africa and the Middle East through investments in fresh dairy and bakery products.

Smaller companies with a narrower focus are also looking for new markets across national boundaries. Italy's popular confectionery company, Ferrero, is expanding operations in Asia-Pacific and Eastern Europe. Confectionery manufacturer, Wrigley Jr. Company, and the Fonterra Group of New Zealand, a dairy company, have also expanded operations and currently sell their products in over 140 countries.

Whether multinationals' operations in foreign markets promote or inhibit food trade depends on the individual products sold in these markets. Depending on transportation cost savings and the ease in customizing to suit consumer needs and provide quality assurance, consumer-ready food products may be manufactured in local markets through FDI. This in turn

can generate trade growth in the raw commodities used to manufacture the final food products.

Supermarkets Change Industry Structure in Developing Countries

The last decade has witnessed an unprecedented growth in supermarkets among developing countries, particularly in Asia and Latin America where rising income levels have increased consumer demand for many higher valued processed food products. The trend has led to increasing centralization of distribution networks and also closer geographical integration. These developments can have both positive and negative impacts on trade.

Until 1990, there were only a small number of supermarkets in most Asian and Latin American countries, existing mainly in major cities and wealthier neighborhoods and primarily financed by domestic capital. By the early 2000s, supermarkets had penetrated the middle-class neighborhoods, and even the poorer urban neigh-

borhoods and rural areas, particularly in Latin America. While supermarkets accounted for 15-30 percent of the national food retail sales before 1990, they currently account for 50-70 percent of the retail sales in many Latin American countries, registering in one decade the level of growth experienced in the United States in five decades. The development of the supermarket sector in Asia is similar to that of Latin America, but 5-7 years behind in its expansionary process. However, supermarkets in Asia are growing at a faster rate compared with those in Latin America.

The expanding supermarket sector in developing countries is increasingly foreign owned. In Latin America, large multinational firms (such as Ahold, Carrefour, Wal-Mart, and others) constitute 70-80 percent of the top five supermarket chains per country. These global retail companies have also invested aggressively in the Asian markets in recent years. The success of these companies in the global retail market is largely due to their ability to offer a wider variety of products year-round and at lower prices. With their large-scale operations and supply chains reaching into many countries, these companies can efficiently handle time-sensitive and large volumes, resulting in cost savings. These savings can be passed on to consumers in the form of lower prices.

The changes in the food retail sector have resulted in a trend toward centralization of procurement, whereby large distribution centers have taken over the distribution functions of myriads of smaller centers and middlemen. A Carrefour distribution center in São Paulo may serve 50 million consumers in three different States, and an Ahold wholesaler in Costa Rica may serve the entire Central American food retail market for Ahold. The logistics sector has also improved the interface between suppliers and retail outlets.

Supermarkets' share of retail sales is growing in many countries

Country	Past	2001
Percent		
United States	5-10 (in 1930)	80 (in 2000)
Latin America		
Argentina	17 (in 1985)	57
Brazil	30 (in 1990)	75
Chile	NA	50
Guatemala	15 (in 1994)	35
Mexico	NA	45
Asia		
China (urban)	30 (in 1999)	48
Indonesia	20 (in 1999)	25
Korea	61 (in 1999)	65
Malaysia	27 (in 1999)	31
Thailand	35 (in 1999)	43

NA = Not available.

Sources: T. Reardon and J.A. Berdegue, "The Rapid Rise of Supermarkets in Latin America: Challenges and Opportunities for Development," *Development Policy Review*, Vol. 20, No. 4, September 2002, pp. 317-334. D. Hu, T. Reardon, S. Rozelle, P. Timmer and H. Wang, "The Emergence of Supermarkets with Chinese Characteristics: Challenges and Opportunities for China's Agricultural Development," *Development Policy Review*, Vol. 22, No. 5, September 2004, pp. 557-586.

The presence of multinational retailers is likely to lead to an overall increase rather than decrease in food trade. The quest for year-round supply of fresh products has encouraged joint venture partnerships and strategic alliances among firms in the northern and the southern hemispheres, increasing trade in these products. Similarly, alliances with retail outlets can open export opportunities for both small and large producers and manufacturers when the alliance is with a large multinational retail chain. However, the presence of large multinational retailers may also encourage food manufacturers to expand their manufacturing units into the region by assuring steady markets. In such cases, the presence of multinational retailers may encourage more local processing from domestically produced raw products, thus discouraging trade.

Private Brands Ensure Quality but Restrain Trade

In response to changing consumer demands, retailers have adopted more proactive marketing strategies, where they try to achieve customer loyalty not only by improvements in service, location, and store layout, but also by more control over the overall value creation process in the food chain. One strategy is the adoption of private labels, where retailers seek dual objectives, lowering retail price and enhancing product value. The use of private labels, especially when the purpose is to guarantee quality, is often accompanied by strict control of suppliers of raw material and can, as a result, inhibit trade.

