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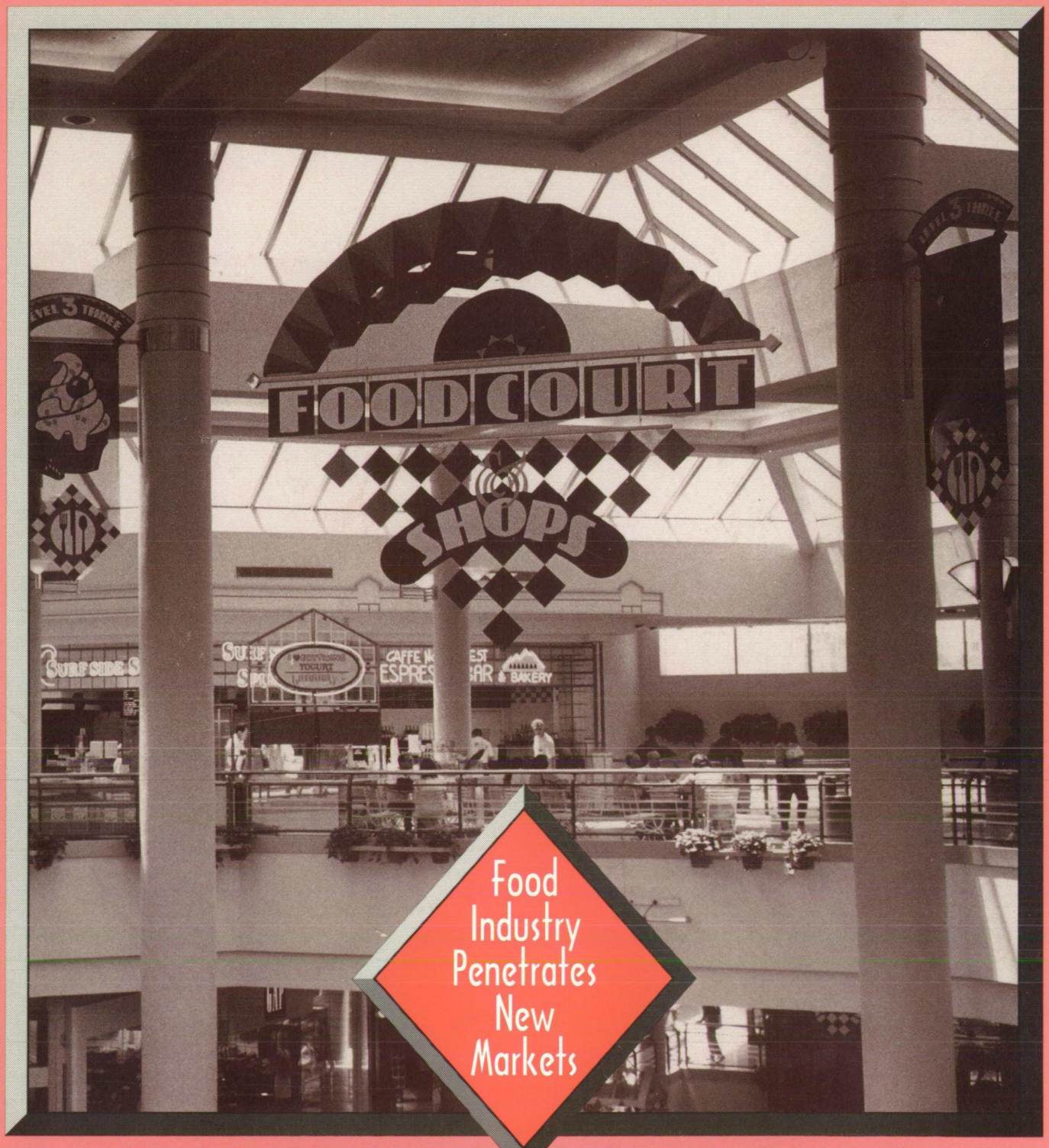

Food Industry Penetrates New Markets

...Upfront

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Nontraditional Retailers Challenge the Supermarket Industry

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Recent growth in sales of nontraditional retail outlets—membership warehouse clubs, mass merchandisers, and deep-discount drugstores—has caused traditional grocery food stores to modify marketing strategies and appeal to the more price-conscious consumer.

While nontraditional outlets do not generally offer the broad array of produce, bakery products, fresh meats and dairy products, and frozen foods found in traditional foodstores, they do market large amounts of specific categories of products—such as dry groceries, health and beauty products, and general merchandise.

According to a recent Food Marketing Institute (FMI) report on alternative store formats, grocery sales of nontraditional retail outlets rose to $33.3 billion, or 6.2 percent of all grocery sales in 1991. The growth has primarily occurred within the last 5 years, but a rapid increase is expected through the end of the decade.

Because these outlets are more specialized, have lower operating costs, and subsequently offer lower prices to consumers, they are taking business away from some nearby supermarkets. Competition between traditional and nontraditional food operators, aided further by the recent recession, continues to increase as the nontraditionals expand into other traditional grocery departments, such as fresh produce and fresh meat.

In 1980, there were only eight wholesale clubs in the entire food retailing industry. In early 1993, there were 779, with an estimated combined annual sales of $34.2 billion in 1992. Mass merchandisers, such as Kmart and Wal-Mart, and deep-discount drugstores, such as Phar-Mor, Drug Emporium, and F&M, also sell increasing amounts of groceries, such as snacks, beverages, and canned and other packaged food products. Additionally, the new Kmart and Wal-Mart su-

Although still the central force in today's grocery market, supermarkets have had to adjust to keen competition in food retailing. Their services, bulk food sales, and "warehouse" pricing have helped.

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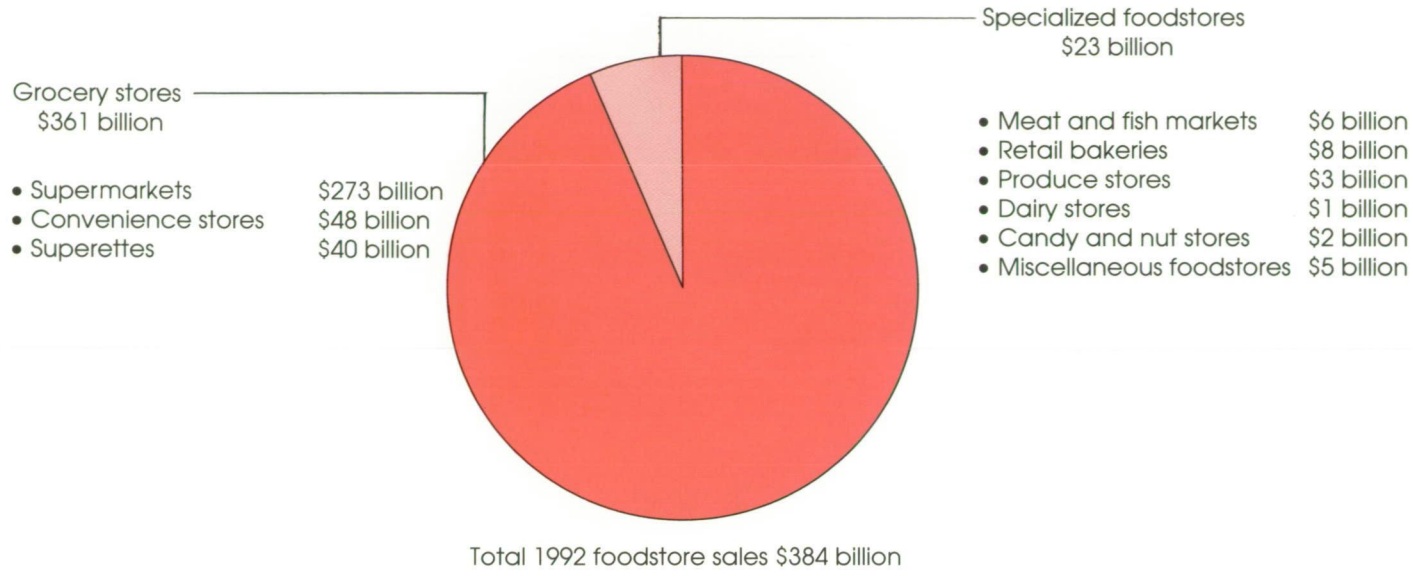
Figure 1
Supermarkets Accounted for Over 70 Percent of Foodstore Sales in 1992



Source: *Food Marketing Review, 1992*, forthcoming by USDA's Economic Research Service.

percenters include full-line grocery stores, making competition in food retailing keener than ever.

Traditional Supermarkets Still Dominate

The traditional food retailing industry comprises a range of foodstores. These retailers include broad-line grocery stores—supermarkets, convenience stores, and superettes—and specialty foodstores, such as meat and seafood markets, produce stands, delicatessens, and bakeries. Total foodstore sales for 1992 were $384 billion. Grocery store sales at $361 billion accounted for 94 percent of this total, while specialty foodstores had a 6-percent share (fig. 1).

The supermarket, the central force in today's grocery market, is primarily a self-service grocery store with a full range of departments and annual sales of at least $3.3 million in 1992. Additionally, 50 percent or more of supermarket sales come from food. Supermarkets accounted for over 70 percent of total foodstore sales and 76 percent of grocery store sales in 1992.

Supermarket formats include conventional supermarkets, superstores, combination food/drug stores, limited assortment stores, warehouse stores, and hypermarkets (see box). Each format is distinguished by size, percentage of food versus nonfood items offered, and variety of services.

The conventional supermarket was once the most common format. In 1980, 85 percent of all supermarkets fit the conventional format, accounting for 73.1 percent of grocery store sales (table 1). By 1991, only 49 percent of supermarkets were conventional, accounting

Table 1
Conventional Supermarkets' Share of Sales Has Declined

Supermarket format	Share of supermarkets		Share of supermarket sales	
	1980	1991	1980	1991
	Percent			
Conventional	85.0	49.5	73.1	30.4
Superstore	8.9	24.9	17.7	33.9
Combination food and drug	.9	8.9	4.0	17.1
Warehouse/limited assortment	4.7	14.6	4.2	13.1
Superwarehouse	.5	2.0	1.0	5.1
Hypermarket	NA	.1	NA	.3

Note: Data may not sum to 100 due to rounding. NA= Not applicable.
Source: *Food Marketing Review, 1992*, forthcoming by USDA's Economic Research Service.

Coming to 'Terms' with Traditional Supermarket Formats

Combination food and drug store
- More product variety than in conventional supermarkets
- Nonfood items capture 25-35 percent of sales
- Nonprescription drugs and general merchandise
- Prescription drugs
- Size typically ranges from 35,000 to 45,000 square feet

Conventional
- Highest percent of food versus nonfood items
- Size typically ranges from 3,000 to 30,000 square feet
- All major store departments represented

Hypermarket
- 100,000 square feet or more in size
- Up to 40 percent of sales in general merchandise items
- Patterned after the European hypermarket concept

Limited assortment store
- Limited number of product brands
- Most popular sizes stocked
- Less than 10,000 square feet
- Little or no raw, perishable products

Superette
- Annual sales below $3.3 million in 1992
- Wide variety of food/nonfood
- Primarily self-service

Superstore
- Larger deli, bakery, and specialty product departments
- Some self-serve bulk foods
- Average size 35,000 square feet
- General merchandise

Warehouse store
- Strong price appeal
- Size ranges from 12,000 to 35,000 square feet (super warehouse stores range from 50,000 to 140,000 square feet)
- Primarily food and some health and beauty aids, but low emphasis on general merchandise

for 30.4 percent of supermarket sales.

A conventional supermarket is basically self-service, and foods and beverages dominate the stock. It sells meat, produce, bakery, and other food and grocery related products as well as nonfood items such as soaps, detergents, and paper products. Items are generally prepackaged or individually packed and displayed throughout the store. Store sizes typically range from 3,000 to 30,000 square feet and carry from 9,000 to 11,000 items. The selection of nonfood products in conventional stores is limited.

The other supermarket formats are larger or offer more variety, specialty foods, prescription and nonprescription drugs, or other features or services (see box). These other formats gained in sales shares and numbers over the last decade. Between 1980 and 1991, superstores, combination food/drug stores, superwarehouses, and warehouse/limited assortment stores captured 42.3 percent of total supermarket sales (table 1). The number of these formats in operation more than doubled during this same period. For example, superstores more than doubled in numbers, accounting for 24.9 percent of all supermarkets in 1991 and 33.9 percent of grocery sales.

Societal Changes Spur Retailing Changes

Changes in the work force, lifestyles, and economic factors have contributed to slow market growth for the traditional food retailing industry and to the increase in larger, more diversified stores over the last two decades. The increase in multiple-career households meant more disposable income, coupled with the demand for more convenience, quality, and time savings.

Retailers seeking new opportunities for greater sales to price- conscious consumers as well as service-oriented consumers responded with new supermarket formats and services to challenge the conventional supermarkets.

Many supermarkets pursued the "one-stop shopping" concept by providing expanded service departments (meat, fish, and deli), and expanded nonfood departments and services, such as pharmacies, video rentals, nonprescription/prescription drugs, and general merchandise, such as clothing.

Competition was also sharpened by the recent recession and slow-paced recovery. Per capita disposable income, adjusted for inflation, rose 1.1 percent in 1992 from a previous drop of 1.3 percent in 1991. The 1992 food price increase was the lowest since that in 1967.

Nontraditional Retail Outlets Move Into Territory

Added to these economic pressures was the growth of lower cost, price-oriented nontraditional outlets. Generally known to stock a high percentage of general merchandise, these outlets have expanded their offering of groceries and related products.

These formats have grown rapidly and, for the most part, profitably, over the last several years. Besides other benefits offered to consumers, they are noted most for offering low prices.

Membership Warehouse Clubs

Considered one of the fastest growing segments of retailing, according to *Progressive Grocer* magazine, the first membership warehouse club store opened in San Diego, California, in 1976. The Price Company opened Price Club, designed to appeal to a select group of individuals and small businesses looking to save money.

Warehouse club stores were fully computerized, no-frills operations offering a limited selection of first quality, name- brand merchandise. Grocery products were mainly dry groceries and paper products. Today, club stores have expanded their offerings to include some services and perishable foods.

Warehouse clubs stock fewer items than do traditional supermarkets, but they concentrate on high-value, branded items displayed on pallets and packaged in large, multipack sizes. They also offer fewer services than do supermarkets: there is no bagging, and operation hours are shorter.

Warehouse clubs also incur lower expenses for advertising, administration, and shipping, resulting in lower overall operating expenses compared with those of supermarkets. The clubs pass on these savings to shoppers through lower prices. An FMI study concluded that prices in club stores for grocery-related items averaged 26 percent lower than in traditional grocery stores.

More than 21 million people have memberships in U.S. warehouse clubs. Club sales totaled $34.2 billion in 1992. According to FMI, sales growth of warehouse clubs has averaged 31 percent over the last 5 years. Four firms accounted for over 90 percent of total sales (table 2).

Target areas for growth are those with populations of 400,000 or more.

