



## Reducing the Costs of Food Distribution

by A. C. HOFFMAN and F. V. WAUGH<sup>1</sup>

**WHERE DOES** most of the consumer's food dollar go—to the farmer or to the middleman? Is the spread between the farm price and the retail price justified or not? What part is played in this spread by wage rates, by profits, by efficiency or inefficiency in business methods, by consumer demands for services? What are the possibilities for reducing costs within the framework of the present marketing system? What about cooperative marketing, direct marketing, terminal wholesale facilities, new developments in retailing? Are there possibilities for reducing costs through a rather complete reorganization of the whole marketing system or large segments of it? Would such a method be consistent with our conception of free enterprise and competition? Here is a thoughtful and illuminating discussion of all of these questions.

**THE MARKETING** spread between farmer and consumer has always been a matter of keen public interest and not a little criticism.

<sup>1</sup> A. C. Hoffman is Agricultural Economist and F. V. Waugh is Chief Agricultural Economist, Division of Marketing and Transportation Research, Bureau of Agricultural Economics.

To many people it has seemed unreasonable that on an average the farmer receives only about 40 percent of the price paid for food products by the consumer. This situation has been variously ascribed to monopoly, to high wage rates, to inefficiency, to a wasteful increase in expenditures for competitive selling, as well as to numerous other factors. Ways and means of reducing marketing spreads have consequently taken many forms and have received the attention of governmental agencies for many years. But there is still a rather widespread misunderstanding of why marketing charges are as high as they are and what is necessary to effect significant reductions.

Let us see at the outset what the trend of food margins has been during the last 25 years. The Bureau of Agricultural Economics has compiled figures to show the retail cost to the consumer as compared with the farm value of 58 food products in the amounts purchased annually by a typical workingman's family (table 1). The difference between the two represents roughly the charges made for processing, transporting, and distributing this quantity of foods to the consumer. These data should not be taken as exact measures of marketing spreads but they are believed to be accurate enough to warrant several important conclusions.

Table 1.—Retail value, farm value, and margins of 58 food products, 1919-38

Period	Retail value	Farm value	Marketing spread	Farmer's share of consumer's dollar	Index of hourly wages (1926=100)
	<i>Dollars</i>	<i>Dollars</i>	<i>Dollars</i>	<i>Percent</i>	<i>Percent</i>
1913-17.....	285	157	128	55	48
1918-22.....	437	227	210	52	88
1923-27.....	400	187	213	47	98
1928-32.....	361	154	207	43	96
1933-37.....	317	130	187	41	90
1938.....	321	130	191	40	102

The first thing to be noted from table 1 is that marketing charges represent a large and increasing part of the price paid for food products by the consumer. During 1913-17 the average annual retail cost of 58 foods for a typical workingman's family was \$285, of which the farmer received \$157. As of 1938, the same bill of goods cost the purchaser \$321, of which the farmer received \$130. The spread between the farm and retail value of these goods thus increased from \$128 to \$191, while the farmer's share of the retail price decreased from 55 to 40 percent.

The first inclination is to say that here certainly is evidence that the marketing system is becoming increasingly monopolistic or increasingly inefficient or both. But let us look a little closer to see what comprises these marketing spreads, and why they behaved as they did.

#### FACTORS AFFECTING MARKETING SPREADS

Changes in food margins from year to year are to be explained by one or more of the following factors: (1) Changes in hourly wage rates and other cost factors; (2) changes in profits and rates of return to

capital invested in marketing enterprises; (3) changes in the efficiency of the marketing system; and (4) changes in the amounts and kinds of marketing services rendered.

### **Wage Rates**

Of these four factors, the first is by far the most important in explaining changes in marketing spreads during the last 25 years. The reason is simply that most of the charges for getting food products from the farm to the consumer are made up, either directly or indirectly, of wages. This being the case, one would expect to find a close relationship between changes in hourly wage rates and food margins. That such a relationship does indeed exist is obvious from table 1. Hourly wage rates have more than doubled during the last 25 years, which is the chief explanation of why food margins widened as they did.

