Multinational Structures and Strategies of U.S. Food Firms

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July 1989

This paper was prepared for the summer meetings of the American Agricultural Economics Associations, Baton Rouge, LA, July 31, 1989. We thank Naamen Siegle for assistance in data collection and preparation. The views expressed herein are not necessarily those of the U.S. Department of Agriculture.

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Introduction

The focus of our report should be clear from our title: we intend to analyze strategic mechanisms used by U.S. food manufacturers in an evolving world of global rivalry among firms from many nations. Several sources of evidence point to a growing geographic scope of markets, along with growing interdependence in national food industries. First, transportation costs between countries continue to decline, due to ongoing productivity growth in air and water transportation and communications (McFarland 1985). Second, many U.S. industries faced dramatic increases in import competition in the last 20 years (Eichengreen 1988), while foreign investment links into and out of the U.S. continue to expand (Lipsey 1988). Finally, trade in processed foods among developed economies continues to expand (OECD 1987).

Growing interdependence presents new profit opportunities for food firms, especially those who can effectively transfer existing competitive advantages to new markets. Growing trade, and increased investment links, may also lead to increased competition in domestic product and capital markets and an erosion of existing competitive advantages held by domestic firms and employees. Because increasing interdependence creates losers as well as winners, and because government policies may affect the size of any net gains as well as the distribution of gains, analysts and policymakers require detailed information about the sources

and effects of growing trade and investment links.

With increasing interdependence among national food sectors, firms will find themselves competing in many countries. We concentrate on those several strategies by which firms effect sales in a foreign market: licensing of a foreign manufacturer, exports from the U.S., direct investment in the foreign country, or investment in a third country with export sales to the foreign market. In many ways, U.S. food firms have made a distinctive set of choices among modes of foreign entry, especially when compared to other U.S. corporations. A company's choice among modes of foreign entry is not arbitrary; we argue that a set of product, market, firm, and government characteristics typically drive those choices. We limit our focus to sales strategies, and do not explicitly consider methods of initiating direct investment, such as the choice between acquisition of an existing firm and the construction of new facilities. Acquisitions account for almost all initial direct investment in the U.S. food industry (Pagoulatos, 1983) while Connor (1983) asserts that acquisitions account for about half of direct investment by U.S. food parents.

We highlight the particular structures and strategies of U.S. food manufacturers through the use of secondary sources and two principal databases. One is the Benchmark Survey of U.S. Direct Investment Abroad, as reported by the Bureau of Economic Analysis (BEA) of the Department of Commerce for 1966, 1977, and 1982 (1987 is forthcoming). That source provides great detail for comparisons across industries and countries and over the recent past, but

provides little disaggregated detail for firms or industries within the food sector. The BEA also produces an annual survey, which organizes data by industry of affiliate, rather than industry of parent, and reports only limited information on the overall activities of parents.[1] We'll usually refer to Benchmark Survey data on food parents, but at times will use the more timely annual food affiliate data.

The BEA data are highly aggregated, and usually refer to the food industry as a whole. We complement the BEA surveys with the results of an Economic Research Service (ERS) survey of the foreign activities of 62 leading food processors. We use the data to describe the particular strategies chosen by U.S. firms and, using applications of recent theory and comparisons across firms and industries and over time, to try to explain why such strategies are chosen.

Exports and Direct Investment Patterns - Aggregate Data

What methods do U.S. firms typically choose for foreign sales? Have their choices changed over time? Several strong patterns stand out in the BEA data.

o Major U.S. food manufacturers do relatively little exporting. Food parents in the BEA survey exported about 3.6% of domestic production in 1982, compared to an average of 11.1% for all of U.S. manufacturing. U.S. food manufacturers are also far less export oriented than food firms from other OECD countries (table 1, which reports export data for all food manufacturers, not just multinationals). The OECD reports little trend, and some modest cyclical fluctuations, in U.S. processed food import

and export shares between 1970 and 1985. Of course, the size and relative isolation of the U.S. market accounts for the domestic orientation of most U.S. producers. By contrast, countries in the European Economic Community (EC), relatively small and in close proximity to one another, have a large and rapidly growing volume of intra EC trade in processed food products.