Deep-Discount Drugstores

Deep-discount drugstores are known for their low-price image. They offer a broad selection of products—mainly health and beauty care products and general merchandise, such as small household appliances; some food items, such as candy and other snacks; and a limited assortment of popular, shelf-stable, high-volume foods. Located mainly along the east coast and in the Midwest in high-traffic shopping centers, these stores vary in business style. Store sizes range from 25,000 to 65,000 square feet. They generally stock a

Table 2
Membership Wholesale Clubs Have Become a Growing Retail Force

Club	1992 sales	Share of sales	Units		
			1992	1993	1994*
	Million dollars	*Percent*	*Number*		
Sam's Wholesale Club	12,339	36.1	208	256	305
The Price Club	7,480	21.9	88	94	102
Costco Wholesale Club	6,620	19.4	91	100	110
Pace Membership Warehouse Club	4,358	12.8	87	115	137
BJ's Wholesale Club	1,760	5.2	29	39	54
Smart & Final	752*	2.2	116	125	139
Mega Warehouse Foods	293	.9	14	22	31
Warehouse Club, Inc.	241	.7	10	10	10
Wholesale Depot	200*	.6	4	8	15
Club Aurrera[1]	60*	.2	2	3	8
Price Club of Mexico	40*	.1	0	1	3
H-E-B Bodega	10*	**	2	2	1
Source Club	1*	**	0	3	7
Price Rite	4*	**	0	1	1
Total	34,167	100	651	779	923

Note: Percentages may not total 100 due to rounding. *Estimate. **Less than 0.1 percent.
[1]A joint venture between Wal-Mart and Mexico's CIFRA, N.A. Source: *Food Institute Report*, March 8, 1993.

Table 3
Warehouse Clubs Show Low Operating Expenses and High Returns

Financial returns[1]	Traditional grocery stores	Membership warehouse clubs	Deep-discount drugstores[2]
		Percent	
Return on invested capital	21.2	39.0	22.6
Earnings before interest and taxes	3.5	3.5	4.0
Gross margin	25.3	11.0[3]	20.0
Operating expense	21.8	7.5	16.0
Ratio of working capital to sales	1.7	-.7	13.2
Ratio of invested capital to sales	16.5	9.0	17.7
Ratio of fixed assets to sales	14.8	9.7	4.5

[1]1991, estimated. [2]Figures represent leading discounters. [3]Includes 2-percent revenue from membership fees. Source: Food Marketing Institute, 1992.

Table 4
Wal-Mart Led the Way in Sales by Mass Merchandisers

Company	1991 sales
	Million dollars
Wal-Mart[1]	31,667
Kmart[2]	24,749
Target	9,041
Ames	2,819
Caldor	1,868

[1]Discount store sales only. [2]U.S. stores only. Source: "Warehouse Clubs Lead Discount Industry Growth," *Food Institute Report*, July 25, 1992.

variety of brands in limited sizes and negotiate with manufacturers to obtain low costs or bargain for close-out items to keep costs low.

Like warehouse clubs, deep-discount drugstores have lower labor and fixtures' costs than do supermarkets. Gross margins (retailer markup over cost as a percentage of total sales) are higher than those for membership warehouse clubs, but less than those of grocery stores (table 3).

The three largest deep-discount drugstore firms are Phar-Mor, Drug Emporium, and F&M.

Mass Merchants

Mass merchandise stores offer an array of general brand-name merchandise and some private (or store) label goods, grocery related products, and snacks and dry groceries. New stores often exceed 100,000 square feet and stock between 70,000 and 80,000 products. They are largely located in small towns and large suburbs. Mass merchandise stores emphasize "every day low prices," and are increasing the number and variety of grocery products offered.

Wal-Mart and Kmart are the largest mass merchandisers. Wal-Mart's 1992 sales reached $43.9 billion, up 38 percent from 1991. Kmart followed, with $25.3 billion in sales (table 4). Wal-Mart and Kmart now operate supercenters—merchandise stores averaging 160,000 square feet with full-line supermarkets. Wal-Mart operates 60 supercenters across the Southeastern and Southcentral States (Arkansas, Texas, Oklahoma, Mississippi, Kentucky, Tennessee, Alabama, and Missouri). Kmart operates four supercenters in Ohio, North Carolina, and Mississippi.

Some of the top mass merchandisers generate as much as 25 to 30 percent of their sales from grocery-related products. They carry so-called "impulse" food items, such as snack foods and other shelf-stable foods, which require little labor and sell quickly.

Traditional Supermarkets Respond

Traditional supermarkets are responding in several ways to consumers who look to warehouse clubs and other nontraditional retail outlets for lower prices.

Meijer, a privately held combination food/drug store chain based in Grand Rapids, Michigan, has created a membership warehouse division called SourceClub. It opened in 1992, and marked the first time a grocery chain has entered the warehouse club market. Big V supermarket of Florida, New York, also opened Price Rite as its new club division in 1992.

Other supermarkets have expanded their product lines to include multipacks and bulk items. Giant Foods of Landover, Maryland, has a "Super Deal" section featuring bulk and multipacked, brand- name and private-label products at prices comparable with (and sometimes lower than) membership club prices. An Albertson's store operator in Bellevue, Washington, uses a similar approach to compete with a nearby Costco warehouse club competitor by offering economy-packed boxes of fresh produce. One small Lucky Stores operator in West Los Angeles, California, promotes "Key Buy" specials which offer lower discount prices than its area com-

petitors for specific national brands. Another larger, more modern Lucky store in the same city includes a "Max Pak" section with bulk items displayed on pallets. Promotional advertising for this section suggests "saving the convenient way."

Supermarkets are promoting their advantages over warehouse clubs as a way to respond to competition. Longer hours of operation, convenient locations, no membership fees, and more variety are some of the advantages offered. Chester's Market, an independent operator in East Windsor, Connecticut, promotes its reputation for providing "friendly, knowledgeable service" to its customers, according to *Progressive Grocer* magazine. Chester's emphasizes its catering, birthday cakes made to order, special store coupons, and courteous telephone service.

Competition To Stiffen

Many food retailers are seeking to lower costs in order to compete with the nontraditional formats. Supermarket retailers may ultimately be forced to lower margins and prices in a number of categories, including personal care products, nonprescription drugs, paper products, and laundry and household supplies.

Nontraditional retail outlets will continue moving into supermarkets' territory with more new stores and more food items. For example, many warehouse clubs have added fresh bakery, meat, poultry, fish, and produce, as well as more nonfood services like film developing, car-buying programs, optical departments, and travel services. However, as these more labor-intensive services are added, costs and gross margins will increase. At that point, clubs will have to find new ways to keep cost advantages in these departments.

"One thing is certain: nontraditional retail outlets are having a significant impact on the traditional supermarket industry—and the industry is listening."

Increased competition among warehouse clubs in the same market could result in new marketing strategies to attract new customers. Future growth will be concentrated in small markets where there is less competition. More clubs are expected to expand operations outside the United States. For example, Price Club and Costco already have Canadian units, and Wal-Mart and Price Club have joint ventures with Mexican firms and plans for operations in other countries. Industry sources forecast growth in warehouse clubs to 950 stores by the year 2001.

Among mass merchandisers, Wal-Mart plans to open 30 new supercenters in 1993. Kmart also plans to open 15 similar stores this year, called Super Kmart Centers, with plans for another 70-80 supercenters to open in 1994. Kmart also is expanding the grocery department in all of its 2,300 stores and will offer a mix of branded and private-label nonperishable products. This is part of a $2.5-billion chain-wide refurbishing program planned for completion by 1995.

In the case of deep-discount drugstores, some industry watchers speculate that growth may slow in the future. Drug Emporium opened 39 stores between 1990 and 1991, compared with only 6 new stores as of August 1992. It also posted a $4.7-million loss for the fiscal year ending February 1992. Phar-Mor filed Chapter 11 bankruptcy in August under allegations of mismanagement and closed 55 stores by the end of 1992, with plans to close another 31 this year.

Despite the current problems of some of the larger deep discounters, the prospects of market saturation, and other factors of competition, the future of the nontraditional retail outlet is bright. One thing is certain—nontraditional retail outlets are having a significant impact on the traditional supermarket industry, and the industry is listening.

References

Alternative Store Formats: Competing in the Nineties, Washington, DC: Food Marketing Institute, 1992.

"Close-up: Clubs," *Progressive Grocer,* May 1992.

Food Institute Report, Fair Lawn, NJ: American Institute of Food Distribution, Inc., selected issues.

Food Marketing Review, 1991, AER-657. U.S. Dept. Agr., Econ. Res. Serv., March 1992.

Price, Charlene C., and Doris J. Newton. *U.S. Supermarkets: Characteristics and Services,* AIB-502. U.S. Dept. Agr., Econ. Res. Serv., Nov. 1986.

Supermarket News. Capital Cities Media, Inc., selected issues, Jan.-Aug. 1992.

Fast Food Chains Penetrate New Markets

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The sluggish economy has spurred stiff competition among fast food operators—pushing for higher sales with price wars, "value meal" discounts, coupon promotions, and expanded menus. Many are making inroads to new markets with smaller mobile units and supermarket and school outlets. And, fast food companies are continuing to expand into foreign countries.

From 1954 to 1992, the share of food dollars spent on foodservice increased from 25 percent to 46 percent (fig. 1). These away-from-home meals and snacks accounted for 22 percent of all food consumed in 1954 and 33 percent by 1992. This occurred despite the fact that prices for food prepared outside the home rose 37 percent more than prices of food bought in grocery stores.

Rising incomes and changing lifestyles are primary reasons for the increase in spending. Multiple-income households, more women working outside the home, and the desire for quality, convenience, and service provide incentive for eating out.

Most of the growth in away-from-home eating has been in the fast food sector. Fast food's share of away-from-home food spending rose from 8 percent in 1948 to 35 percent in 1992. Fast food sales rose 1.8 percent in 1991 to $78.1 billion and another 9.1 percent in 1992 to $85.2 billion.

Fast food outlets are establishments in which food is ordered and picked up from a counter. Most, but not all, fast food establishments have eating facilities located elsewhere inside. Fast food outlets offer more limited menus than generally available in table-service restaurants.

Franchising has become a popular vehicle for the fast food sector's growth, because the parent firm expands operations with limited capital investment. Most franchises closely resemble large corporate chains—with trademarks, uniform identification symbols and storefronts, and standard products and prices.

Fast food's share of the away-from-home food dollar had soared from 8 percent in 1948 to 35 percent by 1992. New points of distribution offer even more expansion opportunities.

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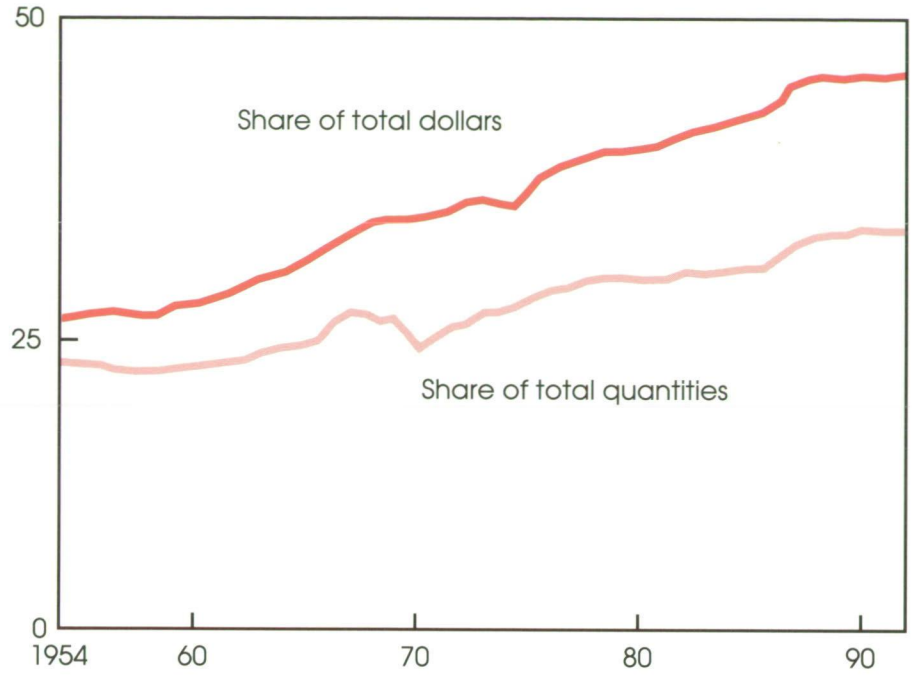
Figure 1
Foodservice Captures an Increasing Share of the Food Dollar



Source: Manchester 1991 and updates.

Off-Premise Traffic Growing...

In addition to providing dining areas, fast food places also offer services for off-premise consumption, such as drive-thru's, carryouts, or delivery.

According to data collected by the NPD Group (an industry research firm), with continued demand for convenience, growth in off-premise traffic (visits or phone calls) has outpaced growth in on-premise traffic. In 1990, 46 percent of restaurant traffic was off-premise, up from 44 percent in 1987. At the same time, on-premise traffic declined from 56 to 54 percent.

Carryout, the dominant form of off-premise sales, had been losing sales to drive-thru's and delivery, but seems to be on the upswing. Carryout sales accounted for the largest traffic growth in 1990, increasing 4 percent from 1987 levels, followed by 3 percent for drive-thru's. Deliveries posted no growth between 1987 and 1990.

...As Are Alternative Outlets

Flat sales per unit, rising real estate costs, and near saturation in many markets are driving fast food chains to search for new or alternative points of distribution.

Mobile Units

Many fast food chains are turning to mobile and downsized units to increase sales and market exposure. Sometimes called carts or kiosks, these units are smaller versions that can be placed where a full-size eating place cannot.

Mobile lunch coaches have been around for years, but now the concept has caught on with fast food chains. Some units move from outdoor concerts and zoos on the weekends to high schools and office buildings during the week. These units are relatively inexpensive, ranging from $30,000 for a Taco Bell cart to $200,000 for a KFC unit. In contrast, a typical fast food restaurant requires a $1-million investment.

Pizza Hut, considered the pioneer in mobile units, operates about 250 kiosks. Taco Bell has about 25 mobile units. Other fast food chains and snack food merchandisers, including KFC, TCBY, and Dairy Queen, also use mobile units as the route to rapid growth.

Supermarkets

Supermarkets also offer a market for fast food firms, which bring a strong name-brand visibility into the stores. Pizza Hut has negotiated to put 75 kiosk-style outlets in supermarkets operated by ABCO Foods in Phoenix, Arizona. The kiosks will feature a limited menu and will be located in the deli-bakery sections of the supermarkets.

Fast food chains serving Mexican-style foods opened units in supermarkets in 1992. For example, Chi-Chi's entered a Price Chopper supermarket in Kansas City, Missouri.

Smitty's Super Value, a 25-store supermarket chain in Phoenix, has entered into agreement with Morrison's Hospitality Group to take over Smitty's foodservice operation with kiosks from Pizza Hut, Taco Bell, Cinnabon, and Subway. Morrison's will lease 5,000-8,000 square feet of space per store.

Schools

Schools are another market targeted by fast food chains—especially Pizza Hut and Taco Bell. Pizza Hut already operates in many school systems. Palm Beach County, Florida, schools began offering Pizza Hut, Taco Bell, Subway, and TCBY products 3 years ago.

Arapahoe High School in Littleton, Colorado, turned over its entire foodservice operation to Taco Bell, which rents space in the school's kitchen. Schools in Edina, Minnesota, offer fast food by alternating Taco Bell and Pizza Hut

Supermarket Foodservice

Responding to consumers' desire for convenience, supermarkets are expanding their offerings of fully prepared foods.

A degree of foodservice has always been available in supermarket delicatessens, with a variety of cold cuts and cheeses. But today, customers can purchase anything from hot fried chicken to a slice of fresh cooked pizza—and often sit in the store and eat it.

