



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search

<http://ageconsearch.umn.edu>

aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

No endorsement of AgEcon Search or its fundraising activities by the author(s) of the following work or their employer(s) is intended or implied.

Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

A 281.9
A983E

PRODUCT DIVERSIFICATION BY FOOD MANUFACTURING FIRMS

MARKETING ECONOMICS DIVISION
ECONOMIC RESEARCH SERVICE
U.S. DEPARTMENT OF AGRICULTURE

Reprinted From
The Marketing and Transportation Situation
May 1967

PRODUCT DIVERSIFICATION BY FOOD MANUFACTURING FIRMS 1/

The food processing sector of the U.S. economy is changing at a pace matched by only a few other large sectors in the economy. This segment of the economy has grown rapidly in terms of sales, employment, advertising, and assets. Consumers spent \$91.3 billion on food products in 1966--almost 20 percent of total personal consumption expenditures. The labor force is over 10 times greater in food manufacturing than in petroleum refining and more than twice that of the motor vehicle and parts industry [6, p. 1-2]. 2/ In 1961, advertising expenditures of the food and kindred products (excluding alcoholic beverages) industries substantially exceeded those of tobacco manufactures, petroleum products industries, and the motor vehicle industry [6, p. 63].

Between 1947 and 1961 food manufacturing corporations with assets of \$50 million or more increased their share of the total food industry assets from 36.6 percent to 47.6 percent. Simultaneously the number of food manufacturing companies declined from 40,000 to 32,000 [6, p. 5]. Many businessmen, government officials, economists, and others have raised questions as to the causes of these trends and about their ultimate effects on competition in the food industry.

A second somewhat related trend has also been underway in recent years. This is the tendency for firms engaged primarily in manufacturing food product lines to expand the number of these lines and, in many instances, to add lines in areas other than food. Conversely, some nonfood manufacturers have added food product lines in recent years.

This article will describe the current product diversification changes occurring in these industries, using Census data and the limited research studies and other source materials available at this time.

Definition of Product Diversification

Product diversification is the introduction of a new product line. However, product line can be defined at various levels of specification, making it difficult to develop rigorous definitions. The introduction of a new product line will be said to occur when the firm adds a product line that does not directly compete with or is not a direct substitute for the company's primary product line. This product line may be added by developmental research and investment of funds in new plant by the existing company, by purchase of existing plants of other companies, or by merger with firms in other product lines. The latter course may have been a major source of product diversification up to present. A multi-product firm is called a conglomerate firm; a merger of firms in different product lines, a conglomerate merger.

Recent Trends in Product Diversification

Product diversification in the total manufacturing sector will be discussed before focusing attention directly on food manufacturing. In 1958, companies having establishments in more than one 4-digit industry 3/ accounted for 2.6 percent of all manufacturing companies. However, these companies operated 28.1 percent of the manufacturing establishments and had 59.4 percent of the total manufacturing employment [9, p. 23]. From 1954 to 1958, the number of companies operating in more than one

1/ Prepared by Richard J. Arnould, agricultural economist, Marketing Economics Division, Economic Research Service, USDA.

2/ Number in brackets refers to item in Literature Cited, p. 18.

3/ A 4-digit classification refers to an industry as defined by the Standard Industrial Classification System of the Bureau of the Budget.

4-digit industry in manufacturing increased 40 percent; the number of establishments belonging to these companies increased by 21 percent; and employment in these companies increased by 9 percent [9, p. 25]. The average number of employees of these multi-industry companies in 1958 was 1,440 compared with 305 employees for single-industry producers [9, p. 24]. Thus, multi-industry companies accounted for a large proportion of the total output of the economy.

A recent study conducted by Michael Gort provides a detailed analysis of the product line additions of 111 manufacturing firms during 1929-54 [5]. It was found that additions of manufactured products by these companies were heavily concentrated in industries characterized by rapid growth, high labor productivity, and a high ratio of technical employment (engineers, scientists, and surveyors) to total employment. Contrary to beliefs of some businessmen and economists, these firms did not tend to choose areas of high cyclical stability as such but rather chose areas requiring large investments of capital [5, p. 103]. Relationships between profit rates and diversification or between diversification and the division of income between that retained by the companies and that devoted to dividend payments were not found to be statistically significant [5, p. 65].

