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OF THE
FOOD RESEARCH INSTITUTE

VOLUME II

NUMBER 3

A NATIONAL WHEAT-GROWERS'
CO-OPERATIVE

ITS PROBLEMS, OPPORTUNITIES,
AND LIMITATIONS

STANFORD UNIVERSITY, CALIFORNIA

January 1926

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WHEAT STUDIES

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The central feature of the series is a periodic analysis of the world wheat situation with special reference to the outlook for supplies, requirements, trade, and prices. The volume opens with a review of the previous crop year. Subsequently three surveys of current developments are made at intervals of about four months.

These surveys are supplemented by intensive studies bearing on the appraisal of the wheat situation and outlook and upon related matters of national policy. Typical subjects are indicated in the list of studies shown on the fourth cover page of this issue.

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WHEAT STUDIES

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A NATIONAL WHEAT-GROWERS' CO-OPERATIVE

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I. INTRODUCTION

The co-operative association of wheat growers is to be regarded as a partial merger of small business units, a sort of horizontal combination somewhat resembling the German cartels and some of the early American pools. A trend toward collective action is to be observed in modern agriculture. This has been intensified and accelerated whenever farmers have encountered hard times, but co-operation ought to be adjudged as a positive measure and not as a device of alleviation—a step in progressive organization rather than a form of liquidation. The larger purpose of co-operation is not to make a sick agriculture well, but to make an existing agriculture more effective. The country has witnessed many mergers of weak banks, weak factories, and weak railroads—consolidations designed to effect a restoration of business efficiency. But the modern development of business consolidation has a much broader basis. So, too, in agriculture. Co-operatives have been organized to aid distressed farmers; but the hope of co-operation, as we conceive it, lies in the development of a more effective agriculture. The

co-operative movement is to be approached, scrutinized, and appraised as potentially a forward movement in the business of cultivation of the soil.

We shall restrict ourselves to a discussion of co-operative association of wheat growers viewed as a national project. American

wheat is not a unity, and agricultural conditions and practices in the four major regions will impose a degree of decentralized treatment that cannot be defined in advance because it will need to be developed through experience. Co-operative undertakings of wheat growers before the war were practically limited to farmer-owned country elevators. Since the war, a number of state and regional wheat co-operative associations

have been formed, of which several are functioning with a reasonable degree of success, as attested by the satisfaction of their members. We do not find it feasible, except in an incidental manner, to employ the available experiences of these state and local wheat co-operative associations in a general discussion of a national wheat co-operative. This implies no criticism, and is, indeed, done with full recognition of the

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fact that the definite establishment of a national co-operative association may ultimately be a development by expansion and amalgamation of regional associations. The periods of operations of these associations have been brief; the amount of grain handled has been relatively small; the practices have not been uniform; and the accountings, so far as they are available, are not comparable. For these reasons we are unable to make extended use of their brief experiences.

Since the war two ambitious wheat-growers' associations have been organized in the United States. From the beginning these did not hold out much promise to the serious student of the history of co-operation, on account of the methods of organization and the objectives of the managements. The United States Grain Growers, Incorporated, was an institutional orphan, abandoned to perish. The Grain Marketing Company was a merger under a misnomer. It functioned for one year and did a large amount of terminal business in Chicago, but it was disbanded because growers would not purchase the stock. These ventures were not hand-made wheat-growers' co-operative servants; they were machine-made co-operative bosses. These experiments mean nothing in the study of co-operation.

We must, therefore, reason largely from experience with other commodities in the United States and from experiences with wheat-growers' co-operatives in other countries. Experiences in the co-operative marketing of agricultural specialties must be cited with caution, but they have been used as illustrations wherever they seemed to be reasonably pertinent. Canada has had for a number of years two large co-operative elevator associations, that annually marketed large volumes of wheat for members and nonmembers. Though apparently successful, these ventures did not return to members the gains corresponding to anticipated economies, and two years ago provincial pools were organized in the Prairie Provinces that now control nearly three-fourths of the wheat crop. The Canadian Co-operative Wheat Producers, Limited, combining the three provincial pools, is

making the first real test of a national wheat-growers' co-operative.