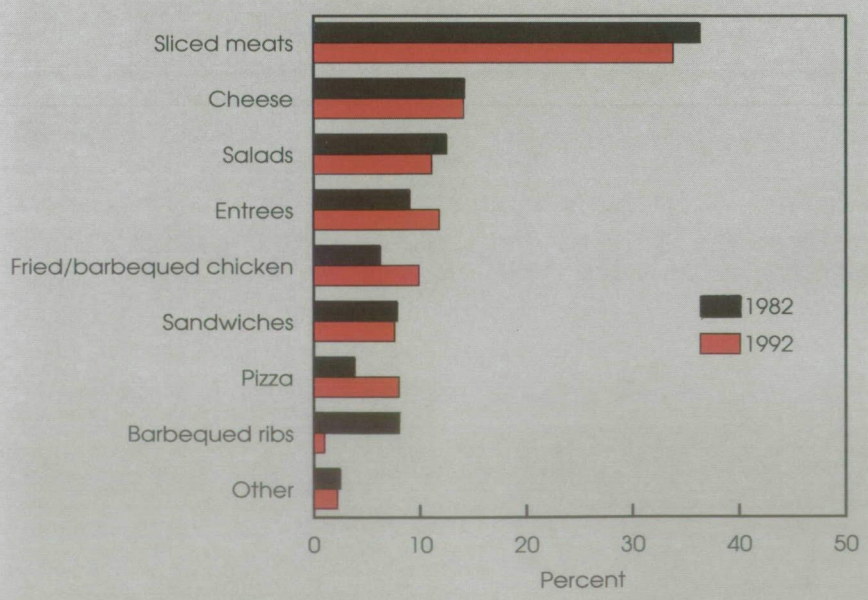
Such expansion is reflected in sales. In 1992, sales by supermarket delis reached a new high of $16.5 billion—a substantial increase of 12.3 percent over the $14.7 billion in 1991. The number of service deli units also increased to 22,913, up 4.2 percent over 1991.

The deli gained slightly in its share of store sales between 1980 and 1992. Deli sales now account for 4.9 percent of total store sales and contribute an average of 18.2 percent of total store profits.

Sliced meats still dominate deli sales, but prepared foods have continued to make inroads. While sliced meats' share declined from 36.3 to 33.8 percent, sales of hot and cold entrees increased and will probably continue to gain. Entrees grew to 11.8 percent of deli sales in 1992 from 9 percent in 1982. Pizza increased from 3.8 percent of deli sales in 1982 to 8 percent in 1992. Fried and barbecued chicken rose from 6.2 percent of deli sales in 1982 to 9.9 percent in 1992.

Soup and salad bars have become commonplace—now in about half the Nation's supermarkets. Sections serving hot pizza are offered in 48 percent of supermarkets, fresh pasta sections in 43 percent, yogurt machines in 15 percent, and sushi bars in 7 percent.

Figure 2
Sliced Meats Account for Over a Third of Deli Sales, But Prepared Items Gaining



Source: *Supermarket Business*, selected issues.

days with days of regular school lunch menus. Sales reportedly jump 55 percent districtwide on the days that fast food is offered.

Colleges and universities also offer fast food. Taco Bell has outlets on 17 college campuses, and Pizza Hut has kiosks on about 100 campuses. As of March 1993, Burger King had 25 campus outlets. Other fast food chains on campus include Subway, Carl's Jr., and Hardees.

Arrangements to have national fast food firms operate on campuses are made with the colleges or through their foodservice contractors, such as Marriott, ARS Services, or Morrison's. ARA Services has opened its first branded fast food outlet, featuring Baskin Robbins Ice Cream, at Loyola University in Chicago. ARA also has agreements at other colleges to serve Taco Bell, Dunkin Donuts, KFC, and Pizza Hut products.

Most units on college campuses are kiosks. Chains operating full-scale units have been less numerous. Some campuses are converting cafeterias into food courts, with lease slots available to national fast food chains.

Sales reportedly explode when national brands are sold on campus. For example, the University of South Carolina in Columbia sells over 1,000 doughnuts a day at its campus Dunkin Donuts, 10 times above previous sales of its own doughnuts. After installing two Pizza Huts on campus, Central Missouri State University quadrupled its former pizza sales to 2,000 pies a day.

Healthcare

McDonald's and Morrison's have teamed up to pursue joint contracts for foodservice operations in healthcare facilities. Their agreement allows Morrison's to operate patient feeding and cafeteria services, while McDonald's runs a separate, public facility in a nursing home or hospital.

The Marriott Corporation has opened Dunkin Donuts, TCBY, and Domino's Pizza outlets in hospitals where it has foodservice contracts.

Foreign Markets Expand

Growth overseas has produced marketing opportunities for fast food firms. In 1971, only 980 restaurant units operated overseas. By 1991, there were over 13,000 units. Of the top 20 U.S. fast food chains operating outside the United States, KFC takes the lead with 40 percent of its 8,480 units abroad (table 1). Baskin Robbins has 31 percent, followed by McDonald's 29 percent, and Dunkin Donuts' 22 percent.

Sales by fast food chains in international markets for the most part have fared better than domestic sales in recent years (table 2). In 1991, McDonald's, the largest U.S. hamburger chain, had only a 3-percent growth in domestic sales, compared with 14 percent in international markets. In 1991, only 3 of the top restaurant chains reported a domestic growth rate higher than growth in the international market. (Subway reported an annual growth rate of 24 percent in domestic sales, the highest of the U.S. fast food chains that have foreign sales.)

Future Ripe for Growth

Foreign countries—particularly in Europe—offer many expansion opportunities for U.S. fast food chains since chain penetration is low. *Restaurant Business*, a trade magazine, estimates that U.S. chains could command a 20-percent market share of Europe's foodservice establishments by 1995.

KFC hopes to triple its number of European units over the next 5 years, with plans to open eating places in Spain, France, and Germany, and franchises in eastern and southern Europe. With an agreement to open 60 franchise out-

Table 1
U.S. Fast Food Chains Penetrate Foreign Markets

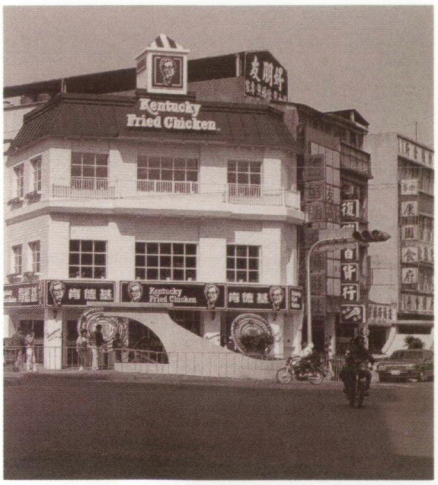
Restaurant chain	Total units, 1991	Foreign units, 1991
	Number	*Percent*
KFC	8,480	40
Baskin-Robbin's	3,315	31
McDonald's	12,430	29
Dunkin Donuts	2,755	22
Pizza Hut	8,000	17
Burger King	6,698	14
Dairy Queen	5,205	11
A & W Restaurants	713	10
Church's Fried Chicken	1,136	10
Arby's	2,649	9
Wendy's	3,741	9
Domino's	5,600	8
Big Boy	980	6
Denny's	1,377	5
Subway	6,181	5
TCBY	1,800	4
Little Caesar's	3,823	3
Taco Bell	3,500	2
Popeye's	870	2
Hardee's	4,230	1

Source: *Restaurant Business*, March 1992.

Table 2
Fast Food Sales Up at Home and Abroad

Restaurant chain	Change in sales, 1990-91	
	Domestic	Foreign
	Percent	
McDonald's	3	14
Burger King	1	6
Pizza Hut	3	19
Hardee's	7	13
KFC	7	8
Wendy's	8	17
Taco Bell	8	45
Domino's	-2	36
Dairy Queen	5	4
Little Caesar's	16	16
Red Lobster	9	0
Denny's	10	3
Subway	24	18
Arby's	4	15
Shoney's	11	0
Jack In The Box	3	0
Sizzler	-4	40
Dunkin Donuts	3	16
Long John Silver's	2	25
Ponderosa	0	3
Carl's Jr.	7	40
Bennigan's	4	0

Sources: *Restaurant Business* and *Nation's Restaurant News*, selected issues.



Foreign countries—particularly in Europe—offer many expansion opportunities for U.S. fast food firms since chain penetration is low.

lets in the United Kingdom over the next 7 years and another deal for 30 outlets in The Netherlands over the next 5 years, Arby's will enter Europe for the first time. Negotiations are also underway in Poland and Germany.

Fast food firms have just touched the tip of the iceberg of alternative points of distribution. We will likely see more kiosks and carts in the future. Taco Bell's goal is to triple the number of U.S. outlets to 10,000 over the next decade—a significant share will be kiosks and/or carts. Burger King plans to use kiosks as a primary vehicle for future domestic expansion. KFC expects to have kiosks and/or carts on 200 college-university campuses by the end of 1993, and intends to add 50-60 a year after that. One consultant predicts the number of new fast food units on campuses will grow 20 to 30 percent a year.

The trend toward greater emphasis on service in fast food operations will likely continue, as operators try to win and retain customers. For example, Rally's, the chain offering the most twin drive-thru's, has begun a large-scale investment in customer service with installations of a state-of-the art interactive video device for the drive-thru's to allow consumers and servers to see each other and to double-check orders and prices.

Burger King has been using a toll-free phone number for comments on customer service. It also began more than a year ago offering limited tableservice at 900 locations. McDonalds offers a "satisfaction guaranteed" policy, which gives the customer a free meal if, for any reason, they are not satisfied with food quality or service.

Fast food establishments have traditionally relied on the teenage laborforce, which has been declining since the late 1980's. But, according to the U.S. Department of Labor, this decline is nearing an end. The number of 16-19 year olds in the laborforce will increase gradually from 7.4 million in 1990 to 8.8 million by 2005. However, that number will still be 1.2 million below that in 1979.

Some fast food managers have dealt with the declining pool of teenage workers by employing people over 55 years of age. The number of senior adults in the laborforce will continue to grow.

Fast food companies will increasingly cater to the tastes of consumers who have become more interested in health and nutrition. For example, older Americans tend to favor foods that are low in cholesterol, salt, calories, and fat, and they appreciate having nutritional information available. Americans over 50 years of age represent 25 percent of our population, and will grow to 30 percent by the year 2040.

And, many fast food eating places are responding to their interests. Lower-fat items, such as salads and broiled chicken sandwiches, have become commonplace. Some firms have reduced the fat content of their hamburgers and ice cream products. For example, beef tallow—a highly saturated fat used to cook and flavor french fries—was dropped in 1990 by three of the largest fast food chains: McDonald's, Wendy's, and Burger King. By using vegetable oils instead, the saturated-fat level of french fries is reduced by 50 percent.

Fast food chains are also providing more nutrition information to the public through pamphlets, posters, tray liners, and toll-free telephone hotlines.

References

Alexander, Suzanne. "Hungry Fast Food Companies Invade College Eateries and Nutritionists Groan," *The Wall Street Journal,* Nov. 1990, pp. 1 and 37.

"Food Industry Forecast," *Restaurants USA,* Vol. 11, No. 11, Dec. 1991, pp. 13-36.

Keegan, Peter O. "Pepsico Hits the Books with 3-in-1 School Outlet," *Nation's Restaurant News,* Vol. 26, No. 39, Sept. 1992, pp. 1 and 65.

Lorenjini, Beth, and Brenda McCarty. "The Branding Evolution," *Restaurants and Institutions,* Vol. 102, No. 21, Sept. 1992, pp. 87-98.

Manchester, Alden. *Rearranging the Economic Landscape: The Food Marketing Revolution, 1950-91,* AER-660. U.S. Dept. Agr., Econ., Res. Serv., Sept. 1992. ■

Continued Export Expansion Likely for U.S. Food Processors

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Because of record export growth, U.S. food processors posted a trade surplus in 1992 for the first time. The appeal of American brand names and the influence of U.S. multinational firms abroad should strengthen that position in the face of stiff world competition.

U.S. firms sell in a world market where trade in processed foods exceeded $205 billion in 1990. Two dozen countries supplied 80 percent of that amount. Over half of all shipments originated in Western Europe and North America. The United States accounted for 8.5 percent of world exports of processed foods in 1990, surpassed only by France with 9.8 percent and The Netherlands with 8.9 percent.

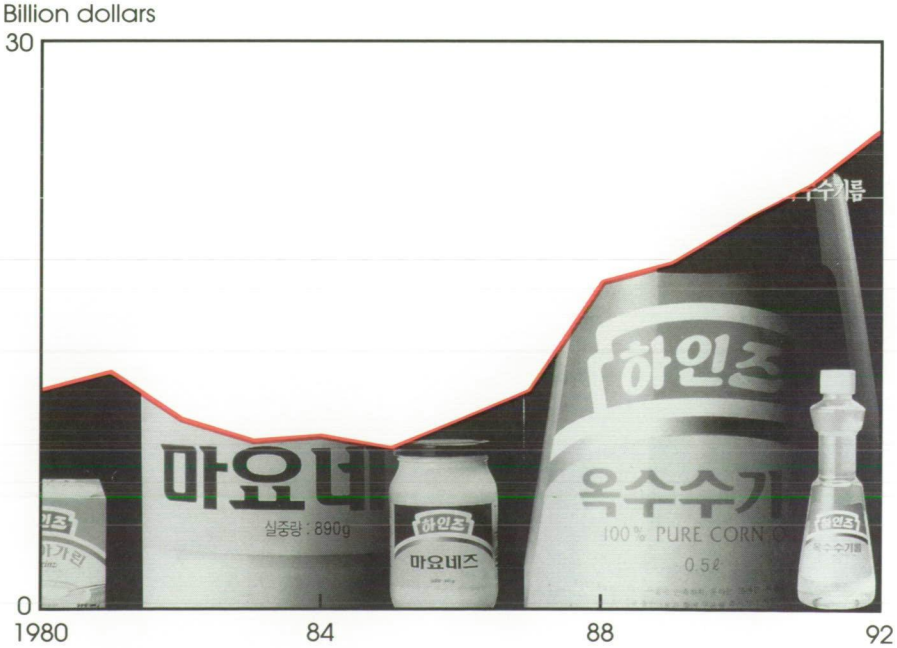
The United States Becomes a Net Exporter of Processed Food

Processed foods include farm and seafood products that have undergone varying degrees of manufacturing. U.S. exports of processed foods include products from all plants located in the United States whether owned by a U.S. company or a foreign firm.

U.S. exports of processed foods exceeded the value of like imports by $700 million in 1992. Processed food exports from the United States reached $22.6 billion in 1992 after following a flat, and sometimes declining, path over much of the 1980's (fig. 1).

U.S. processed food exports have climbed steadily since 1988, whether valued in current dollars or adjusted for inflation. The surge carried over into 1992, with yearend shipments 38 percent above 1988 levels.

Figure 1
U.S Exports of Processed Food Have Climbed Steadily Since 1985



Note: 1992 estimated.

The authors are agricultural economists with the Commodity Economics Division, Economic Research Service, USDA.

Several related developments have boosted U.S. exports. A climate of freer trade was fostered when major U.S. trading partners accepted provisions of the General Agreement on Tariffs and Trade (GATT, the international organization which governs trade negotiations and resolves trade disputes) to lower trade barriers. Agreements with important trading partners also helped. For example, Korea lowered barriers to imports of U.S. beef and other foods, and Mexico unilaterally cut tariffs and revised import quotas on a broad range of U.S. products even before formal negotiations began on a North American Free Trade Agreement (NAFTA). Another booster has been the relatively weak dollar, which reduced prices of U.S. exports for importing countries. Government funded export promotions also helped. The Targeted Export Assistance (TEA) and the Market Promotion (MPP) programs provided up to $200 million annually for overseas promotions—much of which involved processed foods.

To a greater degree than before, domestic manufacturers look abroad to expand existing markets or to enter new markets through exports, direct foreign investment, or various combinations of these strategies. Export efforts assumed added urgency when growth of the domestic food processing sector slowed in the mid-1980's along with the general slowdown in the economy.

A Few Industries Account for Most Exports

The food processing sector contains 44 industries that slaughter animals, can fruit and vegetables, make ice, polish rice, grind coffee, and undertake a host of other activities that involve varying degrees of processing complexity, capital intensity, and energy demands. Twelve food processing industries produced nearly three-quarters of the $20.1 billion of U.S. processed food exports in 1991 (fig. 2).