A report prepared by the staff of the Federal Trade Commission for the National Commission on Food Marketing presented data summarizing product diversification and industry position of firms in the food processing sector of the economy [6]. The data summarized below are taken mainly from this study.

More than 32,000 companies were engaged in food processing in 1963 [6, p. 5]. However, the 50 largest companies (through their divisions or subsidiaries) occupied 70 percent of the top 4 positions among companies in the 4-digit food manufacturing industries (excluding alcoholic beverages). These same 50 companies accounted for three-eighths of the total value added, half of the total assets, and over 60 percent of the profits in the food processing industries [6, p. 58]. They accounted for more than 80 percent of the total advertising budget of food processors [6, p. 65].

The 100 largest firms held 1 or more of the 8 leading positions in 114 of the 116 classes of 5-digit ^{4/} food products in 1963 (table 5). They held 70 percent of the top 4 positions and 39 percent of the next 4 positions. These percentages increased from 1954 to 1963. These same firms occupied 73 percent of the 4 leading positions in food industries having 4-firm concentration ratios ^{5/} in excess of 80 percent [6, p. 46]. This was an increase of 9 percentage points from 1954 to 1963. Although scattered among product classes varying in total size (as measured by total value of shipments), the output of these firms was primarily in the larger product classes.

Food manufacturing companies also occupy a significant number of leading positions in nonfood manufacturing products classes. In 1963, 84 of the 100 largest food companies held an average of 4.6 top 4 positions in 5-digit product classes (table c). The 50 largest companies held an average of 11.3 top 4 positions each. The 100 largest food processors had manufacturing capacity in 76 nonfood product classes [6, p. 40]. They occupied 98 of the top 8 positions in these nonfood product classes [c, p. 50].

The 200 largest food processors were in an average of 3.1 nonfood manufacturing industries (4-digit) each and 3.3 food industries. However, the 20 largest food

^{4/} The Bureau of the Census has extended the Standard Industrial Classification system to provide for classification of products. Each product is assigned to a product class, which is a relatively homogenous grouping of products and which has an identifying number consisting of 5 digits.

^{5/} A 4-firm concentration ratio is defined as the total output of the 4 largest companies in a specified industry divided by the total output of that industry.

Table 5.--Leading positions 1/ in 5-digit food product classes occupied by 100 largest food manufacturing companies, 1954, 1958, and 1963

Year	Number of food product classes		Percentage of leading positions held	
	Total	In which 100 or more leading positions were held	Top 4 positions	5th-8th positions
	<u>Number</u>	<u>Number</u>	<u>Percent</u>	<u>Percent</u>
1954	103	95	63	33
1958	114	108	66	38
1963	116	114	70	39

1/ A company was defined as occupying a leading position if it was among the 8 largest companies ranked with respect to value added by manufacture in individual 5-digit product classes. See footnote 4 for a definition of 5-digit product class.

Special tabulation by the Bureau of the Census [6, table 11, p. 46].

Table 6.--Number of leading positions in 5-digit manufacturing product classes (food and nonfood) held by 100 largest food manufacturers, 1954, 1958, and 1963 1/

Year	Number of 100 largest <u>2/</u> holding at least 1 of the 8 leading positions	Average number of positions held per company		Average number of top 4 positions held by 50 largest companies
		Top 8	Top 4	
1954	80	6.2	4.0	9.2
1958	88	5.3	3.9	9.7
1963	84	7.3	4.6	11.3

1/ For definition of "leading position" and "5-digit product class" see footnote 1 to table 5.

2/ Ranked by value added by manufacture in food and kindred products, except alcoholic beverages.

Special tabulation by the Bureau of the Census [6, table 16, p. 50].

processors operated in an average of 8.9 food industries (4-digit) each [6, p. 52]. Some of this multi-industry activity comes from vertical integration and should not be assumed to be composed entirely of product diversification.

The 1966 Fortune Plant and Product Directory [4] lists 98 firms producing food and kindred products among the largest 500 manufacturing firms in the United States. Not all of these 98 firms produced food as a primary product. These firms produced an average of 18 different products (5-digit) in 1966 compared with 15 in 1961. Ten of these 18 products were nonfoods--an average increase of 2 products per firm since 1961. One significant trend noted among these 98 companies was the movement between food processing and chemical products: 23 were primarily in one of the chemical industries and 24 were food processors. All 24 food processing companies also produced chemical products ranging from soap and pharmaceutical preparations to commercial feeds and fertilizers. This trend would substantiate Gort's findings that the diversification movement is toward industries characterized by rapid growth and high levels of technology.