This brings us to the first choice with which we are confronted in any effort to reduce marketing spreads significantly: Either (1) the amount of labor required to process and distribute food products must be decreased by means of increased efficiency, or (2) the wage rate per hour must be reduced.

It goes without saying that in general the objective of public policy ought to be to reduce marketing costs by the former method rather than by wage cutting. Any reduction in wage rates would of course affect the farmer in two ways. Insofar as it curtailed consumer purchasing power for food products, the farmer would be adversely affected. On the other hand, the farmer stands to gain directly from any measures that reduce marketing costs. From the farmers' standpoint, it is not easy to say which of these considerations is the more important. But from the public standpoint, which takes account of the interest of all groups, it is obvious that a reduction of marketing costs by means of wage cutting alone represents no net social gain, but merely a transferring of advantage between different economic groups.

### **Profits**

A second component of the spread between farmer and consumer is the profits or earnings of capital invested in marketing enterprises. The notion is not infrequently held that exorbitant profits are largely responsible for the present width of this spread and that the solution is merely to force middlemen to disgorge their profits. Unfortunately the matter is not so simple as this.

The profits of some of the leading food corporations and the relation of these profits to total marketing spreads are shown in table 2. The ratio of earnings to capitalization—which gives a close approximation to the rate of return on invested capital for the companies involved—has varied from as high as 23.9 percent for the grocery chains in 1928 to as low as 0.4 percent for the large meat-packing concerns in 1932. At no time in the last 15 years have the meat packers netted more than 6 percent on their investment, which makes it difficult to establish a case against them on the grounds that their profits have been excessive. On the other hand, the corporate grocery chains at one time were among the most profitable enterprises to be found anywhere

in the country. They enjoyed these profits, however, not because they had a monopoly of retail food distribution, but mainly because their competitors were unable to match them in distributive efficiency. In this connection it is significant that chain-store profits have fallen steadily as competition between the chains themselves has increased and as the independents have been able to meet them on more equal terms through their own voluntary and cooperative associations.

Table 2.—Ratio of earnings to capitalization and profit margins of leading grocery chains, dairy companies, and meat packers, 1928, 1932, and 1936

Year	Ratio of earnings to capitalization <sup>1</sup>			Profit margins <sup>2</sup>		
	5 grocery chains	4 dairy companies	4 meat packers	5 grocery chains	4 dairy companies	4 meat packers
	Percent	Percent	Percent	Percent	Percent	Percent
1928	23.9	18.0	5.5	3.1	7.3	2.1
1932	14.7	7.1	.4	2.9	4.8	.2
1936	11.5	10.0	5.6	2.1	4.4	2.0

<sup>1</sup> Earnings represent the amount of money available for dividends on stocks, interest on bonded debt, and Federal income taxes. Capitalization represents the sum of the outstanding stocks, surplus reserves, and long-term debt.

<sup>2</sup> The profit margin is computed by dividing the earnings of a corporation by its dollar sales.

More significant for our present purpose than the ratio of earnings to invested capital is the profit margin. The profit margin is computed by dividing the earnings of a corporation by its dollar sales. It therefore shows how important these earnings are as a component of marketing spreads.

It is evident from the profit margins as shown in table 2 that earnings do not represent a very large part of the margin between farmer and consumer. Out of every dollar of sales made by the five leading food chains in 1936, only about 2 cents went to the capital invested in these enterprises. For the big dairy companies and meat packers, the corresponding figures are 4.4 cents and 2 cents, respectively.

Obviously the total marketing spread would not be greatly reduced even by the complete elimination of all earnings to capital invested in food enterprises. For most food products probably not over 5 percent of the retail selling price is represented by the combined earnings to capital at all stages in the marketing process. To suggest that we must look elsewhere than at profits is not to imply that any savings, however small, are unimportant; and certainly it is not meant to condone an exorbitant rate of profit derived from monopolistic or unfair trade practices. The point is that other factors such as wage rates, material costs, and the over-all efficiency of the marketing system are considerably more important than are profits in the determination of marketing spreads.