o U.S. food manufacturers nevertheless have extensive overseas interests, through direct investment. Foreign affiliates accounted for 25.5% of the worldwide 1982 sales of U.S. food manufacturing parents with foreign affiliates, compared to 26% for all U.S. multinational manufacturing parents.

o The geographic pattern of food industry foreign direct investment has changed sharply in the last twenty years (table 2). Here, we use data organized by industry of affiliate, so that we can use the most recent evidence. In 1966, Canadian and Latin American affiliates accounted for just over one half of the sales of food industry affiliates; by 1986 the combined share was 28 percent. Increasing European sales (from 40 to 61 percent of food industry affiliate sales) accounted for almost all of the decline in share in the Americas. A weaker shift in the same direction has occurred among other manufacturing affiliates, whose European share rose from 46.1% in 1966 to 56.4% in 1986. Major U.S. food companies began investing in Canada and Latin America around the turn of the century. Horst (1974), using asset data, shows that Canada and Latin America accounted for at least 70% of all foreign food affiliate assets in each of

his 5 sample years between 1929 and 1957. The European share, which fell during the widespread destruction of the second World War, didn't begin to accelerate until the early 1960's. Thus, the dominant current European focus is a relatively recent phenomenon.

o Trade with affiliates accounts for an important share of nonfood manufacturing exports and imports. U.S. multinational manufacturers export about 11.2% of their domestic production, and about 36% of those exports are directed to their foreign affiliates, according to the Benchmark Survey. Foreign affiliates ship about 56% of U.S. multinational manufacturers' imports. But food manufacturers maintain far weaker trade links with their own affiliates; food manufacturing parents direct only 16% of their $4.49 billion in exports to foreign affiliates, and their affiliates provide only 21% of the $3.15 billion in food parent imports.

Food manufacturers' affiliates focus on local sales; the Benchmark Survey shows that 82% of food affiliate sales are in the country in which the affiliate is located, compared to 66% for all of U.S. based multinational manufacturers.

o Breweries tend to license use of their brands to foreign producers, rather than export or invest overseas. However, it's difficult to gauge the importance of licensing. The BEA survey reports licensing income ($151 million paid to food industry parents in 1982), which may be underestimated because firms may report net licensing income (receipts minus payments) and because breweries with no foreign affiliates are not in the BEA survey.

These broad distinctions between food manufacturers and other U.S. multinationals are not new, and they are not newly reported. The distinctions may be related to underlying product characteristics, and in table 3 we relate several measures of foreign involvement to two important industry characteristics, the ratio of research and development spending to sales (R&D) and the ratio of advertising to sales (AD).[2] The data are for the 32 rather broadly defined manufacturing industries in the 1982 BEA survey.[3]

The two measures account for an important percentage of the variation in measures of foreign involvement across industries. Advertising and R&D have positive, statistically significant, and relatively large impacts on our measure of foreign direct investment, the share of foreign affiliate sales in the total consolidated (parent plus affiliate) sales of parents (equation 1). Compared to other firms, parents from advertising intensive industries do significantly less exporting from the U.S. (equation 2). The foreign affiliates of parents from advertising intensive industries are also significantly less export oriented than other affiliates (equation 3). The first 3 results foreshadow the evidence in equation 4: advertising intensive firms are more likely to effect sales to foreign countries through direct investment, rather than exports, when compared to other parents. Assume that an industry with an advertising intensity of .5% makes a predicted one half of its foreign sales through affiliates (and one half through exports). Then an industry with an advertising intensity of 3%, and the same R&D intensity, is predicted to make 71% of foreign sales

through direct investment. Finally, parents from R&D intensive industries have extensive foreign sales (exports and direct investment) as a share of the total, while advertising intensity has only a modest effect on total foreign sales.