The outlook for success in a new development in a business depends largely on the correct appraisal of the existing position. Because of the nature of the business of wheat growing, it is more difficult to analyze the position than in the case of other industries that are in trouble, such as ship-building and sugar-refining, or that are not in trouble, such as bread-baking. Probably in no large national business has the problem of correct analysis of position been more difficult than in the case of wheat growing. Moreover, agricultural co-operation, either as theory or practice, is difficult of analysis and appraisal. Until the difficulties and opportunities of wheat growing are correctly appraised and relatively evaluated, no single project for amelioration or development can receive a correct estimation. Until co-operative marketing is properly understood, it can hardly become a specific project, even with correct analysis of the position of wheat growing. Under these circumstances, it is not to be wondered at that co-operative marketing of wheat should have received both support and opposition of an uninformed character. Current expectations from co-operative marketing have led to anticipations in its application to wheat that find no adequate precedents in the history of co-operative marketing of other commodities. At the same time, important powers inherent in co-operative associations have been generally overlooked.

A co-operative can envisage five objectives: restriction of acreage; improvement in yield and quality; lowering of production costs; economies in distribution; and increase in selling price. The broad commercial objective is to secure the highest weighted price at the lowest weighted cost of production and distribution. It is not possible to predict how, why, or when co-operative marketing of wheat will be successful; but it is possible to indicate, on the basis of precedents and experiences in the co-operative marketing of other agricultural products, what a wheat co-operative association must do if success is reasonably to be expected. The movement toward co-

operative marketing has been projected under stress of adversity. This has given an oblique illumination to the subject. We believe our information indicates that co-operative association of wheat growers holds better prospects for constructive than for salvaging operations.

It is the object of the following presentation to appraise the extent to which the difficulties of wheat growers may be due to ineffective marketing; the prospect of such

ineffective marketing being made effective through co-operative association of growers; and the prospect of co-operative association being made advantageous to wheat growing prior to the stage of marketing. It does not lie within the scope of the present article to make comparisons or appraise differences between wage levels, production costs, selling prices, buying prices, and standards of living of country and town, except as relating to co-operation.

II. PHASES OF THE MARKETING PROCESS

One must distinguish between consumption (or conversion) of wheat and consumption of wheaten products. The first may be termed proximal consumption; the second, final consumption. The marketing of wheat is directly concerned only with proximal consumers. Disregarding seed-wheat and feed-wheat, the proximal consumers of American wheat are millers and exporters. Behind the millers stand bakers, public eating-houses, and households, and export demand for flour. The final demands for wheaten products influence the operations and purchase prices of flour mills; but it is the manufacturing demand of mills and the shipping demand of exporters that are directly related to the marketing of wheat. These form the effective demand of proximal consumers that is equated with the (farm or market) supply in the price of wheat.

The difference between the price received by the wheat grower and the price paid by the miller and the exporter constitutes the spread, or margin, that has been the subject of so much discussion. Let the wheat be regarded as in the possession of the grower until it is delivered to the miller and the exporter. The c.i.f. price at mill and port is then the grower's gross price of wheat; the f.o.b. price of wheat delivered to the grower's local elevator is the grower's net price of wheat. Between the gross and the net prices of wheat thus defined—i.e., between the f.o.b. local elevator and the c.i.f. mill and port prices, commonly called spread or margin—are a series of items representing services that are now rendered to the wheat growers by middlemen.

The intermediaries include elevators, warehouses, railroads, commission merchants, brokers, fobbers, cash merchants, insurance companies, bankers, and speculators. Charges are exacted for their several services. Some of these charges are acts of private business and are set by competition; others are competitive within a range of legal or trade regulation; others are fixed by legal regulation.

There is no reason in theory why the service of distribution should not be carried out by the producer or the consumer, but in practice it has been taken over by an intermediary class with specialized talents. The middlemen are divided into three groups:

a) The services of the first group of middlemen are centered around the country elevators. The country elevator may be the property of an individual, a company, a line, a mill, a local farmers', or a growers' co-operative association. The country elevator renders services both in handling and selling wheat. The charges or tolls, that combined constitute the gross spread of the commercial operation of the country elevator, make up the difference between the price paid for the wheat delivered by the grower at the elevator door and the price received by the elevator directly or indirectly f.o.b. railroad car.

b) The services of the second group of middlemen are centered around terminal elevators. The terminal elevator may be the property of an individual, a company, a line, a mill, or a growers' co-operative. The terminal elevators render services in both handling and selling wheat. The charges or tolls, which combined constitute

the gross spread of terminal elevators, make up the difference between the price paid for the wheat in the country and the price received from the proximal consumer after transportation charges are deducted.

c) The services of the third group of middlemen are centered around export points, and include fobbers, who collect parcels, and exporters, who purchase from fobbers or collect for their own account. Exporters may be individuals, companies, or co-operative associations. The charges or tolls, that combined constitute the gross spread of the export operations, make up the difference between the price paid by fobber or exporter, let us say, c.i.f. port of embarkation, and the price received f.o.b. steamship, or f.o.b. port of delivery.