#### Marketing Efficiency and Increase in Marketing Services

The charge most commonly made against the marketing system is that it is inefficient and becoming more so. The increase in absolute marketing spreads, together with the fact that the farmer's share of the consumer's dollar has tended to decrease, is often cited as evidence

of this. Taken by themselves, however, neither of these things gives any direct measure of efficiency as that term is properly used.

If the farmer were to process his own products, transport them to market, and sell them direct to the consumer, there would of course be no margin between him and the consumer and he would get 100 percent of the latter's dollar. Obviously this would not be an efficient way to market most farm products, and for some of them it would be patently impossible. The proportion of the consumer's dollar received by the farmer, then, is not a measure of efficiency but rather of the degree to which farmers concentrate on the business of production rather than on marketing. Some farm products—for example, eggs that are produced near the point of consumption—do not require expensive processing or transportation. The farmer selling such products will normally receive a much larger share of the consumer's dollar than one producing peas for canning, for instance, even though both products are marketed with equal efficiency.

It is generally agreed that consumers receive more in the way of marketing services today than they once did. Examples of this are better grading and standardization, more convenient packages, and added processing. It is impossible even to estimate how much has thus been added to marketing costs. But so long as these things add to consumer satisfaction, it is self-evident that any resulting increase in the spread between farmer and consumer does not mean that the marketing system has to that extent become less efficient.

From the social standpoint, efficiency ought to be measured in terms of the amount of labor and capital required for the performance of any given marketing operation. The amount of labor required should be clearly distinguished from the wage rate or the compensation paid to labor for its services. Thus the marketing spread might increase either because more labor and capital are used for a given operation or because labor and capital are better paid. The first would be evidence of growing inefficiency but not the second. As we have seen, the increase in marketing spreads during the last 25 years is to be explained largely by the increase in hourly wage rates. But it does not follow that the marketing system is less efficient in terms of the amount of productive resources used per unit of marketing services rendered.

As a matter of fact, there is some evidence to indicate that food distribution is becoming more, rather than less, efficient. One thing which points in this direction is that food margins have not increased in proportion to the increase in hourly wage rates despite the fact that consumers are receiving as much in the way of marketing service as they ever did.<sup>2</sup>

Still another thing should be kept in mind when considering marketing efficiency—the distinction between those marketing costs or expenditures made for the purpose of satisfying demand and those made for the purpose of influencing it in favor of a particular firm's product. Most costs incurred in connection with the physical han-

---

<sup>2</sup> Too much significance cannot be attached to the varying ratio between wage rates and food margins as a precise measure of efficiency, because the ratio of labor to capital may also have changed. There is no way of estimating the change in the ratio of labor to capital used in food distribution, but probably it has not been sufficient to invalidate the above conclusion.

dling of the commodity such as assembling, processing, transporting, and storing are of the former sort. So also are part of those for selling and transferring ownership of commodities at various stages in the marketing process. But it is also true that many—though not all—of the expenditures for salesmen's salaries, brokerage fees, and brand advertising are made for the purpose of influencing the buyer to patronize a particular firm or to use a particular brand or type of commodity. Insofar as expenditures of this kind contribute to the creation of new wants, larger total sales, and reduced production costs, they serve a socially necessary and useful purpose. But if the effect is merely to take business from one firm and give it to another, then clearly there is no net social gain but only a transfer of advantage between individual firms. We should, therefore, take care to distinguish between the over-all efficiency of the marketing system and that of individual firms, since the two are not necessarily synonymous.