Our data reported so far indicate that food company orientation toward direct investment rather than exports is not an anomaly; food industries are not outliers in the regression, and the general results appear to be fairly consistent over time. Lall (1980) showed a similar pattern for 35 broadly defined industries in 1970; Sleuwagen (1986) confirmed Lall's results, using 26 industries and some slightly different indicators of R&D and advertising, for the 1977 BEA Benchmark Survey. A United Nations report (1988) confirms a relatively heavy emphasis on foreign investment among the world's largest multinational food processors. Kravis and Lipsey (1989) use the 1982 Benchmark Survey and United Nations data on world exports to show that U.S. multinational firms are concentrated in industries that rely heavily on R&D or advertising. Broad measures of the extent of industry product differentiation seem to be consistently linked with the extent and methods of foreign involvement by U.S. firms.[4]

Theories of Direct Investment

Government policies often influence the choice between exporting and direct investment. For example, high tariffs on imports may attract direct investment instead, and an uncertain climate for capital recovery may promote joint

ventures with local officials. But there also seem to be systematic industry and firm specific influences at work, and there is by now a fairly large theoretical literature that provides an underpinning for those observed effects of R&D and advertising (Caves 1982; Williamson, 1985). That literature builds on the analysis of transactions and views the firm as a substitute for various product and input markets in organizing the exchange of goods and services.

The entrant to a new country appears at first glance to bear some rather striking disadvantages. Native producers have greater experience, established distribution systems, and have likely realized any potential scale economies. If anything, such obstacles are reinforced by the cultural and political disadvantages facing a foreign entrant. Of course, elementary trade theory provides us with a source of potential cost advantages for a foreign producer, comparative advantages specific to the home country of the entrant. The firm may also possess some specific advantages, such as production or marketing innovations, or superior managerial skills. In each case however, there's an alternative to expansion of the firm: export of products or services to the foreign country via the market. Obviously, classic sources of comparative advantage can drive exports, and it's not immediately obvious why they should necessarily drive expansion of the firm via direct investment.

Contemporary theories of the firm emphasize the costs of using markets, and find that a focus on market failure can prove useful in understanding direct investment.

R&D spending fits into the analysis in several ways.

The new knowledge underlying an innovation may be transferable to production in a different country, but transfer of information is far from costless. A set of familiar appropriability problems attend the sale of information in markets.[5] Transfer of information embodied in a new technology may require a considerable investment in human, organizational, and physical capital, by each party to the transaction, in order to effectively adapt the innovation. Such investments are often "sunk" (specific to the transaction and the product) and reduce the number of potential buyers, ex post, to one. That is, the innovating firm, in attempting to export a complex new product to a new country, may create a monopsony buyer of the product (the only local organization capable of implementing the technology). Bilateral monopoly can easily lead to continuous antagonism over division of the potentially large rents from the product (Williamson 1985). Direct investment allows the innovating firm to appropriate the returns from the innovation.

In the above example, investments in R&D created a rent-yielding asset that could not be immediately duplicated by rivals. Similar processes occur in advertising intensive industries. A firm creates a differentiated product that cannot be quickly duplicated; the barriers to entry may be due to secrecy, to scale economies in production of the good, or to intensive advertising. In some firms, the marketing organization itself (including product development, manufacturing, and retail distribution) may be the source of differential advantage to the firm, and it may be quite

difficult to replicate that organization in another firm. In short, the combination of brands and organization can be a rent-yielding asset to the firm.

Successful brands and marketing organizations may be able to replicate that success in other countries, and the probability of success should be higher in countries with similar cultures and levels of economic development. Successful U.S. marketers of branded food products have developed an expertise in selling mass market items to a relatively affluent society, with a heavy emphasis on television and print advertising. If that success carries to other nations, it most likely carries to other relatively affluent societies. The convergence of incomes and tastes, and the growth of mass marketing distribution methods, may account for the relative shift of U.S. direct investment to Europe (table 2), and may lead to investment in rapidly growing Asian economies.

Successful brands may provide a basis for foreign sales, but the firm still must decide on the location of production. Transportation costs rarely account for important shares of the final price of differentiated consumer products. If production is subject to scale economies and the market is limited, the least cost arrangement is likely to be production at home and export to the foreign country. Thus export is likely to be favored for small markets (often the case for initial sales) and where scale economies in production are important. The domestic success of branded, heavily advertised food products is often based on close coordination between sales and production organizations and

on continuing contact among the sales organization, retail distributors, and consumers. While western industrialized countries may have similar cultures, continuing distinct differences of culture and retail organization require a marketing organization to be country specific. As a result, for relatively large markets for differentiated consumer products, we are likely to see direct investment rather than trade.