In all this, transportation costs are figured by themselves and have nothing to do with the middlemen's spread. The cost of transportation of wheat and the relations of rail and water rates to the marketing of American wheat for domestic consumption and for export lie outside the scope of this paper. Many of the early manipulations of grain traders were made possible by railway rebates. Even now, what are regarded by both growers and millers as inequalities, persist between comparable railway rates in the different regions, and these have some effect on the marketing of wheat and presumably on growers' prices. Whether the present rates on wheat and flour are too high or too low, the relation of rates to cost of service in the accounting of railway operations, the value of dependable railway service to the wheat grower, the claim for a reduced rate on wheat passing into export, the equity of certain transit rates that are vestiges of development, the hypothesis of determining wheat rates by the prosperity of the wheat regions, the comparability of rates on wheat with the rates on other commodities in respect of cost of service and value of goods—these and other important questions are not germane to the present inquiry. For our present purposes, transportation cost is a constant.

The services rendered by these middlemen, outside of transportation, are divided into handling, selling, and carrying services. It has been contended for wheat growers that the charges exacted for these services

are excessive—that an unnecessary number of middlemen are engaged, that the several items are overpaid, that the net profits represent an exorbitant earning on the capital invested, that the returns of the entrepreneurs represent an undue reward for enterprise involved. By some of those who consider the intermediary services rendered to the wheat grower, the miller, and the exporter to have been excessively required, the suggestion has been advanced that wheat growers should themselves carry out these services through the medium of co-operative associations. A discussion of co-operative marketing, therefore, implies primarily a consideration of the prospect of supplanting middlemen with a co-operative association, a horizontal integration in which growers are to do their own merchandising to millers and exporters.

In order to show that a change to co-operative marketing will accrue to the commercial advantage of wheat growers, proponents of the change must support at least one of four propositions:

1. That the present system of handling and selling wheat through middlemen contains redundant human units, obsolete physical equipment, and superfluous transactions.

2. That the same services in handling, selling, and storing now rendered to wheat growers by middlemen can be performed by a co-operative association at less cost.

3. That better services in handling, selling, and storing wheat than those now being rendered to wheat growers by middlemen can be achieved at relatively lower cost.

4. That the gains now accruing to middlemen through hedging and speculation would become available to the co-operative association, unless it were deemed a better policy to discontinue trading in futures.

At best, growers hope to reduce costs of distribution, improve methods of marketing, and secure the profits of middlemen, whatever they may prove to be. From the standpoint of accounting one might undertake to segregate three sets of charges that are included in the gross spread between wheat grower and proximal consumer of wheat—services in handling, those in selling, and those in storing wheat, inclusive of

hedging. Such a segregation of items is not practicable, however desirable, because the services overlap and vary from region to region and from season to season.

The handling services include elevation, loading and unloading, cleaning, drying, cooling, mixing, and storing. These handling services may be repeated several times. When mills buy wheat on sample in the country, there is the minimum of handling; when they secure wheat from terminal elevators, it is likely to have undergone the maximum of handling. Wheat ought to be cleaned on the farm, but few threshing machines are at present equipped for more than the simplest cleaning. Leaving the farms uncleaned, much of the wheat ought to be cleaned in country elevators. Most country elevators have a low grade of equipment; only half have cleaning machinery, much of it mediocre and frequently not used when available. The largest part of the cleaning of wheat, therefore, is done in terminal elevators and mills. The charges for elevation, loading and unloading, cooling, drying, and cleaning are, for the most part, fixed by public regulation, and abuse in this direction is scarcely possible except through unessential repetition.

The selling charges include commissions, interest, and insurance, all of which are supposedly at published rates. Whether the sale of wheat from terminals occurs directly following receipt from the country or after a period of storage, there is general agreement that the direct charges for selling are minimal. Repeated resales may, however, multiply these charges.