### **REDUCING MARKETING COSTS WITHIN THE FRAMEWORK OF THE PRESENT SYSTEM**

How much marketing costs can be reduced depends largely on how far we are willing to go in reorganizing the marketing system. Many gains have been and can be made within the framework of the present system. Improvements in the efficiency of individual firms, cooperative marketing, reorganization of terminal wholesale facilities, changes in types of retail stores—all of these offer possibilities for some reduction in marketing costs without any drastic reorganization of the present system of food distribution. But not infrequently the savings possible by these means are exaggerated in the public mind, with the result that there is disappointment when they do not come up to expectations.

Most of the efforts on the part of the farmers themselves to reduce marketing costs have been made by means of cooperative-marketing organizations. For the most part, these ventures have been confined to the processing and marketing operations at the producer end of the marketing system. Outstanding examples of the progress in cooperative marketing are of course the thousands of local cooperative creameries, grain elevators, cotton gins, livestock-shipping associations, fruit-packing plants, etc.

It goes without saying that the farmers' cooperative movement has led to great improvement in the local marketing sphere within which it has mainly operated. It has resulted in larger and more efficient local plant facilities, a better competitive situation, improved quality, and various other gains calculated to improve returns to member farmers. (See the article, *Cooperative Marketing by Farmers*, p. 684.) But it must also be said that the costs of these local marketing functions represent only a small part of the total marketing spread, so that the greatest possible gains to be made here do not bulk large in relation to the retail price of the commodities involved. The cost of making butter, for example, might be reduced as much as 1 or even 2 cents per pound within the creamery; and the local costs of handling a bushel of wheat by as much as several cents. But important as such savings are to the farmers who receive them, it is

obvious that more than this is necessary if the total cost of marketing is to be greatly reduced.

Greater potential gains are to be made in the field of food processing and in the terminal and wholesale markets, but even here it is easy to overstate what might be done without a complete reorganization of the marketing system. The most significant development affecting the terminal marketing of most farm products is the tendency toward direct marketing—as, for example, the selling of livestock direct to meat packers or the sale of fruits and vegetables by growers to chain-store systems. In effect this has meant the elimination of one or more specialized intermediaries at some point in the marketing system.

Elimination of the broker or the commission man does not mean that marketing spreads are reduced by the amount of the fees or margins formerly taken by these agents. Direct marketing involves some compensating costs on its own account, and in some cases these may be almost as great as those costs which it displaces. Generally speaking, however, direct marketing does appear to have led to some economies, particularly by mass distributors who no longer have need for the services of specialized intermediaries between them and the producer.

Among the most inefficient and disorganized terminal wholesale facilities are those for fresh fruits and vegetables. In most of our large cities, these facilities are antiquated, ill-adapted to the handling of motortruck receipts, and altogether inadequate for the efficient wholesaling of perishable produce under modern conditions. As a result, waste and spoilage is higher than it should be, intracity cartage costs are excessive, and the margins taken by wholesalers and jobbers are somewhat wider than they might be if modern market facilities were provided. Studies made by the Bureau of Agricultural Economics indicate that savings approximating 2 or 3 percent of the retail price of perishables are possible within the terminal wholesale market.

Most important of all marketing functions from the standpoint of the costs involved is retailing. Because of its remoteness from the farmer, the retail function is sometimes overlooked when ways and means for reducing marketing costs are under consideration. In selling nearly all farm products, the retail margin is the largest single element in the marketing spread, and in many cases it is larger than all other marketing costs combined. The retail margin for fruits and vegetables, for example, commonly amounts to 30 to 35 percent of the retail price; for meat products, 25 to 30 percent; for bread, 20 percent. This does not mean that the retailer is less efficient in his operations than handlers at other stages in the marketing process or that his profits are necessarily exorbitant in relation to his labor and invested capital. But it does mean that here is one of the most likely points at which to effect significant savings in food distribution.

The outstanding development in food retailing has been the growth of the corporate grocery chains and, in recent years, of voluntary and cooperative chains of independent retailers. The changes brought about in food retailing as a result of this development are of two kinds: (1) Those resulting from the integration of the wholesaling function

with that of retailing; and (2) changes in the operation of the retail grocery store itself.