Four industries accounted for almost half (47 percent) of processed food exports in 1991: meat products, seafood, soybean oil, and wet corn milling.

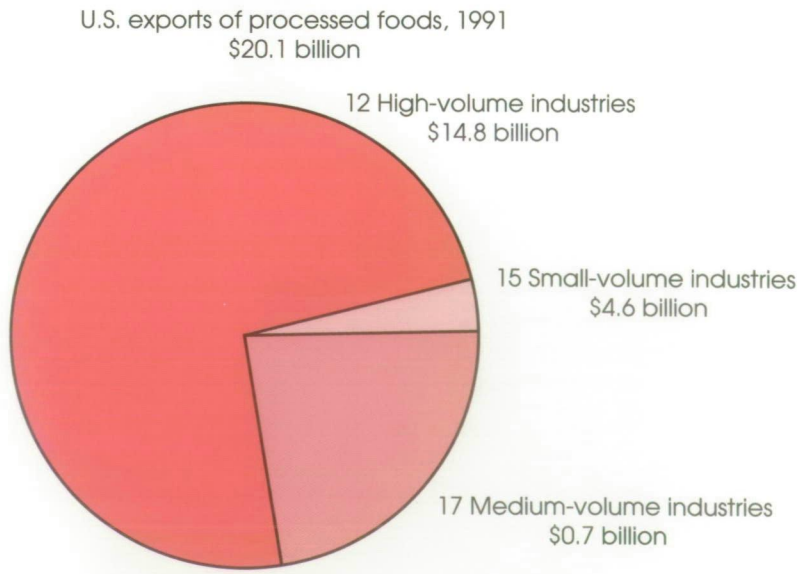
The meat processing industry, which also includes meat byproducts, accounted for 20 percent of processed food export volume in 1991. Meat processing continued its decades-long role as the bellwether food exporter, shipping over $4 billion worth of products (table 1). A number of leading products—such as hides, offals, and animal fats and oils—are essentially byproducts of meatpacking with little domestic demand. Foreign markets have been excellent outlets for these.

A strong, expanding market continued for the seafood industry, with over $2.6 billion in exports. Soybean oil processors and wet corn millers exported over $1 billion.

Fewer than a dozen products accounted for over half the shipments of the 12 processing industries with the largest exports. Of those, soybean oil and soybean cakes (a component of animal feed), corn gluten feed and meal, and salmon each exceeded $1 billion in 1991.

The appeal of American brand names is evident in the expanded foreign sales of U.S. products, such as soft drinks. This guard is sipping a Coke at the Berlin Wall.

Figure 2
Twelve Industries Account for Nearly Three-Quarters of U.S. Processed Food Exports



Other examples of the concentration of exports include cowhides and boneless beef, each averaging 35 percent of meat product exports; cut, frozen chicken, accounting for over 70 percent of poultry product exports; and almonds, constituting about 82 percent of exports of salted and roasted nuts.

Unbranded products headed the list of processed food exports. But brand-name products are growing in importance. For example, 1991 shipments of distilled liquors and beer—highly advertised brand-name products—each exceeded $500 million. Branded breakfast cereals, wines, and soft drinks each topped $100 million and together added another $500 million to export value.

Most Processing Industries Have Expanded Exports

Between 1988 and 1991, most U.S. processed food industries expanded their exports (table 1).

Shipments by food processing industries with the largest export volumes (those shipping $500 million or more) grew the slowest—up 17 percent. Exports from most industries in this group expanded: poultry grew 71 percent, seafood grew 59 percent, and food preparations (such as spices, vinegar, and baking powder) grew 57 percent.

But exports fell for a few industries. For example, shipments of soybean oil and soybean cakes fell 26 percent, and exports of animal and marine fats, such as tallow and whale oil, fell 22 percent. U.S. exports of soybean, corn, cottonseed, and other vegetable oils have declined since 1988, reflecting a combination of sharp cutbacks in purchases by some leading trading partners, effects of war, and shipment embargoes.

Exports from medium-volume processing industries (those that exported between $100 million and $499 million worth of products) grew 40 percent between 1988 and 1991. In contrast to the high-volume group, this group contains more industries that produce brand-name products. For exam-

Table 1
U.S. Exports of Processed Food Grew Rapidly in 1988-91

Processing industry	Export volume 1988	Export volume 1991	Change, 1988-91
	Million dollars		*Percent*
All industries	16,414.1	20,084.4	22.4
High-volume industries	12,705.6	14,816.0	16.6
Meatpacking	3,575.1	4,040.3	13.0
Fresh fishery	1,625.6	2,592.1	59.4
Soybean oil and products	2,160.0	1,597.2	-26.1
Wet corn milling	884.8	1,297.4	46.6
Poultry and eggs	506.7	866.4	71.0
Salted and roasted nuts	652.4	737.9	13.1
Milled rice	790.4	704.0	-10.9
Frozen fruit and vegetables	479.4	684.8	42.8
Other food preparations	427.4	671.1	57.0
Dried fruit and vegetables	408.8	570.9	39.7
Animal and marine fats	676.0	528.7	-21.8
Prepared animal feed	519.0	525.8	1.3
Medium-volume industries	3,239.0	4,551.9	40.5
Flavoring extracts	194.3	498.3	156.4
Canned fruit and vegetables	337.6	488.9	44.8
Canned and cured fishery	555.6	470.8	-15.3
Condensed and evaporated milk	426.3	376.5	-11.7
Flour and grain milling	275.3	312.2	13.4
Beet and cane sugar	240.3	305.9	27.3
Distilled spirits	175.8	290.0	65.0
Chocolate and cocoa	147.6	239.6	62.3
Bread and bakery	78.3	233.2	197.8
Dog and cat food	103.3	213.0	106.2
Malt beverages	91.2	206.6	126.5
Vegetable oil	227.0	191.8	-15.5
Wine, brandy, spirits	97.5	164.7	68.9
Sauces and dressings	71.5	164.6	130.2
Breakfast cereals	65.8	151.4	130.1
Soft drinks	79.4	133.6	68.3
Candy	72.5	110.9	52.9
Small-volume industries	469.4	716.0	52.5
Potato chips	25.7	91.2	254.9
Roasted coffee	67.4	88.8	31.7
Cottonseed oil	116.6	71.7	-38.5
Shortening	54.0	57.2	5.9
Canned specialties	21.6	54.6	152.7
Prepared foods	23.0	54.5	137.0
Sausages	43.9	53.1	21.0
Ice cream	8.1	50.3	521.0
Creamery butter	10.5	45.8	336.2
Fluid milk	15.4	42.8	177.9
Cheese	45.9	38.0	-17.2
Malt	17.4	33.1	98.8
Chewing gum	11.5	25.2	119.4
Pasta products	6.6	7.2	8.9
Manufactured ice	1.8	3.0	70.1

ple, distilled liquor exports rose 65 percent from 1988, reaching $290 million in 1991. Bread and bakery products also soared to $233 million in 1991, about double 1988 levels. Breakfast cereal exports also doubled. Processors exported 69 percent more wine in 1991. At the other extreme, other vegetable oils (excluding corn, cottonseed, and soybean oils) dropped 16 percent. Condensed milk and canned and cured fish exports also fell.

Although small-volume industries (exports below $100 million) shipped only 4 percent of 1991's processed food exports, their exports grew rapidly (53 percent) between 1988 and 1991. Seven of the 15 industries more than doubled their exports. This group also includes a high proportion of industries that produce brand-name products.

The faster growth in exports of brand-name products may foretell a long-term shift in processed food exports from unbranded, bulk products to branded products.

A Few Countries Buy the Bulk of U.S. Exports

Processed food exports from the United States enter 198 countries, but 8 of these trading partners took 68 percent of 1991's processed exports (table 2).

Japan—the largest U.S. market for agricultural products—bought a fourth of all U.S. processed foods shipped abroad, accounting for $5.3 billion of U.S. processed food exports. Canada followed, importing $3.1 billion. Mexico ($1.6 billion) and South Korea ($1.2 billion) completed the quartet of U.S. customers importing $1 billion or more of U.S. processed foods. The former Soviet Union, United Kingdom, former West Germany, and The Netherlands each imported over $500 million worth of U.S. processed foods in 1991.

Table 2
Eight Trading Partners Bought 68 Percent of U.S. Processed Food Exports

Importer	Export volume 1988	Export volume 1991	Change, 1988-91	Share of total exports
	Million dollars		*Percent*	*Percent*
$500 million or more:				
Japan	4,603	5,245	14	26
Canada	1,320	3,065	132	15
Mexico	912	1,572	72	8
South Korea	828	1,181	43	6
The Netherlands	966	803	-17	4
Former Soviet Union	330	664	101	3
United Kingdom	398	523	31	3
Former West Germany	481	500	4	3
Total	9,837	13,554	38	68
$100 million to $499 million:				
Taiwan	358	456	27	2
France	390	438	12	2
Hong Kong	226	397	76	2
Saudi Arabia	244	280	15	1
Spain	178	271	52	1
Italy	326	250	-23	1
Australia	115	238	107	1
Belgium	159	178	12	1
Venezuela	317	164	-48	1
Portugal	133	144	8	1
Egypt	285	136	-52	1
Singapore	102	132	29	1
Algeria	194	132	-32	1
Philippines	154	129	-16	1
Ireland	75	124	66	1
Sweden	94	107	14	*
Switzerland	88	107	21	*
Bahamas	107	106	-1	*
Turkey	69	101	47	*
Total	3,613	3,888	8	19
Fewer than $100 million (all 171 other countries)	2,964	2,642	-11	13
All importing countries	16,414	20,084	22	100

*Less than 1 percent. Source: U.S. Bureau of the Census.

With Canada doubling its imports from the United States in 1988-91, the eight major trading partners produced most of the growth in processed exports. Products imported by these $500-million-plus customers were 38 percent higher in 1991 than 3 years earlier (table 3). The former Soviet Union also doubled its purchases. Only The Netherlands' U.S. processed food imports fell below 1988 levels.

An additional 19 countries—10 percent of all U.S. trading partners—imported $100 million to $499 million worth of U.S. processed foods in 1991. These countries, over half of which were developing nations, received 19 percent of U.S. processed food exports in 1991. Among the leading importers in this group were Taiwan, Hong Kong, and Saudi Arabia. These compare with imports from 104 countries (53 percent of

Table 3
Large-Volume Importers Had Biggest Percent Increase in U.S. Imports Between 1988 and 1991

Value of 1991 shipments	Countries	Change, 1988-91
	Number	*Percent*
$500 million or more	8	37.8
$100-499 million	19	7.6
$50-99 million	19	27.9
$10-49 million	48	-6.0
Under $10 million	104	-75.0

Source: U.S. Bureau of the Census.

U.S. customers), which collectively purchased only 1 percent of U.S. exports of processed foods in 1991.

The 19 trading partners who bought between $100 million and $499 million of U.S. processed foods in 1991 increased purchases by 28 percent between 1988 and 1991. Most had double-digit growth.

Imports of the small-volume group of U.S. customers fell from over $700 million to fewer than $200 million, resulting mainly from the war-induced loss of trade with Iraq (which totaled $487 million in 1988).

Exports by U.S. Multinational Firms Increase

Large U.S. multinational food corporations (MNC's) rely heavily on sales from their foreign subsidiaries, joint ventures, and licensing operations to access foreign markets. Sales from these U.S. food processors' foreign subsidiaries are about nine times larger than their U.S. exports. Nevertheless, U.S. MNC's are increasingly taking advantage of export opportunities.

We have firm-level data on the 34 largest U.S. MNC's, which account for about 37 percent of total sales by all firms in the U.S. food

Table 4
Exports' Share of Total Sales Almost Doubled for the 34 Largest U.S.-Based Multinational Food Corporations

Firm	1988		1991	
	Exports of processed foods	Share of U.S. shipments of processed foods	Exports of processed foods	Share of U.S. shipments of processed foods
	Million dollars	*Percent*	*Million dollars*	*Percent*
Top 15:				
Philip Morris/ Kraft General Foods	264	1.5	1,325	5.8
Archer Daniels Midland	979	16.5	925	14.0
ConAgra	215	3.0	726	4.5
Anheuser Busch	282	3.5	561	5.9
Chiquita Brands	86	3.6	223	10.6
Tyson Foods	153	4.4	187	4.9
Coca Cola	94	2.6	163	4.0
General Mills	74	2.2	148	2.3
Procter & Gamble	124	4.3	142	4.0
Hershey Foods	39	2.0	128	5.0
Universal Foods	36	5.5	127	17.1
H.J. Heinz	61	2.0	121	3.3
Mars	45	1.0	120	2.0
PepsiCo	21	.4	111	1.2
Sara Lee	38	.7	104	2.2
Remaining 19 firms	401	1.1	700	1.8
Total for 34 U.S. firms	2,912	2.6	5,810	4.1

Source: Company reports and ERS estimates.

processing industry. A U.S. MNC is a corporation headquartered in the United States that operates a food processing plant in at least one other country.

These large food processors generally rely much more heavily on sales from foreign subsidiaries than on exports from U.S.-based plants to serve foreign markets. For example, the 34 largest U.S. MNC's received an average of 27 percent of their worldwide processed food sales from their foreign subsidiaries in 1991, while exports from their U.S. food processing operations accounted for only 4.1 percent of sales. In comparison, exports as a share of sales of all U.S. food processors averaged 5.2 percent.

However, MNC's are taking a growing role in U.S. processed food exports. Between 1988 and 1991, exports of the 34 MNC's increased 100 percent to $5.8 billion (table 4). During the same period, total U.S. exports of processed food grew 22 percent. Therefore, the share of U.S. processed food exports generated by these MNC's increased markedly from 18 percent to 29 percent.

At the same time, their share of total industry sales increased only slightly, from 34 to 37 percent. Therefore, the export share of total sales for these large firms increased dramatically from 2.6 to 4.1 percent—just below the 5.2 percent for all U.S. food processors. In 1991, 15 of the 34 firms shipped at least $100 million in exports, up from 6 in 1988.

Kraft General Foods, a Philip Morris subsidiary, led the charge in processed food export growth from $264 million to $1,325 million. Only 1 of the 34 MNC's, second-ranked Archer Daniels Midland, had a decline in exports of processed foods. ConAgra's exports more than tripled, from $215 mil-

lion to $726 million. Universal Food's exports as a share of sales grew from 5.5 percent to 17.1 percent—the highest of all 34 firms. While lower trade barriers and a decline in the value of the dollar relative to many other currencies have contributed to export growth, production facilities abroad have also helped U.S. MNC's to identify and take advantage of new export opportunities.

At the other end of the spectrum, 9 of the 34 MNC's exported less than 2 percent of their U.S. processed food sales in 1991. Four firms (Quaker Oats, Campbell Soup, RJR Nabisco, and Clorox) exported less than 1 percent of their processed food sales.

Continuing Export Expansion Likely

The prospect is bright for continuing expansion of processed food exports in the immediate years ahead. U.S. processors posted a trade surplus in 1992 for the first time ever because of record export growth. Growth in U.S. exports of processed foods precedes signing of broad-based trade pacts, such as NAFTA. Trade treaties, which lower duties and reduce or eliminate import quotas, will lend added impetus to export growth.

While the sheer volume of U.S. exports to major customers assures their key positions in continuing U.S. export growth, a third of U.S. exports of processed foods is spread throughout the globe. This diversification of a large variety of products shipped to many countries helps reduce year-to-year fluctuations in export sales.

Meat and meat byproducts, seafood, grain mill feeds, and oil products should continue to dominate U.S. exports of processed foods as trade barriers are reduced. For example, removal of import quotas which now exist on exports of animal fats to Mexico will strengthen demand for these products.