Storage of wheat, in country or city, is charged for presumably at published rates, which vary from season to season and from region to region and are much higher in terminal than in country elevators. To the charge for use of warehouse space must be added interest, insurance, and such loading and unloading as is directly incidental to storage and would not have occurred if the wheat had been sold to the proximal consumer directly on arrival at the terminals. Insurance, in country elevators and terminals, should cover the hazards of fire and explosion. Owing largely to the inflammable and obsolete construction of many

elevators, the weighted insurance rate may be fairly regarded as excessive for the value of the grain, though not for the risk. Wheat in storage is usually hedged, and the cost of hedging is also to be added. As a matter of fact, the hedging position is often the determining factor in the commercial terminal storage of wheat.

The services in connection with selling and storage include the cost of future trading, both hedging and speculation. By costs is here meant direct commissions. There is no way of appraising the costs of hedging except from the books of hedging elevators and millers. In agrarian trade-philosophy it seems to be assumed that when hedging is profitable the gains are kept by millers and elevators and when unprofitable the losses are passed back to growers; but this assumption is too simple to be tenable. We take it for granted that some of the cost, gain, and loss falls on the grower, some is passed on to the consumer, while some is borne by mills and elevators. A discussion of the costs of hedging, as separated from the price insurance of hedging, is in any event very illusive and confusing.

In interpretation it is not possible to separate cash transactions from deferred transactions, meaning by cash transactions the passage of wheat directly from farm to proximal consumer without more than incidental storage, and by deferred transactions the more or less prolonged storage required to adapt a seasonal crop to continuous consumption. The profits of cash transactions are appraisable by enumeration and valuation of the services directly concerned. Measurement of the profits of deferred transactions has been sought in the spread between early and later price quotations, with consideration of handling and selling charges. The middlemen dealing in cash transactions deal also in deferred transactions, and it is impossible to adjudge the profits of middlemen in cash transactions without adjudging also the profits in deferred transactions.

Wheat growers contend that they are overcharged for the services of handling and selling when the wheat passes directly from the farm to the mill in the fall of the year. They also contend that they are over-

charged for storage and the seasonal risk of carrying when wheat is carried through the winter. Segregating the services as sharply as may be possible, wheat growers contend that charges over the entire range of middlemen's operations are too high—too high for handling, too high for selling, too high for the insurance of hedging, too high for storage over the season. The political spokesmen of the wheat growers sometimes talk as though the farm price of wheat had been regularly and heavily reduced by odious exploitation by middlemen in the handling and selling of wheat. On the other hand, the defenders of the present system of marketing sometimes talk as though the grain trade were an eleemosynary institution. It is necessary to particularize the inquiry in order to determine

where the truth lies. In particular, it is a matter of importance to compare, whenever practicable, the operations of existing co-operatives with those of middlemen.

There are several ways of evaluating the spread or margin between the price received for wheat by the grower and that paid by the miller and exporter. Any viewpoint arbitrarily employed is likely to lead to a distorted inference. The spread between grower and consumer may be studied from the outside by means of price quotations or from the inside by direct tabulation of itemized charges. The one is secured by subtraction of average price quotations in the two positions; the other is a cumulative result secured by addition of successive items. These are considered in the following sections.

III. METHODS OF MEASURING THE PRICE SPREADS

The meaning and interpretability of a spread depends on the accuracy, specificity, and comparability of price quotations. In most discussions too little attention is paid to the imperfect character of the price data.

What is the cash price of wheat? It is a more or less arbitrary figure within a range, the methods of determination varying with each region and in different cities within regions, and to some extent from year to year. In the principal centers are recorded cash sales, by cars, grades, and varieties.¹ Sales are reported in warehouse, on track, to-arrive, on consignment, and for future delivery. We have opening and closing quotations and the high and the low. On prominent cash markets, such as Minneapolis, prices within specified grades are reported for wheat just as for cattle: ordinary to good, good to choice, choice to fancy.

A weekly average of the daily mean between high and low prices is not the same as the weekly average of the daily closing prices, or the average between the opening

and closing prices. An average of the prices for daily carload sales for the different grades and varieties does not give the same figure as an average of the quotations within the daily range. In some parts of the country cash wheat prices are still upon a direct spot basis, a specified figure by grades or samples. But for the most part, cash offers (by sample or analysis or specified protein content) are on the basis of a future option, so many cents below or above a specified option. Cash prices may be quoted for No. 1 Red Winter wheat at 5-15 cents over the May option, for No. 1 Dark Northern at 4 cents under to 40 cents over the May option—these merely as illustrations of the wide variations in prices that are the reflections of premium qualities not revealed in the government grades.