Next to the function of retailing itself, some of the most costly links in the marketing system are those between the processor and the retailer. The key to many of the advantages possessed by chain systems lies in the fact that they have dropped some of these links by the integration of successive marketing functions within a single firm. Nearly all of the chains have set up their own wholesaling establishments to service their retail units, and the larger systems have gone actively into country assembling and processing of many food products. In consequence of this, their stocks move toward the consumer without the numerous and costly bargaining transactions and selling operations necessary to move goods in the regular channels.

Equally important are the changes which mass retailing has brought about within the retail store itself. The emphasis of chain stores as well as of many independents has been on rapid turn-over, larger volume per store, and the application of labor-saving methods— notably the self-service feature. The corporate chains took the initiative along these lines, but in recent years the voluntary and cooperative chains have not been far behind in the application of many of these cost-saving features.

How much mass retailing has contributed toward reduced marketing costs it is of course impossible to say. Data compiled by the Federal Trade Commission in connection with its chain-store inquiry indicated that, in the four cities studied, the chains were selling at prices approximately 7 percent below those of their independent competitors. Numerous studies made by other agencies confirm this general relationship between the prices of chains and those of independents, although there are of course many individual exceptions to these averages. It is probable that the reduction in food costs brought about as a result of mass retailing is even greater than these price differentials would indicate, since all retailers must follow the lead of their low-price competitors to some extent if they are to stay in business in competition with them.

Another important development in food distribution is the introduction of new low-cost methods of retailing, notably the supermarket. The essential features of the supermarket are tremendous store volume (often amounting to 10 or 20 times that of the average grocery store), low rent and store overhead, and a reduction in store labor by means of customer self-service. Within the short span of a few years, stores of this type have become an important factor in the grocery trade, particularly since the older grocery chains have begun converting their retail units into markets of this type.

Somewhat the same general idea is embodied in the milk depots recently set up in several large cities at which milk is sold at greatly reduced prices to those willing to forego the regular service of doorstep delivery for this product. All low-cost marketing developments of this kind are likely to have a special appeal for those whose income is limited or who prefer lower prices to extra marketing services, and they ought to be permitted to develop in accordance with the wishes of those who use them.



## OVER-ALL REORGANIZATION OF THE MARKETING SYSTEM

Thus far we have discussed only those savings which can be made within the framework of the present marketing system. To a considerable extent, however, all of these leave untouched one of the main causes of high marketing costs--the duplication of processing, transportation, and marketing facilities arising out of competition itself. We have indeed made great progress in improving the efficiency and reducing the costs of individual firms; but this has not resulted in a proportionate improvement in what might be called the over-all efficiency of marketing because the nature of our marketing system is such that no limitation has been placed on the number of firms or the quantity of labor and capital used in food distribution.

It is not possible on the basis of present information even to approximate how much the needless duplication of marketing facilities at all stages of food distribution adds to marketing spreads. But it can be asserted positively that the number of retailing, wholesaling, processing, and assembling establishments has multiplied out of all proportion to what would be needed if food distribution were organized on what might be called a social-engineering basis.

The number of grocery stores, for example, has increased from about 160,000 in 1900 to 355,000 in 1935. Population per store has decreased in this same period from 486 to 358. Part of this increase in retail facilities is due to the fact that a larger proportion of the population now lives in cities and requires more in the way of retail facilities. But it also signifies a growing excess of retail facilities, the cost of which must be reflected either in wider marketing spreads than would otherwise be necessary or in a lowered rate of recompense to the labor and capital employed in retailing enterprises.

Nor is this situation confined to food retailing. To some extent at least it is to be found at every point in the marketing system. We do not need all our creameries and canneries and grain elevators to handle our present food supply. Studies have repeatedly shown that many of these plants are operating at far less than capacity and that substantial cost savings could be made if all of the supply were to move through the most efficient types of plants operating at full capacity. In general this would probably mean a substantial increase in the average size of plant and handling agencies, and it would certainly mean a reduction in numbers of handlers so as to bring the over-all capacity of the marketing system more in line with the facilities actually needed to process and distribute food products.