The appeal of American brand names is evident in the expanded exports of U.S. brand-name products as diverse as soft drinks, wine, ice cream, and pet food. In the past, U.S. processors of brand-name, highly advertised products have entered foreign markets or expanded existing operations primarily through direct investment or through joint ventures with local firms in host countries.

The sharp upswing in exports from domestic plants of U.S. MNC's from 1988 to 1991, however, strongly suggests an enlarged future role for exports from U.S.-based plants of U.S. MNC's. □

Food Processing in Mexico Attracts U.S. Investment

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Spurred by a growing economy and population, Mexico has created a favorable environment for foreign firms to sell and invest in. The U.S. food processing industry is responding to the opportunity. Exports to Mexico by U.S. food processing firms and sales by their Mexican affiliates now total nearly $7 billion annually.

Reforms Stimulate Trade and Investment

Mexico has opened the door wider to foreign investors and traders by unilaterally liberalizing its trade, foreign investment, and domestic policies.

Since its accession to the General Agreement on Tariffs and Trade (GATT) in 1986, Mexico has reduced its maximum tariff rate from 100 percent to 20 percent. Mexico has also substituted tariffs for nontariff barriers, such as import licenses and quotas, and has dropped import licensing requirements on several agricultural and processed food items.

Rules governing foreign investment have been liberalized. Under certain conditions, Mexico now permits 100-percent foreign ownership of firms in most sectors of the economy.

Maquiladoras are a prime example. Maquiladoras are firms in Mexico that primarily specialize in production for export. The Mexican maquiladora program is one of the world's largest export processing zones with special import and export duty rates. That is, imports from other countries used in processing or assembling finished products for export enter Mexico duty-free. If the finished product is re-exported to the United States, only the non-U.S. share is charged a duty.

Mexico is the third largest market for U.S. processed food exports, following Japan and Canada. While the climate is ripe for increased exports, there are several advantages for using direct investment strategies over exports to access the Mexican market.

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The maquiladora program is being liberalized. When established in 1965, maquiladoras had to be located within a 20-kilometer strip along the U.S. border. Now maquiladoras can be located anywhere except in major urban areas of Mexico City, Guadalajara, and Monterrey. These firms may now sell a third of their output in the domestic market. Licensing is also easier, and investors from all over the world may establish plants. The United States remains the major investor.

These reforms have stimulated the Mexican economy to achieve an average annual real growth of 3.8 percent during the past 3 years. Exports from maquiladoras have grown over 20 percent. These plants number 1,699 and employ over 400,000 workers. Wages are up too. Wages (in U.S. dollar terms) doubled between 1983 and 1990, but were still lower than in the United States or Canada.

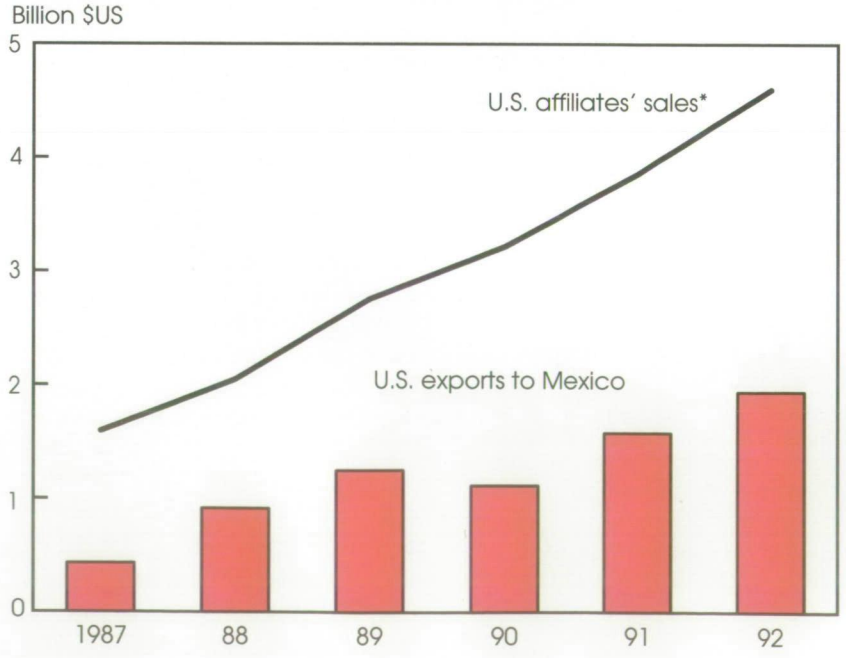
U.S. Food Exports to Mexico Increase

Mexico's population is growing, and is expected to expand from 89 million in 1991 to about 109 million by the year 2000. With an expanding economy and growing population, Mexico's demand for food products is increasing.

Mexico is the third largest market for U.S. processed food exports, following Japan and Canada. Mexico accounted for 8.5 percent of U.S. processed food exports in 1992, and that share is growing. Such exports to Mexico grew from $991 million in 1988 to over $1.9 billion in 1992—an average annual growth rate over 22 percent (fig. 1).

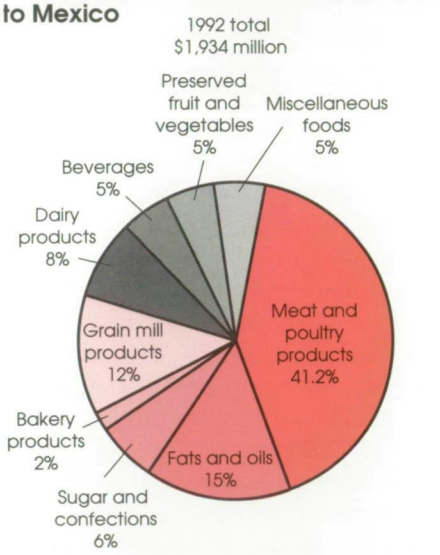
Meat and poultry products, including hides and skins, are by far the largest U.S. export category, accounting for 41 percent of total U.S. processed food exports to Mexico (fig. 2). The plant and animal fats and oils group constituted 15 percent. Grain mill products (including prepared feeds and pet foods) accounted for 12 percent of total processed food exports to Mexico, followed by dairy, sugar and confections, beverages, processed fruit and vegetables, and miscellaneous foods.

Figure 1
Processed Food Sales in Mexico by U.S. Affiliates Dwarf the Near18-Percent Annual Increase in Like U.S. Exports to Mexico



*1991-92 estimated.

Figure 2
Meat and Poultry Products Are by Far the Major U.S. Processed Food Exports to Mexico



Among individual processed food and feed industries, meatpackers are the most important U.S. exporters to Mexico. The poultry and egg processing industry ranks second, followed by soybean oil production, wet-corn milling, condensed and evaporated milk, and the animal and marine fats and oils industry.

Direct Investment Preferred Over Exports

Although U.S. exports of processed food to Mexico have increased markedly, many U.S. food firms are concentrating on direct investment strategies to increase their presence in the Mexican market. The proposed North American Free Trade Agreement (known as NAFTA), which would further im-

prove Mexico's incomes and the investment climate, would likely strengthen this commitment. For example, U.S. food firms exported $1.9 billion worth of processed food and feed to Mexico in 1992, while sales by their affiliates in Mexico were over twice as much—an estimated $4.6 billion (fig. 1).

There are several advantages to U.S. food processors using direct investment strategies to access Mexico and other foreign markets. In addition to avoiding trade barriers and reducing transportation costs, U.S. firms with production facilities in the host country can maintain better control over marketing and distribution activities.

The Mexican Government now actively encourages foreign investment from the United States and other countries. The Mexican Investment Board, a joint project of the Mexican Government and the private financial community, provides information on labor, advises on viability of projects, refers investors to bankers, helps cut red tape, and sets up meetings with government authorities. With liberalized foreign investment laws, lower trade barriers, and good prospects for a trade agreement, Mexico has become far more attractive to U.S. and other foreign investors.

U.S. Affiliates' Sales Rising High and Fast

Sales by U.S. food processing affiliates in Mexico are rapidly growing. For example, U.S. affiliates' sales in Mexico increased 34 percent between 1988 and 1989, compared with increases of 8 percent in Canada, 20 percent in Europe, and 15 percent overall. Affiliate sales in Mexico continued to grow 17 percent in 1990 and an estimated 20 percent in 1991 and 1992. Such increases have resulted in Mexico ranking as the eighth largest host country for U.S. affiliates. Among the top 10 host countries for U.S. affiliates, Mexico is the only developing economy.

In 1990, U.S. firms maintained 30 food processing affiliates in Mexico, each with sales of at least $3 million. Average sales per U.S. affiliate increased from $55.4 million in 1988 to $107.3 million in 1990. Of the 30 U.S. affiliates, 8 were fruit and vegetable processors, 6 in the grain milling sector, 5 in beverages, 1 in dairy, 1 in meat processing, 1 in baking, and 8 in "all other," which includes sugar, confections, fats and oils, snacks, seafood, and other food preparations. These affiliates employed 48,100 people in 1990, up slightly from 48,000 in 1987.

Typically, U.S. parent companies hold the majority share in ownership of their food processing affiliates. Across all countries, 73 percent of U.S. affiliates are majority owned. This percentage drops significantly for Mexico, where only 56 percent of U.S. affiliates are majority owned. This share should increase given Mexico's recent liberalization of foreign investment regulations.

U.S. Affiliates Produce for the Mexican Market

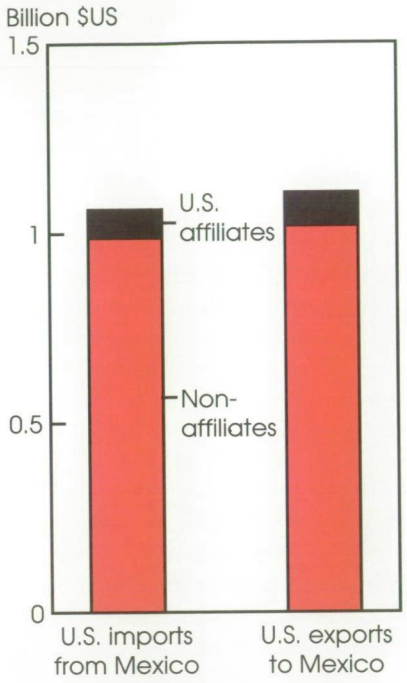
With a few notable exceptions, U.S. affiliates in Mexico produce primarily for the domestic market rather than for export to the United States. U.S. firms are transferring some production, marketing, and technology resources to their Mexican affiliates and joint-venture operations. These firms generally are more interested in Mexico as a rapidly growing market than as an export platform.

Merchandise trade between the United States and Mexican affiliates is surprisingly small. In 1990, U.S. imports of processed food from Mexico totaled $1.063 billion. Of this amount, only $74 million, or 7 percent, came from U.S.-owned Mexican affiliates (fig. 3). The same holds true for other countries. U.S. processed food imports from U.S.-owned affiliates worldwide totaled $1.289 billion in 1990, which accounted for only 6 percent of all processed food imports.

Likewise, U.S. firms export relatively small amounts to their foreign affiliates. U.S. firms exported $87 million worth of processed food to their Mexican affiliates in 1990. This accounted for 7.8 percent of total processed food exports to Mexico. Worldwide, the percentage is higher. About 9 percent of the total $19 billion in U.S. processed food exports in 1990 went to U.S. affiliates.

An obvious exception to this pattern of limited trade between affiliates and their U.S. parent compan-

Figure 3
U.S. Trade with Food Processing Affiliates in Mexico Is Small



Note: 1990 data.

ies are the maquiladora plants. Food and feed products exported to the United States from maquiladoras totaled just $145,000 in 1989 but rose to $490,000 in 1990. The duty-free U.S. portion also expanded—from 35 percent in 1989 to 62 percent in 1990. Products exported include canned, frozen, and dehydrated fruit and vegetables; meats (including sausage casings); seafood; candy; and salty snack foods.

Major U.S. Food Firms Have Affiliates in Mexico

Data from various company reports show that in 1992, 19 large U.S. food processing firms had 45 affiliates or joint ventures in Mexico's food and feed processing sector (table 1). Some U.S. food processors have operated in Mexico for many years; others have just recently entered. Several small U.S. food processors also have ownership interests in food processing plants in Mexico.

Ralston Purina has operated prepared feed and pet food plants in Mexico for several years and has just built a new plant to manufacture ready-to-eat cereal. CPC International operates a corn refining plant and consumer products plants producing salad dressings, oils, margarine, and other products. Kraft General Foods, owned by Philip Morris, manufactures a variety of frozen foods, dairy products, and other packaged foods at its three affiliates in Mexico.

Pilgrim's Pride Corporation, headquartered in Texas, is the second-largest chicken processor in Mexico. Pilgrim's Mexican operations include three feed mills and three chicken processing plants, as well as breeding, hatching, and grow-out facilities.

In 1990, PepsiCo greatly increased its investment in Mexican food processing plants. In addition to owning a concentrate syrup plant, PepsiCo is Mexico's largest salty-snack processor and cookie manufacturer. Total sales from PepsiCo's food processing affiliates in Mexico substantially exceed $1 billion.

Campbell Soup operates two plants in Mexico, which produce a variety of canned and frozen vegetables and other food ingredients. Campbell exports tomato paste and other ingredients from its Mexican affiliates for use in its U.S. operations. Universal Foods owns two food flavoring and coloring plants. Quaker Oats operates a cereal and a chocolate products plant and is expanding its sports drink operations. RJR Nabisco re-entered Mexico in 1992 by acquiring Lance, a Mexico City-based manufacturer of biscuits, pasta, flour, and cake mixes.

U.S.-owned companies dominate maquiladora food processing firms. In 1991, 37 U.S. food processing companies operated under maquiladora programs. Most of these companies are small. Larger companies with maquiladora food processing firms include Campbell Soup, Kraft General Foods, and Frito Lay (part of PepsiCo).

Table 1
Ralston Purina Is the Leading U.S. Food Processing Firm With Affiliates in Mexico

U.S. company	Number of Mexican affiliates or joint ventures
Ralston Purina	10
Pilgrim's Pride	6
CPC International	5
Philip Morris (Kraft General Foods)	3
Campbell Soup	2
PepsiCo	3
Quaker Oats	2
Universal Foods	2
Coca Cola	1
Bordon	1
Kellogg	1
Hershey Foods	1
McCormick & Co.	1
Gerber Products	1
Tyson Foods	2
Sara Lee	1
RJR Nabisco	1
Cargiel/Excell	1
J.R. Simplot	1

Several large foreign-owned food processors in the United States have food processing affiliates in Mexico. These firms include Green Giant/Pillsbury, owned by Grand Metropolitan (United Kingdom); A.E. Staley, owned by Tate & Lyle (United Kingdom); and Central Soya, owned by Gruppo Ferruzzi (Italy).

U.S. Firms Also Concentrate on Joint Ventures

Some firms participate in joint ventures with Mexican companies. McCormick has a longstanding joint venture with a Mexican firm that produces McCormick-brand mayonnaise and spices. Gerber

also has a joint venture that produces its baby food products for the Mexican market.

Tyson Foods developed an innovative joint venture with the Mexican firm Corporacion Citra and with C. Itoh & Co., Ltd. of Japan. Tyson exports whole broilers from its U.S. plants to Citra, where the broilers are deboned and further processed. Citra then exports the finished product to Japan, where it is distributed by C. Itoh. Tyson provided technological assistance to Citra to develop new deboning and further-processed poultry processing plants.

Tyson recently expanded its Mexican operations by entering into a second joint venture with Trasgo SA de CV, a major Mexican poultry producer/processor. Tyson's joint ventures augment rather than supplant its U.S.-based deboning and further processing operations.