Quotations for the several official grades of wheat of standard milling varieties vary from each other in a fluctuating manner. For example: recently in Winnipeg No. 1 was 40 cents above No. 6, and in Minneapolis No. 1 was 35 cents higher than No. 5, with the intermediary grades ranging between. But it would be erroneous to assume that mill purchases here and in Canada are being made at corresponding ranges. The buying records of large mills will show differences of 20 or more cents a bushel

¹The Department of Agriculture issues in *Crops and Markets* the daily weighted price per bushel of reported cash sales at stated markets; but this weighting cannot be regarded as representative of mill purchases because of the small volume of reported cash sales.

between different wheats in the same government grade, due to variations in protein. Wheats within a grade may be priced on a graduated scale of protein-content. A weighting of the mill prices of wheat might be secured from mill records; it could not be guessed at from quotations of prices by grades on the different cash markets.

The Federal Trade Commission has used what it called "monthly average prices . . . based upon daily mean spot prices of contract grades of wheat," of which "a representative average is obtained by using the lowest priced variety for each month."¹ The conditions are not comparable from year to year. The wholesale wheat prices used by the Bureau of Labor Statistics in computing the wholesale price index "are those ruling on the floor of the exchange for grain shipped in by country elevators."² These are limited to reports from Chicago, Kansas City, Minneapolis, and Portland, for a few grades (chosen arbitrarily and without reference to premiums), more or less an average of ranges and without the possibility of weighting for the volume of transactions.

To use such average prices of wheat as representing the average wholesale price (transportation considered) paid by mills and exporters, is misleading, since the figures are in themselves incomparable both by regions and by seasons, contain inherent bias, and permit no allowance for the influence of plus-and-minus errors. To contrast such wholesale prices with the available farm prices amounts almost to a comparison of imponderables. From the characteristics of the price data themselves, one would expect conflicting results in different seasons; nor could one expect averages over a number of seasons to wipe out the error and bring out the truth.

A careful comparison of cash prices and average prices in different markets and in different years, as reported from different exchanges and published in different trade

papers, indicates that they are not reliably comparable; they are not real averages at all and are devoid of weighting. It is also clear that the prices of the trade, the United States Bureau of Labor Statistics, and the Federal Trade Commission are not comparable. One may say of these price averages in particular what Black and Price have remarked of averages of marketing margins: "They are derived in different ways, represent dissimilar conditions, or include different things."³

Country wheat prices are not determinable on the basis of quotations, as in the case of terminal prices. Buying practices are various. For members of co-operative associations there is no country price of wheat, since the wheat is delivered against a prepayment and at the end of the season the grower receives a settlement corresponding to a prorated accounting. Country buyers for mill elevators buy on sample and specifications, following instructions. Country elevators belonging to line companies purchase on sample and grade, in accordance with instructions. A great deal of wheat is shipped from country elevators without grading under agreement between terminal buyer and country seller as to inspection, grades, and prices. Independent country elevators, farmer-owned or commercial, follow market letters or bulletins in accordance with their ideas as to local values. Some country elevators buy wheat to fulfil bids to-arrive at terminals. Buying prices of hedging country elevators would be different from buying prices of non-hedging elevators. Prices are modified by presence or absence of local competition. Cash terminal and option prices have varying influences on cash country prices in different areas. To a large extent country prices are the result of haggling within a range determined by terminal market quotations more or less arbitrarily applied. Country purchases are commonly overgraded and overpriced, with the profits of dockage and mixing as the counterweight. The most representative weekly country prices are not the street prices or published local quotations of country elevators; they stand on the books of farmers, line elevators, and mill elevators, but are not public.

¹ *Report of the Federal Trade Commission on the Grain Trade*, September 1924, VI, 65.

² "Wholesale Prices, 1890 to 1919," *Bulletin of the United States Bureau of Labor Statistics*, No. 269, July 1920, p. 27.

³ John D. Black and H. Bruce Price, "Costs and Margins in Marketing," *The Annals of the American Academy of Political and Social Science*, January 1925, p. 199.

The serious shortcomings in price quotations render inaccurate and inconclusive to an indeterminate degree the measurement of price spreads of various kinds. These will be illustrated if we summarize the methods of measuring (1) seasonal price spreads and (2) the spread between farm price and mill or export price.