In the United States and many other countries, private retail brands have generally been cheaper substitutes of similar or lower quality compared with major manufacturer brands. This use of private retailer brands is currently rising in developing countries due to the ongoing replacement of the traditional informal food market sector by a more formal sector characterized by the presence and expansion of supermarket chains. For example, the retail chain Food World leads in private retail brand sales in India, selling store brand products, such as jams and honey, at lower prices than major manufacturer brand products. However, in the affluent segments of West European,

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Japanese, and U.S. markets, where consumers are willing to pay extra for quality-assured food products, private retailer brands are increasingly designed to provide products with specific attributes sought by consumers.

Retailers may seek to add value and provide higher quality products when the existing products in the market do not meet consumer demands for specific product attributes. For example, the Danish retailer, Dansk Supermarket, operates a series of different private brands for dairy products as higher quality alternatives to major manufacturer brands. The Dansk brands are advertised as being of a superior quality due to the use of local dairy output produced under traditional practices with due consideration given to food safety concerns. Similarly, other retailers across Europe have introduced retailer brands for other products catering to specific consumer demands regarding safety, environment, animal welfare, and other issues.

In implementing a strategy of using private brands, retailers must ensure that their brands meet the desired quality

standards. This requires careful selection of suppliers and the type of product for branding. A study of 751 retail purchasers in 16 European countries suggests that, in addition to traditional factors like price, quality, and the ability to supply needed volumes, retailers select suppliers based on product traceback ability and willingness to engage in long-term relationships with the retailer. As the branding function places more responsibility for prod-

uct design, quality control, and product liability on the retailer, traceability and closer cooperation with manufacturers are necessary.

Increased use of private retail brands can have negative impacts on food trade. For example, the European consumers' preoccupation with food safety issues has promoted retail brands, such as Dansk, which use local inputs. If the practice of private labels using local sourcing were to be expanded to wealthier segments in other developed-country markets, the use of private retail brands could potentially reduce the role of imports in the branded product supply chain. Moreover, the certification of quality assurance requires adhering to national and retail standards, which, if more stringent than those adopted in other countries, can potentially restrict imports.

Trade Rules May Deter Some Processed-Product Trade

Ultimately, however, suppliers' decisions whether to locally source or import products is also influenced by the rules governing trade in these products. One of the main accomplishments of the 1994 World Trade Organization (WTO) Agreement on Agriculture was to subject agricultural trade to stronger international

Tariff escalation in cocoa and products

Processing chain	Average tariffs				
	Australia	Canada	EU	Japan	U.S.
<i>Percent</i>					
Cocoa					
Cocoa beans	1	0	0	0	0
Cocoa paste	0	0	10	8	0
Cocoa butter	0	0	8	0	0
Cocoa powder	9	6	27	19	16
Chocolate and products	17	57	18	21	15

Source: Agricultural Market Access Database (AMAD) and International Bilateral Agricultural Trade Database (IBAT).

disciplines, leading to a general reduction in agricultural tariffs. However, tariffs on agricultural products remain relatively high and vary considerably across both countries and products. Many countries impose low or no duty on many products, but maintain very high tariffs, often in excess of 100 percent, on import-sensitive products.

Barriers to trade in processed products are often more restrictive than on raw commodities. Tariffs on average are greater on processed products than on their less-processed forms, a phenomenon known as *tariff escalation*. Analysis of tariff data from 22 countries indicate that the average tariffs on fully processed products exceed those on primary products, with differentials ranging from 2 percent for the United States to over 40 percent for Turkey. Over the entire group, the average tariffs range from 30 percent on fully processed goods, dropping to 20 percent on horticultural products, 18 percent on semiprocessed items, to 17 percent on primary products. As an example, most countries have no tariff on raw cocoa beans, with the exception of Australia, which has an ad valorem tariff equivalent of 1 percent. However, as one moves up the processing chain, ad valorem tariff equivalents tend to increase, with tariffs on chocolates and other cocoa products ranging between 15 and 57 percent. Similar examples of tariff escalations exist among many other commodity sectors, including coffee and oilseeds.

In addition to tariffs, countries have numerous other instruments at their disposal to regulate the flow of imports, such as the various trade remedy measures. For example, imports can be reduced for limited periods through *antidumping* and *countervailing* duties and *safeguard* measures that allow temporary actions when imports surge. Available data show that



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WTO member use of trade remedy measures on agricultural products has risen, especially on processed food products. Of the total 76 antidumping and countervailing duties present worldwide on agricultural products in 2002, 43 were on processed food products and only one was on a basic agricultural commodity, the remaining consisting of semiprocessed and horticultural products. Similarly, safeguard measures have also been used predominantly on processed food products.

The presence of tariff escalation and increased use of trade remedy measures on processed foods suggest that countries are seeking to capture value-added locally and implement trade regulations that encourage imports of relatively less-processed agricultural commodities. While this has undoubtedly contributed to slower growth in trade of processed food products, trade flows are also shaped to a growing extent by the changing dimensions of the global food industry. More integrated supply

chains that locally customize products to meet regional consumer preferences may encourage trade of less-processed agricultural commodities over trade in processed food products. Therefore, even as the food industry becomes more global with the same multinational retailers and manufacturers operating across the world, food demand is being increasingly satisfied at the local level where food suppliers are better able to meet specific demands of local consumers. \mathbb{W}

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