Other food processors are entering the Mexican market by developing joint ventures for distribution, rather than by investing in foreign production facilities. For example, Sara Lee recently signed a joint venture with Grupo Industrial Bimbo, Mexico's largest bread and bakery manufacturer. Bimbo is one of the few firms in Mexico with its own national distribution network. Bimbo will help Sara Lee distribute its many bakery and processed meat products in Mexico, while Sara Lee will help Bimbo distribute its bakery products in the United States.

U.S. food wholesalers, such as McLane Company (owned by Wal-Mart) and Labatt Food Service, are opening modern wholesale distribution centers in Mexico. Rykoff-Sexton, a leading U.S. foodservice distributor, formed a joint venture with Organizacion Imperial SA de CV. The company, called Foodservice SA de CV, will distribute processed foods, foodservice equipment, and nonfood supplies to foodservice firms in Mexico. Fleming Companies, the second largest U.S. grocery wholesaler, also recently signed a joint venture with Grupo Gigante, a leading Mexican supermarket firm. The joint venture, called Gigante-Fleming SA de CV, plans to open four to six large supermarkets in Mexico during 1992-93.

Entry by these and other firms will pressure Mexican distribution firms to modernize and reduce costs. Having access to more efficient wholesalers will help U.S. food processors penetrate Mexican markets, whether from their U.S. operations or from their Mexican affiliates. In addition, Wal-Mart and The Price Company have both formed joint ventures with Mexican firms to open several membership wholesale clubs in Mexico. These stores will be similar to the Sam's Clubs and the Price Clubs in the United States. The Wal-Mart-CIFRA, SA joint venture also plans to open 11 large supermarkets in Mexico by mid-1993.

Several U.S. restaurant chains have expanded into Mexico—mostly by franchises or joint ventures. KFC (owned by PepsiCo) is leading the way, with over 70 outlets in Mexico. Domino's Pizza has 45 units in Mexico, followed by McDonald's 35 restaurants. Also in Mexico, but on a smaller scale, are Subway, Arby's, Carl's Jr., Chili's, T.G.I. Friday's, Jack in the Box, Sirloin Stockade, and Taco Bell.

Increased Partnerships Benefit Both Countries

More U.S.-Mexico joint ventures may occur. U.S. investors currently provide capital, technical expertise, and, in most cases, management, while Mexico supplies mostly labor, but also capital, management, and local knowledge of market conditions.

Increased joint ventures could increase economic activity in both the United States and Mexico. The majority of inputs and equipment imported by the maquiladoras and joint ventures comes from the United States. Without increasing U.S. investment, other countries may fill the gap. Such firms may be less inclined to import raw materials or components from the United States. Under NAFTA, the special duty treatment under the maquiladora program would eventually be replaced by a provision that will eliminate all tariffs faced by U.S. and Mexican firms by the end of the transition period.

Small Direct U.S. Investment From Mexico

While U.S. firms are rapidly expanding into Mexico, Mexican direct investment in the U.S. food industry is very small. In 1989, sales from Mexican-owned affiliates in the United States were below $50 million.

A notable exception is Grupo Industrial Maseca SA de CV. Maseca controls over 60 percent of the Mexican corn flour market, and has recently expanded into Central America and the United States. Maseca now produces corn flour in at least three plants in the United States. It also produces tortillas in 12 plants in 5 U.S. States, and is looking to expand into several additional U.S. cities. □

Fresh-Market Link Alters Mexico's Competitiveness in Processed Tomatoes

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The processed tomato industry in Mexico is small but becoming more important, as the sector has grown faster than the fresh market sector. Exports to the United States have increased as well. But further expansion of the industry depends critically on several factors—particularly competition for tomatoes from the fresh market.

Fresh Market Dominates the Tomato Industry

Mexico's processing industry is located in Sinaloa and Sonora, which are also Mexico's premier fresh-market regions.

Over half of Mexico's tomatoes are destined for domestic fresh markets. The remainder is split about evenly between fresh exports to the United States and processing into paste.

The fresh market influences available supply and prices of tomatoes for processing, as processors depend on the fresh market for 40 percent or more of their raw supply. But these supplies are highly variable.

Unlike in the United States, which produces separately for either the processing market or the fresh market, Mexico's tomatoes are used in both markets. During periods of high prices for fresh market tomatoes, growers of processing tomatoes will ignore their contracts and ship to fresh markets. When fresh market tomatoes are in surplus or too mature for safe shipment, they are processed, which results in lower prices paid by tomato processors.

Tomato Paste Production and Exports Growing

Though much smaller than the fresh market sector, the tomato processing industry has expanded faster (fig. 1). Mexico is now the world's eighth largest producer of tomato paste (table 1).

Most of the processing output is paste and derived products, while very little canned tomatoes and related products are produced. Mexico's 1990/91 paste production was expected to reach 64,000 tons, up from 59,000 in 1989/90.

(All tons mentioned are short tons—2,000 pounds.)

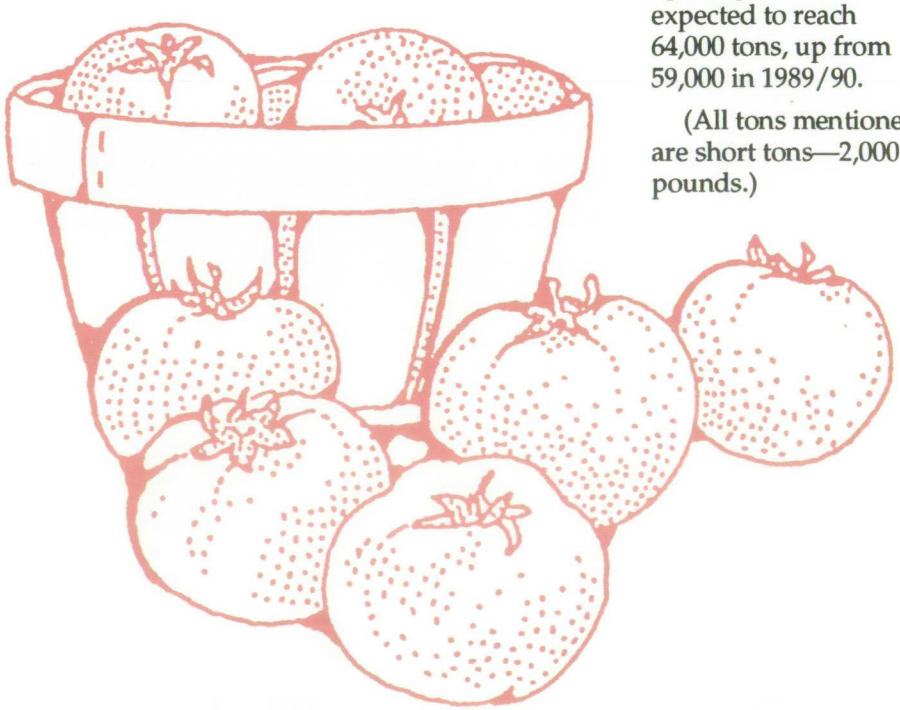

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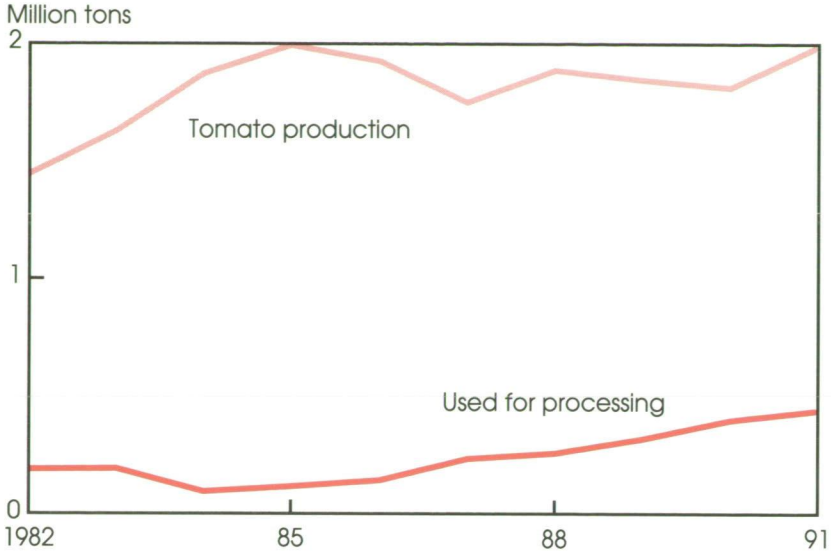
Figure 1
Processing Is Taking an Increasing Share of Mexico's Tomatoes



This level of production was less than one- fifth of that produced by Italy, the leading producer outside the United States. The size of Mexico's tomato processing industry relative to the United States is harder to measure, as the U.S. industry no longer reveals production levels.

But, we can estimate the size of the U.S. industry. If the relationship of paste production to total tomato production in California has not changed since 1983-85 (California grows approximately 90 percent of the U.S. tomatoes used for processing), U.S. paste production would be about 852,000 tons, 14 times as large as Mexico's. Another indication of the relative size of tomato processing in each country is the volume of tomatoes delivered to processors in 1990: 402,000 tons in Mexico and 9.2 million tons in California.

The United States is Mexico's most important export market for tomato products. Mexico's exports of processed tomato products to the United States grew steadily from 14,875 tons in 1986 to 29,018 tons in 1990. This growth paralleled the expansion in Mexican paste production during the same period. Mexico's share of U.S. imports of processed tomato products has ranged between 8.8 percent and 16.5 percent during the past 5 years (table 2).

Table 1
Mexico Is the Eighth Largest Producer of Tomato Paste

Country	1989/90 preliminary estimates	1990/91 forecast
	1,000 tons	
United States[1]	NA	NA
Italy	367	375
Turkey	276	276
Greece	246	201
Portugal	122	154
Spain	88	139
Chile	66	88
Mexico	59	64
France	52	54
Israel	26	25
Taiwan	17	18

[1]The United States is the world's largest producer of tomato paste. While actual data are not available, the author estimates U.S. production at 852,000 tons. Source: USDA, FAS, *Horticultural and Tropical Products Review*, Jan. 1991.

Export Expansion Possible, But Limited

The proposed North American Free Trade Agreement (NAFTA) calls for an immediate reduction in the U.S. tariff on tomato paste from 13.6 percent to 11.5 percent, and then a uniform phase-out of that tariff over a 10-year period. This tariff reduction could provide an opportunity for Mexico to increase its U.S. market share.

But for Mexico to expand exports, it first must increase paste production. Such expansion will depend on costs relative to U.S. and other foreign producers, competition for tomatoes from the domestic fresh market, management skills, and adoption of appropriate technology.

Tomato Paste Costs

The before-duty value, at the border, of Mexican paste imported into the United States averaged 27.4 cents per pound in 1986-88 and 36.6 cents per pound in 1989-90 (table 2). Comparable costs in California probably averaged 38 cents (or less) per pound, with some specialized operators producing at 32-34 cents.

But closer analysis of Mexican paste production reveals wide variation in costs among processors. Costs vary due to differences in

Table 2
United States Is an Important Market for Mexico's Processed Tomato Products [1]

Year	U.S. Imports from Mexico Volume	Price[2]	Value	Total Import values	Mexico share
	Tons	*$US/cwt*	*Thousand $US*	*Thousand $US*	*Percen*
1986	14,875	27.49	8,177	77,619	10.5
1987	16,851	27.31	9,203	69,630	13.2
1988	21,210	27.52	11,675	133,328	8.8
1989	23,237	36.61	17,012	161,050	10.6
1990	29,018	36.61	21,243	129,123	16.5
1991	31,077	29.19	18,141	81,723	22.2
1992	9,672	33.27	6,436	69,158	9.3

[1]Includes dried tomatoes. [2]Average customs value, excluding import duties, freight, insurance, and other charges incurred in moving the commodity to the U.S. port. Value may include intra- and intercompany transfer prices that may differ from observed market prices. Source: USDA, ERS, *Foreign Agricultural Trade of the United States,* various issues.

raw product prices paid (the greatest portion of total costs), plant efficiencies, and accounting methods.

Eight estimates of Mexican paste production costs were derived from information provided during interviews conducted in 1991. Other processing costs (other than raw product) ranged from 9 cents to 14 cents per pound, with an average of 12 cents per pound (table 3).

Because of their dependence on large quantities of fresh market tomatoes, processors are subjected to large price swings for tomatoes. For example, one processor reported paying from $73 to $91 per ton for tomatoes in 1990 (when a freeze in Florida drove up fresh prices in Mexico). When fresh market supplies were plentiful the next year, the processor paid from $39 to $45 per ton. Another reported that prices were $14 per ton less in 1991 than in 1990.

Based on the 1991 average price paid for raw tomatoes of $45 per ton (2.25 cents per pound) and other average processing costs of 12 cents per pound, the Mexican cost for producing tomato paste is estimated to be 28 cents per pound. After transportation and duty fees,

Table 3
The Largest Cost of Processing Tomato Paste Comes From the Raw Product

Mexican firm[1]	Raw product costs Per ton[2]	Per cwt	Other processing costs Per ton	Per cwt	Total costs Per ton	Per cwt
			$US			
1	353	17.64	282[3]	14.10	653[3]	31.75
2	363	18.14	272	13.61	635	31.75
3	394	19.68	247	12.34	640	32.02
4[4]	446	22.31	193	9.66	639	31.97
5	273	13.65	272	13.61	545	27.26
6	297	14.83	184	9.21	481	24.04
7	254	12.70	211	10.57	465	23.27
8	286	14.29	247	12.34	473	26.62
Average	317	15.86	239	11.93	572	28.59

Note: 1991 data. [1]Sources are coded to protect their identity. [2]Based on a conversion ratio for raw product to paste of 7 to 1. [3]Respondent said that costs were less but did not specify the level. [4]R. Robles Soto. "Planta procesadora de pasta de tomate, para la UAR del sur de Tamculipas," *Frutos: Fomento Agraindustrial,* Nov.1990. This firm's raw product price was excluded from the average, because 1990 prices were much higher than 1991.

Source: Interviews conducted in Sinaloa, Mexico, April 1991.

Mexican paste at the U.S. border would cost an estimated 35 cents to 36 cents per pound, just under the estimated costs for average California processors. Since freight charges from the Mexican border are approximately the same as from California to midwestern and eastern markets, delivered costs for Mexican paste would be similar to those for California paste.

In 1992, costs for some efficient California paste processors appeared as low as 32-34 cents per pound, although the industry average is probably closer to 38 cents per pound.

Without the duty fees, Mexican paste would then enjoy a 4- to 5-cent-per-pound advantage. The advantage could become greater if Mexico's raw tomato prices were to fall below their relatively low level of 1991.

But the advantage could be offset if prices increase to earlier levels. Each $10-increase (0.5 cent per pound) (decrease) per ton in tomato price raises (lowers) the paste cost by 3.5 cents per pound (based on raw product converted to paste at a ratio of 7 to 1). Therefore, prices near the $90 per ton (4.5 cents per pound) paid by some processors in 1990 would mean a cost disadvantage of over 10 cents per pound before any duty is levied.

Growing Costs Influence Long-Term Competitiveness

The cost of growing processing tomatoes is an important determinant of Mexico's long-term competitiveness with California. With lower labor costs, Mexico has a per acre cost advantage over California (table 4). However, Mexico also has lower yields, so its per ton cost for raw tomatoes is higher than California's.

Based on the full cost estimate of $61 per ton for growing processing tomatoes in table 4, Mexican processors could produce paste for about 33 cents per pound and deliver it to the U.S. border for about 37 cents per pound. At this cost, and in the absence of a tariff, Mexico would be competitive with California in supplying tomato paste to midwestern and eastern U.S. markets.

But changes in Mexico's fresh market tomato supply and prices would affect competitiveness. With excess supply and low prices, Mexico would gain a cost advantage. With low supply and high prices, Mexico would be at a cost disadvantage.