1. The usual method of estimating the seasonal spread is to compare prices in the fall and in the spring on the theory that wheat must tend to be higher in the spring than in the fall by enough to cover carrying charges. This rests on the theories of the carrying charge and the assumption of the risk of waiting by speculators, it being assumed that the crop is actually sold in the fall (if a farmer holds his wheat, he as grower in effect sells it to himself as speculator), to be later distributed to proximal consumers during the season at a price increase that covers handling, selling, and storage costs. In practice, one may try to measure this (a) by comparing cash prices of wheat in the fall and in the spring, (b) by comparing September and December options with the next May option, or (c) by comparing the September–November cash price with the then contract price of the May futures. In undertaking such comparisons one may either employ long-time averages or short-time periods, including or rejecting obviously abnormal seasons. If included, it is difficult to allow for the effects of abnormal years. No matter which sets of prices are employed, one observes variations and erratic fluctuations, and there is difference of opinion as to which kind of average is best.

According to Boyle,¹ over a period of twenty years before the war, the spread between the average cash prices in September–October–November and March–April–

May in Chicago was 7.5 cents per bushel. According to the Federal Trade Commission,² this spread in Chicago in the period 1896–97 to 1915–16 was 7.1 cents per bushel. According to the Federal Trade Commission, the average spread in the 30-year period 1886–87 to 1915–16 was 4.8 cents. According to Green,³ the average spread in Kansas City in the 32-year period 1892–93 to 1923–24 was 10 cents. According to Black and Price,⁴ the corresponding seasonal variation during the years 1904–13 was 3.3 cents. Boyle's quotations were average of high and low for contract grade of predominant variety; the Commission used lowest quotations for contract grade of any variety; Green used quotations for top No. 2 Hard Winter; the quotations of Black and Price were on No. 1 Northern at Minneapolis. However long-time averages may agree, the figures for single years indicate that measurement of the spread with the use of price quotations is hazardous when applied to a single year.

The spread in Canadian wheat may be illustrated by Table 1, indicating a narrow and comparable margin between average prices in the autumn and spring.

TABLE 1.—SEASONAL SPREAD OF CANADIAN WHEAT, 1900–14*

| (Cents per bushel) | | | |
|--------------------|-----------------------|--------------|-----------------------|
| Month | Average autumn prices | Month | Average spring prices |
| September..... | 90.6 | March..... | 93.7 |
| October..... | 88.9 | April..... | 93.8 |
| November..... | 88.5 | May..... | 96.2 |
| Average..... | 89.3 | Average..... | 94.6 |

Seasonal spread 5.3 cents per bushel.

¹ James E. Boyle, *Chicago Wheat Prices for Eighty-one Years*, 1922. Recomputed for period 1895–96 to 1914–15.

² *Op. cit.*, VI, 68.

³ R. M. Green, "Seasonal Fluctuations of Wheat Prices," *Kansas Agricultural Experiment Station Circular 121*, December 1925, p. 2; see also Call, Green, and Swanson, *ibid.*, *Circular No. 114*.

⁴ John D. Black and H. Bruce Price, "Co-operative Central Marketing Organization," *University of Minnesota Agricultural Experiment Station Bulletin 211*, April 1924, p. 9. Also, H. Bruce Price and Charles M. Arthur, "Management Problems of Farmers' Elevators," *Bulletin 224*, November 1925, p. 44.

* Data, condensed and rearranged, from W. A. Mackintosh, "The Canadian Wheat Pools," *Bulletin 51* of the Departments of History and Political and Economic Science in Queen's University, Kingston, Ontario, Canada, November 1925, p. 14.

Directly considered, such a comparison of seasonal price spread includes no services in handling and selling. Thus, the importance of the factor of seasonal storage is exaggerated. Some of the wheat of a crop is milled within the first month after harvest, some in the last month before the next harvest; the average storage, somewhere by

someone, is over five months for the wheat domestically consumed. The handling and selling charges apply to all wheat sent to mills or into export, whether seasonally stored or not. Any undertaking to determine the costs added to wheat in the course of distribution must, therefore, adequately evaluate both the charges for seasonal storing and for handling and selling.