To summarize, in contemporary views direct investment results from the attempts by firms to gain returns on firm specific, rent-yielding assets. Such assets are prevalent in markets for differentiated products, in which rival firms may each have some degree of market power, and in which market exchanges of the assets may dilute rents. In empirical work, differentiated product industries are often characterized by intensive advertising, heavy R&D investments, or both.

Food Industry Structures and Strategies - the ERS Data

The analysis so far has been highly aggregated, and this characteristic seems to us to be a weakness of much theoretical and empirical work in the area. Many policy issues, as well as many of the interesting empirical puzzles, revolve around narrowly defined products - imports of processed hams, or frozen concentrated orange juice, or the decision to build a seafood plant in California or Indonesia. But the available empirical data (such as the BEA surveys) tend to be highly aggregated. We've attempted to generate some more detailed food industry data, at the level of the individual firm. ERS surveyed the largest food processing

firms, as reported in Food Engineering. We received useful information from 62 firms, whose total 1987 sales from U.S. food processing operations amounted to approximately $124 billion. By way of reference, the 1986 BEA survey reports U.S. food processing sales of $129 billion by its sample of food industry parents, which includes any U.S. firm with a foreign affiliate (or almost all of the largest food companies). Thirty one of the 62 firms in the ERS sample had foreign affiliates, and affiliate food processing sales were $31.1 billion in 1987. The 1987 BEA survey reports total sales by food affiliates at $41.2 billion. Our sample includes only U.S. owned firms and thus excludes the growing number of foreign owned firms in the U.S., such as Carnation or T. J. Lipton. Some large privately held firms, such as Cargill, would not participate in the survey. The survey does cover all of the major publically held, U.S. owned, branded product manufacturers as well as a number of smaller publicly held, private, or cooperatively owned food processors.

The firms provided us with data on employment, number of establishments and sales for their food processing establishments in the U.S. and worldwide, exports from U.S. food processing establishments, and total worldwide food processing sales. We report some aggregated data in table 4, for the entire 62 firm sample as well as for a two way classification ordered by food product advertising expenditures, obtained from the annual data on advertising expenditures by company and brand in 6 media categories reported in Leading National Advertisers (LNA). We split the sample into 35 heavy advertisers (LNA advertising

expenditures were at least 1% of U.S. food sales) and 27 light advertisers (less than 1% of sales).

Consider the complete sample first. The 62 firms directly exported about 2.8% of 1987 production from U.S. plants. Note that the unweighted mean, 3.2%, exceeds the sales weighted mean, indicating that smaller processors had higher export propensities. Other manufacturing industries do not show this pattern.[6]

Twenty percent of the sample's worldwide food sales came from foreign affiliates (again, the sample composition differs from the BEA sample). Larger firms had greater direct investment (the weighted mean substantially exceeded the unweighted) and a relatively small number of firms dominated the results (for half of sample firms, direct investment accounted for no more than 3.5% of worldwide sales). Foreign affiliate food sales exceeded $1 billion for 10 firms.

Exports account for a small share of total food sales to foreigners by major U.S. processors (10.0%). But notice that the unweighted mean (48.2%) and the median (38%) far exceeded the weighted mean. Exports are a likely foreign sales strategy for firms with small foreign sales, but unimportant for the largest firms with the greatest foreign exposure.

Now consider the evidence when we split the sample according to advertising intensity. Light advertisers export more (5.7% of U.S. food sales, compared to 1.4% for heavy advertisers). Light advertisers account for 2/3 of sample food exports, and exports account for 44% of foreign sales by light advertisers. By contrast, heavy advertisers orient

their strategy strongly toward direct investment, which accounts for 96% of their total foreign sales.[7]

Advertising does not have a strict causal connection to strategic choices, but rather indicates a set of industry characteristics revolving around product differentiation. Exports are concentrated in firms such as Archer Daniels Midland, Iowa Beef Processors, Conagra, Riceland Foods, and General Foods (coffee), whose products are relatively homogeneous and subject to an initial stage of processing: meats, oils, rice, flour, and coffee. These commodities require relatively little marketing support and hence are sold in market transactions to foreign wholesaling and processing firms. Direct investment seems to be most important for large firms such as Coca-Cola, CPC International, RJR Nabisco, Kraft, Heinz, and General Foods (noncoffee brands), that sell a diversified range of branded consumer products through retail outlets. Competitive advantages for such firms arise from their marketing organizations, and from close connections among advertising and promotion, retail distribution, and product development and manufacturing. These firms coordinate foreign sales through the firm's organization, and therefore via direct investment, rather than through markets via exports.