Table 4
Costs for Growing Processing Tomatoes Are Higher in Mexico Than in California

Activity	California[1] Sacramento County	California[1] Imperial County	Mexico
		Dollars per acre, 1989	
Field preparation	20	55	59
Planting and materials	147	30	196
Fertilization	38	183	167
Pesticides	236	196	251
Cultivation	145	135	91
Irrigation	67	225	26
Cultivating materials	6	0	2
Total preharvest	659	824	792
Harvesting	201	560	238[2]
Other (overhead)	451	129	53
Interest/rent	31	200	200
Total cost	1,342	1,713	1,283
		Tons	
Yield per acre	28	32	21
		Dollars	
Cost per ton	48	54	61

[1]Counties with the most recent cost-of-production budgets. [2]Based on personal interviews. Source: Adapted from the following: "Sample Costs to Produce Processing Tomatoes" (Sacramento County) and "Processing Tomato Projected Production Costs, 1989-90" (Imperial County), University of California — Davis,1990; and *Attaché Report*, MX 0232, USDA, FAS, Dec. 1990.

Other Factors Affecting Long-Term Competitiveness

Plant Capacity

Mexico's annual capacity for paste production is approximately 800,000 tons of tomatoes (based on a 90-day season and a 24-hour per day operation). Allowing for equipment maintenance, adverse weather, and scheduling problems provides a more realistic capacity of 550,000 tons.

In 1990 and 1991, Mexico processed between 400,000 and 450,000 tons of tomatoes. Therefore, Mexican paste production can increase 25 percent before additional plants would have to be built. However, this is a small increase compared with the 9.2 million tons of tomatoes processed in California.

The ability to build additional processing plants depends on the availability and cost of money. Since these factors vary considerably in Mexico, the investment environment is uncertain. For example, interest rates, as measured by the interest paid on treasury bills by the Mexican Government, varied from a high of 103 percent in 1987 to 13 percent in 1992.

Mexico's efforts to stabilize the economy should improve the investment climate and encourage investment in industry expansion when paste prices are rising.

Access to Markets

Mexico's paste industry has good access to U.S. markets because of proximity to the border and the links of at least two major processors (Sinaloapasta and Productos Industrializados del Fuerte) with U.S. processors. While this article does not evaluate the marketing programs of Mexican processors, the recent growth in paste exports indicates that market access is not a problem.

Management Skills and Technology

Good management generally leads to the adoption of appropriate technology. While plant management and processing technologies in Mexico appear to be good, the management of tomato production is less certain. The persistence of lower yields than California's, despite the availability of irrigation and modern cultural practices, indicates that production management and use of technology could improve.

For efficient plant operations, raw product needs to arrive daily. There have been problems coordinating plantings so tomatoes arrive at processors according to schedule throughout the season.

Improvements would lower raw product costs, increase capacity utilization, and lower per unit processing costs.

Where Opportunities Lie

Lack of dedicated markets for fresh and processing tomatoes impedes the development of the Mexican processing industry, because it creates supply and pricing instability. Increased specialization in producing tomatoes for the processing industry would probably stabilize costs, stimulate adoption of efficient processing varieties, and improve management of raw product supplies. If this were to occur, Mexico would become more competitive in the U.S. market and could take market share from other suppliers.

References

Moulton, Kirby. "California Pack of Processing Tomatoes," University of California Cooperative Extension—Berkeley, July 1986.

Moulton, Kirby. "The Processing Tomato Industry in Mexico," University of California Cooperative Extension—Berkeley, July 1984.

Robles Soto, Rigoberto. "Planta procesadora de pasta de tomate, para la UAR del sur de Tamaulipas," *Frutos: Fomento Agroindustrial,* Nov. 1990, pp. 16-22.

University of California. "Sample Costs to Produce Processing Tomatoes" (Sacramento County) and "Processing Tomato Projected Production Costs, 1989-90" (Imperial County), University of California—Davis, Cooperative Extension, Department of Agricultural Economics, 1990.

U.S. Department of Agriculture, Foreign Agricultural Service, *Attaché Report,* MX0231 and 0232. Dec. 1990

U.S. Department of Agriculture, Foreign Agricultural Service, *Horticultural and Tropical Products Review.* Jan. 1991.

Japan Adds Western Flavor to Its Traditional Diet

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With rapid economic growth and increasing per capita income, the Japanese are eating more, and what they are eating has more variety.

Over the last 30-plus years, the traditional Japanese diet—heavily reliant on rice and other food grains, sweet potatoes, fish, shellfish, and seaweeds—has become somewhat "Westernized." Meals now include more red meats, poultry, milk and other dairy products, eggs, fruit, and vegetables, as well as processed food, such as pasta, ham, bacon, catsup, and fruit beverages.

The Declining Role of Cereals

Per capita consumption of cereals—rice, wheat, barley, and other food cereals—declined from 343 to 228 pounds per year between 1955 and 1990. Although rice is the staple of the Japanese diet, consumption of rice decreased from 244 pounds per person in 1955 to 154 pounds in 1990. Japan's per capita wheat consumption, on the other hand, increased from 55 pounds in 1955 to 70 pounds in 1990.

In the 1950's, the Japanese consumed a substantial amount of barley and corn. However, consumption of these cereals decreased significantly from 44 pounds per capita in 1955 to 4 pounds in 1990. But in the last 10 years, the Japanese have consumed a growing amount of corn in the form of high-fructose corn syrup, corn starch, and corn flakes.

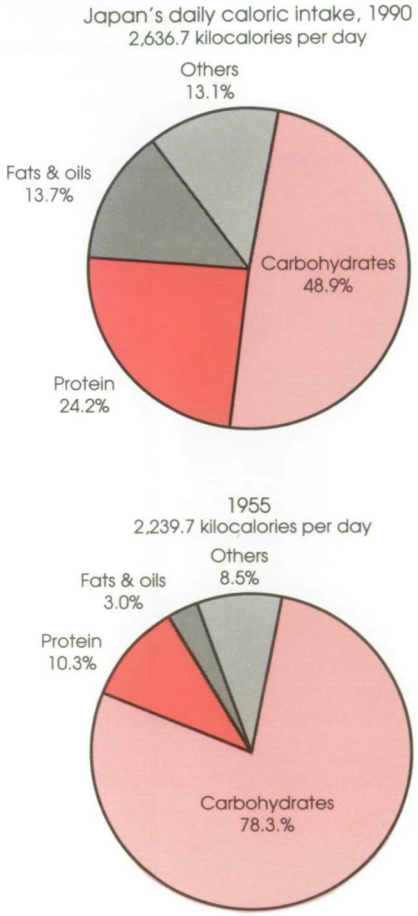
Average daily Japanese food intake increased from 2,240 kilocalories in 1955 to 2,637 in 1990. Cereals supplied two-thirds of the population's total daily caloric intake in 1955, but only 39 percent in 1990. Rice alone provided almost half of the population's total daily calories in 1955, but declined to 26 percent in 1990. Wheat came second, sup-

Although still the staple food in Japan's diet, rice is being consumed less. Instead, the Japanese are eating more red meats, poultry, milk and other dairy products, eggs, fruit, vegetables, and processed food.

The author is an agricultural economist with the Agricultural and Trade Analysis Division, Economic Research Service, USDA.

Figure 1

Japanese Diet Expands and Diversifies



plying a little less than 11 percent of the daily caloric intake in 1955, peaked to nearly 13 percent in the mid-1970's, and then decreased to cover only 12 percent of daily calories in 1990. While barley and corn provided 8.3 percent of daily caloric intake in 1955, these cereals now provide less than 1 percent.

Rising Role of Meat

The Japanese consume more fish and shellfish than all meats put together. Japanese per capita consumption of fish and shellfish is second only to that in Iceland, and is five times higher than in the United States.

Japanese consumption of fish and shellfish increased between 1955 and 1990—from 58 pounds per year to 82 pounds. During this time, consumers have shifted away from lower-priced fish, such as sardines, mackerel, and herring, toward higher-priced items, such as salmon, tuna, shrimp, and lobster.

But Japan's taste for meat has risen rapidly, pushing consumption up nearly ninefold during 1955-90—from 7.3 to 63.1 pounds per capita per year. (This is far below the 168 pounds per capita per year consumed in the United States.) Since 1955, per capita consumption of chicken rose 35-fold to 22.7 pounds per capita, followed by pork at 25.4 pounds, beef at 13.4 pounds, and other meats at 1.5 pounds (table 1). Meats are especially popular with Japanese consumers under age 40.

Whale meat has nearly disappeared from the Japanese diet due to an international ban on commercial whaling. Per capita consumption was 2 pounds in 1955, increased to a peak of 5.3 pounds in 1962, but declined steadily to less than 0.1 pound in 1990.

Caloric intake from meat, poultry, fish, and shellfish gained substantially in Japanese diets. These four protein sources contributed 4.5 percent of daily calories in 1955 and 12 percent of daily calories in 1990.

'Western' Foods More Popular

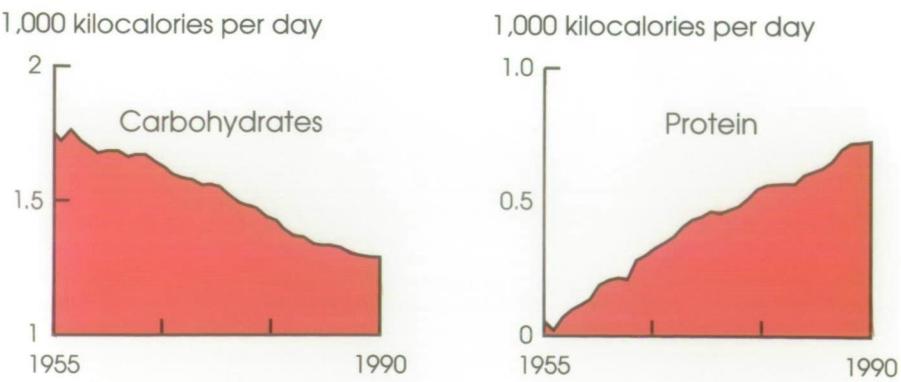
Japanese consumption of milk and dairy products increased sixfold from 1955 to 1990—from less than 27 pounds per capita to over 183 pounds. In comparison, Americans consume over two and half times as much milk and dairy products.

Egg consumption increased fivefold between 1955 and 1990—from 7.5 to 36.4 pounds per year. Japanese consumers eat 6.8 pounds more eggs a year than do Americans, despite mounting concern about cholesterol.

The Japanese consume about half the Americans' daily level of fats and oils. However, Japan's per capita consumption increased substantially from 6 to 31.5 pounds between 1955 and 1990. And, fats and oils' contribution to caloric intake more than quintupled. Health and nutritional considerations have encouraged consumers to substitute vegetable oils for animal fats such as lard and tallow. Cooking with vegetable oils has become commonplace, with palm oil the largest single imported oil. Rapeseed oil and soy oil consumption is much higher than palm oil. These are milled and extracted domestically from imported seeds.

Figure 2

Japanese Diets Include Fewer Carbohydrates, More Protein



Per capita consumption of starches and flours—notably from potatoes and corn—grew from 10.1 to 35.3 pounds a year during 1955-90. Similarly, consumption of fruit increased from 27.1 to 82.2 pounds per capita, and vegetable consumption (minus potatoes) grew from 182 to 236 pounds per capita. Growth in fruit and vegetable consumption was strongest between 1955 and 1970, but slowed in 1980-90. Because they are low in calories, fruit and vegetables added only marginally to caloric intake—from 4 to 5.2 percent of total daily calories between 1955 and 1990.

Consumption of pulses (mostly soybeans in the form of products, such as tofu and miso, but also peas, lentils, adzuki beans, and others) remained relatively constant at 20.5 pounds per year (after peaking at 23 pounds in 1969).

Among foods being eaten less often is sugar. Per capita sugar consumption first increased from 27.1 pounds in 1955 to a peak of 62 pounds in 1973, then declined to reach 46.3 pounds in 1990 as other sweeteners partially substituted for sugar. Japanese per capita consumption of caloric sweeteners—including sugar, high-fructose corn syrup, glucose, and dextrose—was 68.7 pounds in 1990, compared with 137.7 pounds in the United States.

Sugar provided 5.7 percent of daily caloric intake in 1955 and increased to 11.5 percent in the mid-1970's. But due to declining consumption, sugar provided only 8.4 percent of total daily calories by 1990.

During the 1970's and 1980's, french fries became popular, contributing to rising oil and potato consumption. Per capita consumption of potatoes, which first declined steadily from 102 pounds in

Table 1

Japanese Consumption Includes More Meat and Fish, Less Cereal

Food	1955	1970	1990
		Pounds per year	
Cereals	343.5	282.6	228.2
Rice	244.1	209.7	154.3
Wheat	55.3	67.9	69.9
Other cereals	44.1	5.1	4.0
Meats	7.3	29.5	63.1
Beef and veal	2.4	4.6	13.4
Pork	1.8	11.7	25.4
Poultry	.7	8.4	22.7
Whale	2.0	3.3	.1
Other meats	.4	1.5	1.5
Fish and shellfish	58.0	69.7	81.8
Eggs	7.5	32.6	36.4
Milk and dairy products	26.7	110.5	183.4
Fruit	27.1	82.9	82.2
Vegetables	181.7	254.9	236.3
Potatoes	101.6	35.5	45.4
Starches	10.1	17.9	35.3
Pulses	20.7	22.3	20.5
Sugar	27.1	59.3	46.3
Fats and oils	6.0	19.8	31.5

Source: Japan's *Statistical Yearbook of the Ministry of Agriculture, Forestry, and Fisheries, 1990-91* and previous issues.

Japan's taste for meat is rising rapidly, especially among Japanese consumers under age 40. Between 1955 and 1990, for example, per capita consumption of chicken rose 35-fold to 22.7 pounds.

1955 to 34.6 pounds in 1974, rose to nearly 45.4 pounds by 1990. However, daily caloric intake from potatoes went down from 6 percent of total calories to less than 2 percent during 1955-90. In 1955, sweet potatoes made up 72 percent of total potato consumption, but decreased to 26 percent in 1990 because of the declining preparation of traditional dishes using sweet potatoes.

Self-Sufficiency Down

Japanese farmers have achieved high levels of output from the average unit of land. However, with limited arable land and rising food requirements, Japan has become less self-sufficient in the production of many foods. Imports, particularly from the United States, are taking up the slack.

Self-sufficiency describes how well a country's domestic production meets its needs for a particular product. For example, a self-sufficiency rate of 100 for a commodity means a country produces enough to cover national consumption without the help of imports.

Following World War II, the Japanese Government initiated several programs to achieve self-sufficiency in rice production in order to compensate for the loss of its rice-producing colonies (Korea and Taiwan) and to avoid repetition of the severe food shortages experienced during the war. By the late 1960's, rice imports were eliminated, and Japan has since been essentially self-sufficient in rice.

By 1971, Japan had become the world's fourth largest rice exporter, selling 966,178 tons, or 10.5 percent of world shipments, at heavily subsidized export prices. Under pressure from other major rice exporters, Japan reduced its rice production to cover domestic needs.

Self-sufficiency decreased to 100 percent in 1990 (table 2), but tiny amounts of specialty rice are imported and converted into other products, such as Awamori (an alcoholic drink) and rice cakes.