2. The ideal method of determining the spread would be to secure (region by region) the weighted f.o.b. farm price of wheat at elevator door and contrast this with the weighted c.i.f. mill price and the f.o.b. port price. Since by far the largest portion of each merchandised crop passes into milling, the weighted c.i.f. mill price contrasted with the weighted f.o.b. farm price would give approximately the country-wide spread, including storage, transportation, handling, and selling charges. This method is impracticable for the reason that the mill prices are not obtainable.¹ Even if they were obtainable from representative mills and were collectable by regions, the fact that premiums are paid for particular milling qualities would tend to vitiate the serviceability of such figures as a cross-section, to which must be added further the disturbing influence of varying distances of transportation from farm to mill. In addition, between the farm and the mill occur the price changes introduced by mixing. Even if approximately representative c.i.f. mill figures were obtainable, we possess no reliable farm prices with which they may be contrasted, since information on the weekly rate of marketing and the average weekly farm price is not extensive enough to enable one to secure by regions and types an approximate figure for the f.o.b. weighted farm price.² During the war such a determination of spread might have been computable from the records of the United States Grain Corporation and the Milling Division of the United States Food Admin-

istration. But a spread thus determined would mean little for the present consideration.

An insoluble difficulty in current quotations of wheat prices at mills, terminals, and ports lies in the widely varying transportation charges included in their valuations. About a sixth of the wheat crop is ground in the county in which it was grown. In each season the mills, terminals, and ports in the different wheat regions draw wheat in different amounts from different directions and through different distances. In different years one cannot expect the freight haul included in the average bushel of wheat at mill or seaboard to be comparable; the wheat-revenue of our railroads varies from year to year. Not only are freight charges higher since the war, but variations in the movement of wheat have been more pronounced. It is for this reason also hazardous to compare prices in different years, since weighted differences in freight charges may possibly be several cents a bushel in different years.

Though it is not possible to secure from mills the purchase price of wheat, it does seem possible that a weighted weekly price of flour might be used as index of wheat price, if one could assume the conversion factor of the mills to be approximately constant during a season. Then one could attempt for each season to figure out a weighted price of milling wheats from the weighted price of straight flour. Considered from the standpoint of quality of the source material, possibly a better figure for the price of wheat could be thus secured than is obtainable from market quotations of wheat prices.

It is possible to secure from official records a weighted figure for the port price of wheat, since this is reported by the exporter to the Department of Commerce. The exporter has the option of reporting either the selling price or the market value of the wheat if sold at the port instead of passing into export. Exporters usually report the market value. It has been the opinion in government circles that exporters' valuations correspond closely to the value of wheat at the time, a view also held by the Federal Trade Commission. The reported

¹It would be possible to secure a mill price of wheat for alternate calendar years if the value of wheat ground as reported in the biennial Census of Manufactures were segregated from the total cost of all materials reported; this unfortunately is not done.

²The average monthly farm price of wheat issued by the United States Department of Agriculture, based on prices reported for a single day, is not adapted to this comparison.

value of the average bushel of wheat passing into export is probably more dependable than any average mill or farm price we possess.

With the use of the reports of the Department of Commerce¹ one may determine the weighted f.o.b. port price of the export wheat of a crop year, to be contrasted with the weighted f.o.b. farm price of the crop year if this were available. The f.o.b. port price is not, however, directly comparable in time with the f.o.b. farm price or market price, since there is a variable lag in the movement. The value of any possible com-

parison between f.o.b. port price and f.o.b. farm price is further qualified by the fact that in different years the export wheats come in different proportions from the different regions and have been hauled different distances; also, by the fact that export wheats (outside of some durum and white Pacific wheat) usually represent wheats that have been mixed for the purpose of just meeting the deliverable Liverpool contract grade, with eventual premium or discount, and have, therefore, an average quality considerably lower than or at least different from the average quality of the crop.²

IV. SOME ANALYSES OF SEASONAL SPREADS

A careful and thoroughgoing analysis of seasonal variations in wheat prices would require better price data than have been currently available and the use of refined statistical methods on which expert statisticians are not yet in full accord, including the elimination of the disturbing factor of price trends. Most, if not all of the published analyses are defective on one or more of these grounds. It is, however, worth while to summarize certain of these studies to see what conclusions are now available. Some of these have been already mentioned above, but the Federal Trade Commission reports require fuller presentation. We limit ourselves to the spreads between fall and spring cash prices and between autumnal prices for cash wheat and for the May option. Comparisons between the September or December futures prices and those of May are omitted because

extraneous elements enter that cannot be excluded or evaluated.

The Federal Trade Commission has prepared ten-year averages of monthly average prices for wheat in Chicago, from 1886-87 to 1915-16. These are presented in Table 2, with 30-year averages computed by the Food Research Institute.