The staff of the Federal Trade Commission made an effort to evaluate the effects that product diversification may have had on profit differentials among 85 of the large firms manufacturing food and kindred products. The data were based on a survey conducted by FTC in 1950, so they do not cover the diversity occurring during the last 15 years. A concentration index was developed for each firm in the following manner: "(1) The four-firm concentration ratio for each five-digit product manufactured by a firm was multiplied by its value of shipments of the product; (2) these sums were then divided by the firm's total value of shipments in 1950 to arrive at an average concentration ratio" [6, p. 204].

A correlation of these concentration measures with ratios of net profit to net worth showed that 91 percent of the variations in profits among firms were associated with these weighted measures of concentration. This close relationship indicated that profits tended to increase as concentration increased.

Possible Reasons for the Diversification Trend

These FTC results suggest some of the reasons for product diversification. First, diversification of product lines, which is in many respects analagous to diversification of a financial portfolio, can be a means to stabilizing profits and reducing risk [5]. This is the "Don't put all of your eggs in one basket" argument.

Second, and closely related to the stability and risk factor is the possible explanation flowing from the size of the annual dollar investments of the large companies described earlier. These large companies seek to spread their financial resources over various industries to maintain efficient levels of capacity that will not detract from their profit position.

Third, there is some indication that economies of scale in the total company operation as opposed to in-plant economies of scale are involved in the decision-maker's analysis of diversification movements of his company. Early diversification may be into areas tangential to their primary operation, i.e., to products marketed through the same channels, to products involving similar techniques, or to products requiring similar inputs. After these initial moves into tangential areas, the company may diversify into highly conglomerate activities [8 and 9]. This sequence would enable a firm's management to make the most efficient use of its available facilities, outlets, and information or enter areas where a minimum of additional market information is needed before moving into areas requiring new information. Another advantage to this procedure is that the company can in this manner more fully utilize its technical skills (including its research and development staff). The movement into chemicals illustrates this aspect since companies manufacturing chemical and allied products ranked the highest in company financed research and development from 1957-64 (with the exception of 1960) [7].

Most of the literature pertaining to economies of scale is concerned with the in-plant economies, not with the total company economies. Therefore, the existence of these economies at the company level is still conjectural.

Fourth, companies may look for management ability when they merge with another company. Competent management is a scarce resource. One method of drawing management from other businesses is to merge with or acquire those businesses, a process that might take the company into new product lines. If the company being purchased does not fully employ its existing managerial talent, or if jobs can be combined to avoid duplication of tasks, this management can become at least in part available to the acquiring company.

Fifth, diversification may, in effect, be forced on companies by legal restriction. Although many firms increase their ability to expand, anti-merger laws place limitations on a firm's ability to merge horizontally [1, p. 2-3]. But since it is cheaper to grow by merger than by internal expansion (as has been pointed out in the dockets of a number of anti-trust cases), companies often attempt to maximize profits and/or growth by mergers with firms producing products somewhat unrelated to their primary products.

Some Possible Effects of Diversification on the Marketing System

Corwin Edwards, in his report to the Senate Subcommittee on Anti-trust and Monopoly in 1964, summarized his views as to the conglomerate enterprise's sources of power and discussed its possible effects on the market. He noted that, through diversified growth, a firm can attain great size without gaining monopolistic control of single markets [10, pp. 36-46]. According to his testimony, this size could give the firm advantages over its rivals: it could outbid its rivals for scarce resources, conduct more research, and also absorb larger losses.

Edwards' second point, closely related to the above, was that conglomerate firms were likely to have more resources than the single industry specialists [10, p. 36-46]. He felt that the dispersion of resources of the conglomerate enterprise would alter its decision-making process to consider not each product individually but to develop a multi-product strategy for operations.

A 1967 decision of the U.S. Supreme Court, ordering Proctor and Gamble Company to divest itself of Clorox Company may tend to limit the extent to which multi-product companies can shift resources into a single industry or product line through mergers or acquisitions [3].