Table 2

Japan Has Become Less Self-Sufficient in the Production of Many Foods

Food item	1955	1970	1990
		Percent [1]	
Cereals	87.7	48.1	29.9
Rice	109.8	106.2	100.1
Wheat	40.6	9.1	15.2
Barley[2]	61.6	28.4	12.5
Naked barley	87.3	73.5	92.0
Corn[2]	51.3	.6	0
Meats	99.7	89.3	69.5
Beef and veal[3,4]	99.3	89.5	50.6
Pork[3]	100.0	97.9	74.2
Chicken[3]	100.0	97.7	82.3
Whale	100.0	100.0	66.7
Other meats	100.0	8.3	3.1
Fish and shellfish	106.6	101.9	78.9
Eggs	100.3	97.2	98.0
Milk and dairy products	89.9	89.4	77.5
Fruit	103.7	83.9	63.1
Vegetables	100.0	99.4	91.0
Potatoes	100.5	100.1	92.5
Starches[3]	117.8	96.5	95.0
Pulses	51.0	13.0	7.8
Sugar[5]	0	2.9	34.0
Fats and oils[6]	79.4	81.9	87.0

Notes: [1]Self-sufficiency rate is the proportion of domestic production to total consumption. [2]Includes both food and feed. [3]Relies partially on imported feed grains and/or oilseeds, which reduces self-sufficiency rates. [4]Does not include imported beef diaphragm. [5]Japan shifted from importing refined sugar to importing totally raw sugar. [6]Higher rates reflect increased oil-crushing capacity and use.

Japan has depended on imports for wheat supplies, despite policies making wheat production very profitable. With self-sufficiency increasing to only 15 percent by 1990 (the rate reached a low of 4 percent in 1973), Japan was the fourth largest wheat importer when it bought 5.5 million tons in 1990. Most barley and corn were also imported, due to domestic production declining to only 323,000 and 1,000 tons, respectively, in 1990.

Self-sufficiency in livestock products declined in 1955-90, as production lagged behind increasing demand. In 1955, Japan was self-sufficient in pork, chicken, whale, other meats, and eggs; 99.3 percent self-sufficient in beef; and 90 percent self-sufficient in milk and dairy products. But by 1990, Japan imported 50 percent of its beef supply, 25 percent of pork, 18 percent of chicken, 22 percent of milk and dairy products, and 2 percent of eggs. Domestic production of livestock products has increased at a slower rate since the mid-1980's, due to high production costs in the Japanese livestock sector and reduced barriers to trade.

Growth Rates Varied Between Foods

Growth rates for per capita consumption and daily caloric intakes reported in this article reflect rates during 1955-90. However, some rates varied within that period. The table below reports average annual growth rates of various food groups over four periods: 1955-60, 1960-70, 1970-80, and 1980-90.

Daily caloric intake in Japan increased at an average annual rate of 0.44 percent over the 35-year period. Most gains, however, occurred in the 1960's. Caloric intake stagnated during the 1970's, then increased annually by 0.36 percent during the 1980's.

Rice

Rice consumption declined at an average annual rate of 1.69 percent during 1955-90. After increasing 0.63 percent in 1955-60, average annual per capita rice consumption fell in the remaining three periods.

Wheat

Wheat consumption increased at an annual rate of 0.08 percent over the 35-year period. Wheat consumption grew most rapidly during 1960-70, but declined at an annual rate of 0.14 percent during 1980-90.

Cereals

Consumption of other cereals, such as barley and corn, declined on average 6.8 percent per year in 1955-90, with a larger decrease from 1955 to 1970 and a small increase in 1980-90 due to rising corn consumption.

Meat and Poultry

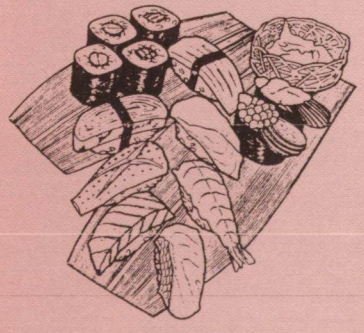
Red meat and poultry consumption grew 6.08 percent annually over the 35-year period. Chicken had the strongest growth, with a annual rate of 11 percent, followed by pork at 7.26, beef at 5.11 percent, and other meat at 4.2 percent. Growth rates for beef and veal increased steadily over the four periods, while growth in chicken and pork consumption slowed during the 1970's and 1980's. These results could mean that Japanese beef consumption is picking up, while that of pork and chicken will grow more slowly toward the end of this decade.

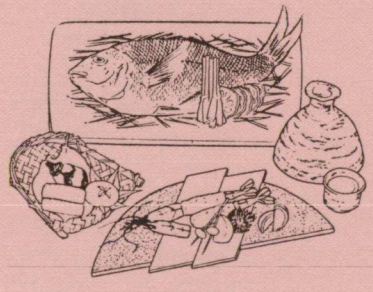
Fish and Shellfish

Per capita consumption of fish and shellfish grew slowly, at an average annual rate of 1.06 during 1955-90. The strongest rise in fish consumption was in the 1950's at a 1.79-percent rate, before slowing to less than half that rate between 1960-80. Consumption grew nearly 1 percent per year in the 1980's.

Milk and Dairy, Fats and Oils

Consumption of milk and dairy products, as well as fats and oils, grew at annual rates of over 4 percent during 1955-90. The strongest growth occurred in 1955-60, with slower, steady growth through 1990.





Japan's self-sufficiency in fish and shellfish also declined—from 107 percent in 1955 to 79 percent in 1990. In value terms, fish and shellfish imports accounted for $9.58 billion, which exceeded both the import value of cereals ($4.1 billion) and of meat and processed meat products ($4.83 billion).

Japan is no longer self-sufficient in fruit. The self-sufficiency rate dropped from over 100 percent in 1955 to 63 percent in 1990, reflect-

Fruit and Vegetables

Per capita consumption of fruit and vegetables grew at annual rates of 2.33 and 0.7 percent, respectively, during 1955-90. However, growth was flat or slightly negative during the 1970's and 1980's along with shifts from lower priced bulky items to more expensive, high-quality exotic items.

Sugar

Sugar consumption increased in the 1960's, but fell in the 1970's and 1980's.

Pulses

Per capita consumption of pulses remained unchanged for the overall period 1955-90, but grew at a rate of 4.36 percent from 1955-60.

Daily Caloric Intake Stagnated During the 1970's, Then Increased Slightly in the 1980's

Food supply	Average change per capita per year				
	1955-60	1960-70	1970-80	1980-90	1955-90
			Percent		
Cereals:	-0.71	-1.62	-1.32	-0.87	-1.34
Rice	.63	-2.33	-1.93	-1.22	-1.69
Wheat	1.07	2.40	.44	-.14	.08
Other cereals	-14.9	-9.90	-2.52	.55	-6.80
Meats	8.60	8.49	4.90	2.73	6.08
Beef and veal	1.68	3.67	4.79	5.23	5.11
Pork	10.80	11.66	5.78	2.34	7.26
Chicken	4.11	19.5	7.12	3.32	11.05
Whale	12.30	-3.59	-12.90	-14.85	-6.80
Other meats	16.57	11.2	1.76	-4.95	4.20
Fish and shellfish	1.79	.79	.71	.99	1.06
Eggs	6.69	9.47	-.06	1.55	4.32
Milk and dairy products	11.88	7.91	2.87	2.39	4.78
Fruit	10.04	5.93	.01	-.24	2.33
Vegetables	3.15	2.11	-.20	-.33	.66
Potatoes	-6.86	-7.24	1.00	1.88	-2.14
Starches	6.83	2.24	3.28	3.08	3.20
Pulses	4.36	.27	-2.22	1.39	-.09
Sugar	3.56	5.39	-1.18	-.80	1.51
Fats and oils	8.85	7.36	3.17	1.08	4.65

ing consumers' growing appetite for exotic, foreign fruit.

Self-sufficiency in vegetables, potatoes, starches, and sugar dropped slightly from over 100 to over 90 percent in 1955-90, while that of pulses went down from 51 percent to only 7.8 percent during the same period. It is cheaper to import pulses than to produce them locally.

Fats and oils is the only group to increase in self-sufficiency—from 79.4 percent in 1955 to 87 percent

in 1990. This is mainly due to rapid growth in its oil-crushing industry, which must rely on imported oilseeds for supplies.

Imports From United States Take Up the Slack

Japan is the second largest importer of agricultural products, behind Germany, accounting for 8.1 percent of total world trade in agricultural products in 1990.

Japan is also the largest market for many U.S. agricultural products, including cereals, soybeans, meats, feedstuffs, cotton, tobacco, citrus fruit, vegetables, and fish and shellfish. Japan's agricultural imports totaled $28.7 billion in 1990, 38 percent of which came from the United States.

The United States exported nearly 20 million tons of cereals to Japan in 1990. With 73 percent of this market, the United States is easily the largest cereal exporter to Japan (table 3).

Of the 1.3 million tons of imported red meat and poultry, the United States supplied 80 percent of Japan's edible offals, 43 percent of beef and veal, 34 percent of poultry, and 13 percent of pork. In 1990, Japan imported 2.2 million tons of fish and shellfish, 23 percent of which came from the United States.

Fruit imports totaled 3.4 million tons in 1990, with the U.S. share averaging 30 percent. The U.S. share is much higher for particular fruit—98 percent for oranges, 96 percent for lemons and grapefruit, and 75 percent for dried fruit.

Likewise, vegetable imports went up from 12,000 tons to over 1.5 million tons, with the U.S. share around 23 percent.

The United States supplied 18 percent of the 572,000 tons of fats and oils Japan imported in 1990 and 74 percent of the 4.7 million tons of soybeans.

The United States also supplied a third of all potatoes exported to Japan, amounting to 128,300 tons. Over 81 percent of these were frozen french fries.

Table 3

Japan Has Become a Large Market for U.S. Food Products

Agricultural product	1990 imports	U.S. Share
	1,000 tons	*Percent*
Cereals		
Corn	16,008	88
Sorghum	3,763	75
Barley	1,272	0
Soybeans	4,681	74
Wheat	5,474	56
Meats		
Beef and veal	376	43
Pork	343	13
Chicken	301	34
Edible offals	108	80
Other	107	3
Prepared or preserved meat	54	56
Fish and shellfish	2,207	23
Eggs	17	28
Milk and dairy products	2,237	8
Fruit	2,979	30
Citrus fruit	406	97
Vegetables	1,551	23
Potatoes	399	32
Sugar	1,691	0
Fats and oils	572	18

Source: United Nations trade data, 1991.

References

Bureau of Agricultural Economics. *Japanese Agricultural Policies: An Overview*, Occasional Paper No. 98. Australian Government Publishing Service, Canberra, 1987.

Coyle, William T. *Japan's Feed-Livestock Economy—Prospects for the 1980's*, FAER-177. Econ. Res. Serv., U.S. Dept. Agr., Feb. 1983.

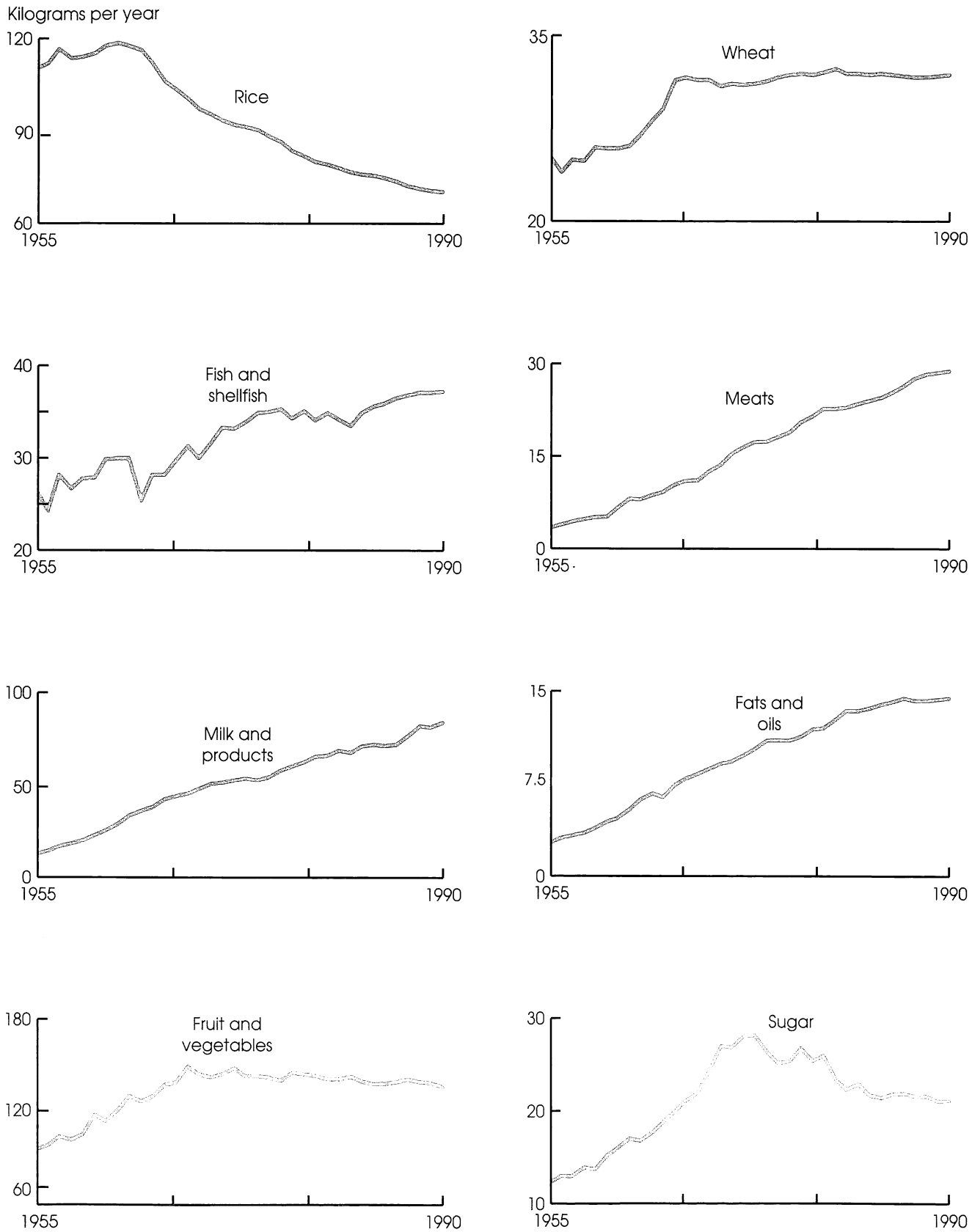
Government of Japan. *Statistical Yearbook of the Ministry of Agriculture, Forestry and Fisheries*, 1990 and previous issues.

Taha, Fawzi A. "Environmental Constraints in East and Southeast Asia: Potential for Changing Patterns of Agricultural Production and Trade," *Pacific Rim Agriculture and Trade Situation and Outlook*, RS-92-2. Econ. Res. Serv., U.S. Dept. Agr., Sept. 1992.

United Nations. "U.N. Trade data by SITC," Trade Data Summary, 1990 and previous issues.

Japanese Food Consumption...At a Glance

Traditional Japanese Diet Changing Fast



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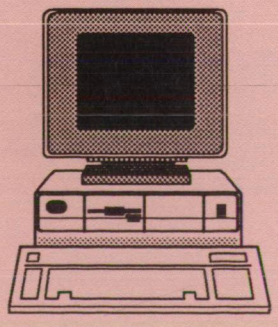

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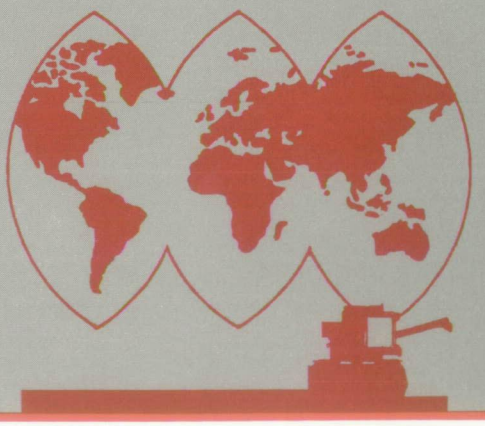

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