A small number of sample firms dominate foreign sales activity. The four largest sample firms account for 23% of U.S. food shipments by sample firms, but the four largest direct investors account for 46% of foreign affiliate food sales, and the four largest exporters account for 58% of sample food exports. The relatively high concentration of

foreign sales activity suggests either scale economies or nonreplicable firm specific skills attached to successful foreign marketing.

Retrospect and Prospect

Horst (1974) studied foreign investment by U.S. food processors in a period covering 1890 to 1970. Meat packers and condensed milk manufacturers, extending then new technologies to other countries, initiated successful large scale foreign investment. Over time, knowledge of the new techniques diffused widely, leaving the firms with no permanent competitive advantages; for example, the meat packers all divested their overseas operations by 1960. Firms from advertising intensive industries, who successfully marketed differentiated consumer products, carried out later waves of foreign investment aimed at countries with expanding middle classes, centralized distribution systems, and extensive advertising media. In 1970, advertising was strongly associated with the extent of foreign investment, although there were many anomalies, in the form of large consumer products companies with very limited overseas interests (Horst 1974).

Horst's trends have intensified since 1970, exemplified by the increased emphasis on investment in Europe (table 2). Three developments are likely to affect the pace of direct investment in food processing in the near future. First, as their economies come to resemble ours, European firms have sharply increased investment in the U.S. (Lipsey, 1988; MacDonald and Weimer, 1985). Second, as trade barriers among

European countries fall in 1992, we will see an expanded, European market for many products (Emerson, et al., 1988). We should see a restructuring of the European food industry toward multinational (European) brands and bigger plants, and the shifts may attract expansion by existing multinationals, including U.S. firms, in Europe. Finally, as the economies of the Pacific rim continue to grow, and as Pacific rim food consumption shifts to more highly processed and differentiated products, we may likely see increasing investment links, in each direction, between food firms in the U.S. and the Pacific rim.

Conclusion

According to unpublished statistics provided by the Foreign Agricultural Service of USDA, the United States accounts for 21% of world exports in bulk agricultural products, but only 5% of world exports of consumer oriented processed food products. Moreover, since the late 1970's, the U.S. has been running relatively large trade deficits, of $5 to $6 billion annually, in consumer oriented processed food products while the European community has shifted from trade deficits to trade surpluses, of around $2 billion annually, in those products.

A variety of industry observers and policymakers sense that processed food exports can be expanded, and see in that potential expansion a source of increased demand for upstream agricultural commodities, leading to increased farm incomes.

The relatively low export share does not imply that major U.S. food manufacturers have no international interests

or activities. Rather, U.S. firms pursue extensive forms of direct investment in the food industries of foreign countries. The overseas affiliates sometimes directly displace exports, and maintain some small trade linkages with parents, but in general they have only modest trade effects. At present, the advantages that U.S. corporations hold in the food industries of the world are not generally based on commodities produced in the U.S., and therefore on immobile factors of production such as land or skilled production labor, but rather on more mobile factors such as information, financial capital, and managerial labor. By and large they have not found exports to be a relatively effective foreign sales strategy.

Some U.S. food processors have chosen export strategies over direct investment, and appear to have been successful. We need more detailed information on why a few firms seem to succeed at the export strategy, and why several Euroepan firms have developed successful export strategies to the U.S. It appears to us, however, that any large expansion in processed food exports from the U.S. requires the development of either differentiated commodities (not differentiated products based on generic commodities) or a set of marketing institutions, specific to U.S. products and at least equivalent to the institutions of direct investment, that will induce U.S. multinationals to choose an export strategy.