Generally speaking, proposals of this kind have not yet received much discussion so far as the food industries are concerned. During recent years, however, an increasing number of people are beginning to think of fluid-milk distribution in these terms. Careful students of the problem know that the costs of fluid-milk distribution are high mainly because of the duplication of pasteurizing facilities and the overlapping of milk routes and that these costs can be reduced significantly only by a fundamental reorganization of the fluid-milk marketing system. How much these costs can be reduced and whether or not the necessary measures are feasible, considering all the factors involved, is of course conjectural. A recent study of fluid-milk

marketing in Milwaukee, Wis., indicates that savings of more than 2 cents per quart might be achieved through a unified, noncompetitive system of milk distribution. A gain even approximating this estimate would far exceed any saving likely to be obtained in any other way.

To achieve the maximum efficiency in food distribution by limiting the number and kind of marketing facilities to those actually needed to provide consumers with the goods and services they desire would obviously involve some fundamental changes in our present conception of free enterprise and competition. It would probably mean that some limits would have to be placed on the right of private enterprisers to erect plants and engage in marketing operations unless there was a real need for the added facilities. In some cases it might even mean the abandonment of competition as the regulator of economic forces and the substitution of public control somewhat along the lines of that now being exercised in those industries classified as public utilities. At the present time most of the food industries are too ramified and their economic units are too numerous and too separate to permit an easy transition to such a system. The thing to be emphasized, however, is that this is the general direction in which food distribution will probably have to go if the sole objective is to process and distribute food products at the least possible cost in terms of man-hours and capital equipment.

Assuming that it were possible to operate our marketing system with far less labor and capital than is now used, it will immediately be asked what is to be done with the additional productive resources thus made available for other means of employment. With many of our resources already idle, many will argue that no good purpose will be served by adding to present unemployment. If the alternative to employment, even though it be relatively unnecessary and unproductive, is no employment, then this argument indeed has considerable logic. There is, of course, nothing novel either in this contention or in the situation which has given rise to it. The same objection was raised at one time to the introduction of the power loom, the steam engine, and many of the other labor-saving instruments which are basic to our modern way of living.

The fundamental problem of how to give full and productive employment to all economic resources is beyond the scope of this article. It has generally been assumed that labor and capital displaced in one line of enterprise would ultimately find employment in another. Over the centuries this has in the main been true; but the lag has been so great and the adjustments so slow that the ultimate gains for mankind have been achieved only at the expense of great loss and suffering during the transition period.

#### **PUBLIC POLICY TOWARD NEW MARKETING DEVELOPMENTS**

One thing further might be said regarding the reduction of food costs. Nearly everyone pays lip service to the need for doing everything possible to reduce marketing spreads and lower the costs of food distribution. But not even governmental agencies themselves have always followed a consistent policy in this matter.

One of the economic premises on which the Federal Government was

founded was that there should be free and unrestricted commerce between the States. In another article in this Yearbook (pp. 656-666) the way in which this premise has been violated by various State and local barriers to internal trade is described in some detail. It is self-evident that this tendency cannot but result in an uneconomic use of productive resources and that it must mean some addition to the Nation's food costs.

Another contradiction is sometimes to be found in governmental policy toward large-scale marketing organizations. It goes without saying that private monopoly in any of its forms is intolerable and must be abolished either by the restoration of competition or by public control of monopolized industries. Sometimes, however, governmental measures go beyond this and seek to help or preserve a particular type of marketing system on the grounds that this, rather than a possible reduction in marketing costs, is in the public interest. Examples of this are some of the State chain-store tax laws, trade-practice acts, and State and Federal legislation for resale price maintenance. It may be that, when all factors are considered, measures of this kind are in the public interest. But when their effect is to maintain food prices at levels higher than they would otherwise be, it should be frankly recognized that there may be an inconsistency between these measures and the goal of narrower marketing spreads.