The effect of product diversification on market competition has not been developed to any extent in economic theory, and studies in the area are only fragmentary. A number of possible effects are offered below. First, the multi-product sources of revenue for a conglomerate firm may permit the subsidization of one product at the expense of others. If this were to involve predatory price cutting at the expense of efficient single product manufacturers, it would be considered harmful to the competitive functioning of the market. The long-run effect could be control of the market by the conglomerate, which would allow it then to raise the price above the competitive level.

Second, conglomerate diversification could open the possibility of coercive use of power in reciprocal buying and selling. In their simplest state, reciprocal trade agreements involve the "I will buy from you if you will buy from me" concept. The Consolidated Foods case before the Supreme Court in 1965 illustrated the court's willingness to accept evidence of such possibilities as a sufficient basis for denying mergers. Consolidated Foods, a company engaged in the wholesaling of canned foods, purchased Gentry, Inc., which accounted for 32 percent of all sales of dehydrated garlic and onions. What appeared on the surface to be an innocent merger was held by the

Supreme Court to involve the possibilities of coercive reciprocity. Consolidated Foods purchased large amounts of canned soups from various companies. The soup companies in turn purchased dehydrated garlic and onions as ingredients. Justice Douglas in delivering the opinion of the Supreme Court proclaimed "...reciprocity made possible by such an acquisition is one of the congeries of anticompetitive practices at which the antitrust laws are aimed, if the probable consequence of the acquisition is to obtain leverage in one field or another" [2, p. 594]. The distorting effect reciprocity could have on the competitive pricing mechanism has been analyzed by Turner [8].

Third, full line selling might permit tacit use of product tie-ins. A better price for commodity X might be offered if the customer also purchased commodity Y from the company. This could foreclose the market to other producers of X and Y if they did not meet the conglomerate's offer.

Fourth, a conglomerate may not have to rely on revenue from a single industry or product line for investment funds. If there were to be a downswing in the cycle of a given product line, the multiproduct company might react in the following ways: the investment that normally would have been allocated to the depressed product line might be shifted to a product line not affected by the downswing, and thus avoid contributing to further downswings; or the company could continue to subsidize the depressed product line for a short time in an effort to revive or stabilize sales.

This article neither exhausts the possible reasons for, nor potential effects of, product diversification on the competitive market system. Rather, it summarizes some of the developments, limited research, and some of the consequences being discussed in business and economic circles. The effects must be considered tentative until more is known about the market power of conglomerates, their use of this power, the multi-plant and multi-industry economies of scale, and the pricing conduct of the conglomerate enterprises.

Literature Cited

- [1] COHN, EDWARD A., and LINDON N. CRUTCHFIELD, "Ownership Changes Made by Bakery and Dairy Products Companies, 1959-64," ERS-291, 1966.
- [2] FEDERAL TRADE COMMISSION vs. CONSOLIDATED FOODS CORP. (380 U.S. 592).
- [3] FEDERAL TRADE COMMISSION vs. PROCTOR & GAMBLE CO. (386 U.S.).
- [4] FORTUNE, "Plant and Product Directory," 1961 and 1966, (Time Inc., N.Y.).
- [5] GORT, MICHAEL, "Diversification and Integration in American Industry," (Princeton, Princeton University Press, 1962).
- [6] NATIONAL COMMISSION ON FOOD MARKETING, "The Structure of Food Manufacturing," a report by the staff of the Federal Trade Commission published as Tech. Study No. 8, (U.S. Government Printing Office, Washington, D.C., June 1966).
- [7] NATIONAL SCIENCE FOUNDATION, "Basic Research, Applied Research and Development in Industry, 1964," NSF 66-22.
- [8] TURNER, DONALD, "Conglomerate Mergers and Section 7 of the Clayton Act," 78 Harvard Law Review, 1313-1395.
- [9] U.S. BUREAU OF THE CENSUS, "Enterprise Statistics: 1958, Part 1. General Report." (U.S. Government Printing Office, Washington, D.C., 1963).
- [10] U.S. SENATE, "Economic Concentration," Hearings before the Subcommittee on Antitrust and Monopoly of the Committee on the Judiciary, Part I. (U.S. Government Printing Office, Washington, D.C.).