Table 1: Trade in Processed Food in OECD Countries

Country	Import Penetration*				Export Shares*		
	1970	1975	1985		1970	1975	1985
	Percentages						
Australia	5.3	5.4	6.9	..	38.0	37.3	24.0
Austria	21.0	19.0	12.2	..	7.0	11.5	7.6
Belgium/Lux.	34.2	40.2	65.3	..	30.4	39.3	68.7
Canada	8.7	11.0	8.2	..	7.3	5.5	7.9
Denmark	25.0	23.0	18.9	..	48.0	53.0	41.8
Finland	10.6	10.5	8.2	..	4.7	4.4	5.2
France	10.2	11.5	15.0	..	7.9	11.1	13.4
Germany	21.2	21.9	27.3	..	7.2	13.4	21.5
Greece	28.0	16.0	25.5	..	18.0	15.0	16.4
Italy	19.7	25.9	27.4	..	6.2	9.0	12.4
Japan	6.8	8.6	5.8	..	3.4	1.4	1.0
Netherlands	14.0	26.5	39.7	..	40.6	44.5	55.1
New Zealand	11.0	13.0	12.2	..	62.0	57.0	66.1
Norway	12.0	11.5	10.6	..	17.2	15.6	13.0
Spain	16.0	16.0	7.1	..	16.0	12.0	7.9
Sweden	14.1	15.1	14.8	..	4.2	5.0	7.8
United Kingdom	20.5	23.8	21.8	..	3.9	7.3	7.9
United States	4.8	4.6	4.8	..	2.9	3.4	3.1

*Import penetration: imports as a share of apparent consumption (production less exports plus imports); export shares: exports as a share of production.

Source: Organization for Economic Cooperation and Development (1987).

Table 2: Sales of Food Industry Affiliates of U.S. Parents and Sales Share by Region, Selected Years

Year	Food Affiliate Sales	Regional Shares of Sales			
		Canada	Latin America	Europe	Rest of World
	million $	- percent -			
1966	5339	30.3	20.5	39.5	9.6
1977	21756	25.2	17.8	46.1	10.9
1986	37599	14.9	13.1	61.0	11.0

Sources: 1966-U.S. Direct Invest Abroad 1966. Part II: Investment Position, Financial and Operating Data, Bureau of Economic Analysis (January 1972); 1977-U.S. Direct Investment Abroad 1977, Bureau of Economic Analysis (April 1981); 1986-U.S. Direct Investment Abroad: Operations of U.S. Parent Companies and Their Foreign Affiliates, Preliminary 1986 Estimates, Bureau of Economic Analysis (June 1988).

Table 3: Effects of R&D and Advertising on Foreign Activities by U.S. Manufacturing Firms

	Foreign Activity	Intercept	RD	AD	R^2	F
(1)	Affiliate Sales / Consolidated Parent Sales	-1.493 (18.86)	.341 (4.57)	.233 (3.66)	.51	16.87
(2)	Export Sales / Consolidated Parent Sales	-2.929 (22.47)	.126 (.573)	-.338 (3.15)	.22	5.16
(3)	Affiliate Exports / Total Affiliate Sales	-.776 (8.55)	.115 (1.35)	-.195 (2.66)	.19	4.52
(4)	Affiliate Sales / Export & Affiliate Sales	1.501 (10.13)	.200 (1.43)	.510 (4.28)	.38	10.06
(5)	Affiliate & Export Sales / Consolidated Parent Sales	-1.174 (16.85)	.333 (5.08)	.105 (1.87)	.47	14.47

t statistics are in parentheses.

Note: The independent variables are transformed to natural logarithms, and the foreign activity shares, p_i, are transformed to a logistic form, $\log (p/i-p_i)$, for regression. The logistic form keeps predicted values in a range of zero to one and removes heteroscedasticity.

Data Sources: Dependent variables are calculated from data in U.S. Bureau of Economic Analysis, U.S. Direct Investment Abroad: 1983 Benchmark Survey Data (1985). Independent variables are calculated from 1977 Federal Trade Commission Line of Business data.

Table 4: Foreign Operations of 62 Leading U.S. Food Processors, 1987

Foreign Sales Measures	All Firms (n=62)	Heavy Advertisers (n=35)	Light Advertisers (n=27)
		- percent -	
1) Food Exports			
U.S. Food Shipments			
- unweighted mean	3.1	1.9	4.7
- median	1.7	1.5	2.3
- mean, weighted by U.S. shipments	2.8	1.4	5.7
2) Foreign Affiliate Food Sales			
Worldwide Food Sales			
- unweighted mean	12.1	18.0	4.4
- median	3.5	15.7	0
- mean, weighted by worldwide food sales	20.1	25.2	6.8
3) Exports			
Total Foreign Sales			
- unweighted mean	48.2	27.9	73.9
- median	38.0	4.9	100
- mean, weighted by total foreign sales	10.0	4.0	44.0
		- Billions -	
4) Firm Characteristics			
Mean U.S. Food Sales	2.00	2.39	1.49
Total Exports	3.45	1.17	2.28
Total Affiliate Sales	31.12	28.22	2.90

Source: Unpublished survey data, Economic Research Service, U.S. Department of Agriculture.

Footnotes

[1]An affiliate is a business enterprise located in a foreign country that is owned by another business enterprise (the parent) located in the United States. We use data on majority owned affiliates, whose U.S. parent own at least 50% of the voting stock. The industry of a parent (or affiliate) is that SIC designation that accounts for the largest share of parent sales. Food parents may have nonfood sales, and nonfood parents may own food industry affiliates. Despite this potential problem presented by diversification, the two surveys still capture a large core of the same activities. Food industry parents usually invest abroad in food industry affiliates (food affiliates account for 73% of food parents sales from all foreign affiliates). And, most food affiliates were owned by food industry parents (86% of all food affiliates sales).

[2]The measures of foreign involvement are all derived from the 1982 BEA Benchmark survey. That report also lists R&D spending by parents, but does not list advertising expenditures. We used R&D and advertising measures from the same source, the 1977 Line of Business statistics reported by the Federal Trade Commission. FTC Lines of Business are more narrowly defined than BEA industries, so we could aggregate to the BEA level. The difference in sample years (1982 versus 1977) should not be important, since advertising and R&D intensities tend to be rather stable over time.

[3]For example, the BEA survey places food firms in 3 industries: grain mill and bakery products, beverages, and other food products.

[4]Other studies of foreign strategies find associations with advertising and R&D. For example, Gatignon and Anderson (1988) investigate the extent of ownership control (wholly owned, majority stockholder, equal partner, minority partner) exercised by U.S. parents over affiliates. Advertising intensity had a large, positive, and statistically significant impact on the likelihood of 100% ownership. Franko's (1987) case studies analyse the extent of minority and equal partner participation in direct investment in developing countries, and finds that advertising intensive food firms are far less likely to participate in such relations; those firms show a clear preference for wholly owned affiliates.

[5]The seller must reveal the content of the information, in order that the buyer can affirm its value. However, revelation of content, in the absence of well defined property rights to the information, eliminates the buyer's incentive to pay. Markets in pure information are subject to failure, and the firm may embody the information in a tangible product, with well defined property rights, in order to gain a return on the information (Caves 1982).

[6]These are direct exports by the company. There will also be some indirect exports, by domestic third parties who buy from the U.S. producer and then export. Our specific interest lies in the marketing strategies chosen by manufacturers, and we do not consider those third party actions.
The 1982 BEA survey reports that exports were 3.6% of U.S. production, but that sample covers firms with foreign affiliates, and therefore some degree of foreign orientation, while ours covers the largest U.S. food processors. Our data refer to processed food only, while the BEA data cover all sales of parents whose major activity is food processing (including sales of unprocessed agricultural products, a major U.S. export). The OECD estimated export share for all U.S. food manufacturers in 1985 was 3.1% (table 1). The OECD sample is more likely to include privately held grain processors, such as Cargill, who did not participate in our survey and are important exporters. The Census Bureau reports that U.S. food establishments exported 4% of shipments in 1987. The Census survey includes foreign owned plants, plants of Cargill, and the plants of many smaller producers.

[7]We can summarize differing foreign sales strategies among sample firms with the following regression:

$$\underset{}{EXSHARE} = \underset{(5.04)}{1.888} - \underset{(3.09)}{.302\ ADV} - \underset{(4.23)}{.165\ LSALES}$$

$$F = 21.93 \quad R^2 = .43$$

where EXSHARE is exports divided by the sum of exports and affiliate sales, ADV is a dummy variable equal to 1 for firms with advertising to sales ratios of at least 1%, and LSALES is the logarithm of total company sales. Size and advertising have large, negative, and statistically significant effects on the use of exports to channel foreign sales.

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