Taking the average of the averages of September, October, and November, we obtain the figure 84.55 cents per bushel; the average for May is 92.11 cents per bushel. Thus, the average spread between autumnal and May prices was 7.56 cents per bushel. On the average during this period a grain merchant in Chicago could have purchased wheat in the fall, carried it through the winter, and sold it in May at an advance of 7.56 cents—at least, that is the direct interpretation to be placed upon these figures.

The Commission collected average figures for computed carrying costs at Chicago over the same period, including storage, interest, and insurance.³ It is thus possible to state the average carrying cost that would have been incurred by the merchant who purchased the average bushel of wheat at 84.55 cents, placed it in storage on the first of November, and sold it the first of May at the average May price of 92.11 cents. This average charge was 9 cents a bushel. In other words, the average carrying charge for the average bushel over the thirty-year period was 1.44 cents per bushel in excess of the increase of the average May price

¹ It ought to be possible for the Bureau of Foreign and Domestic Commerce so to reorganize the reporting of declared export wheat valuations as to make these uniform as well as reliable.

² The Federal Trade Commission was directed by resolution of the Senate to investigate "the margins between farm and export prices." A perusal of the section of the report devoted to this specific subject (*Methods and Operations of Grain Exporters*, June 1923, Vol. II, chap. vi, p. 166) reveals that the Commission, recognizing "the futility of using the average farm price for the entire country for comparison with export prices," made no attempt to formulate an idea of the weighted margin between the f.o.b. farm price and the f.o.b. export price, minus rail transportation. This reservation is deserving of approval.

³ *Report of the Federal Trade Commission on The Grain Trade*, September 1924, VI, 195.

over the average autumnal price. This comparison is based on the idea that wheat is a unity, that the middleman had no other expenses except the three denominated items (which is not true), and that he had no sources of profit connected with the trans-

cash purchase with storage under insurance and cash resale was better than cash purchase, hedged in the May future, stored under insurance, and delivered on the May contract. This comparison assumes that the hedging merchant would have held the

TABLE 2.—TEN-YEAR AVERAGES OF MONTHLY AVERAGE PRICES FOR CORRESPONDING MONTHS OF THE DIFFERENT YEARS, FOR WHEAT AT CHICAGO*

(Cents per bushel)

| Group of ten years | July | Aug. | Sept. | Oct. | Nov. | Dec. | Jan. | Feb. | Mar. | Apr. | May | June |
|---------------------|-------|-------|-------|-------|-------|-------|--------|--------|--------|--------|--------|--------|
| 1886-87 to 1895-96. | 75.06 | 76.08 | 76.85 | 77.68 | 76.94 | 76.05 | 75.25 | 75.77 | 75.85 | 77.45 | 79.19 | 76.11 |
| 1896-97 to 1905-06. | 77.08 | 77.15 | 79.27 | 79.82 | 80.66 | 81.63 | 82.02 | 83.54 | 81.87 | 82.07 | 86.50 | 81.68 |
| 1906-07 to 1915-16. | 95.93 | 94.07 | 96.53 | 96.99 | 96.19 | 99.34 | 103.26 | 105.75 | 103.97 | 106.67 | 110.64 | 102.71 |
| Average "..... | 82.69 | 82.43 | 84.22 | 84.83 | 84.60 | 85.67 | 86.84 | 88.35 | 87.23 | 88.73 | 92.11 | 86.83 |

* Table 15, *Report of the Federal Trade Commission*, Vol. VI, *Prices of Grain and Grain Futures*, p. 68.

" Added by Food Research Institute.

action outside of the direct purchase, storage, and resale (which also is not true). This is the average statistical position that would have been occupied by the average cash grain merchant, assumed to purchase for cash in the fall, carry through the winter, and sell for cash in May. But this assumption is applicable only to occasional cash grain speculators; the terminal operator hedges his purchases.

The Commission computed another spread—namely, the spread between the average cash price in the autumn and the average autumnal price of the May future contract—on the assumption that the merchant made his purchase in the autumn, hedged with a selling contract in the May futures, and delivered the wheat on that contract at the corresponding May future price. Table 3 (p. 112) gives the results.

According to the figures, the average spread between the September–November cash price and the average then-existing price of the May futures was 3.64 cents. This represents a loss of 5.36 cents per bushel.¹ It makes a poorer showing than the plain spread of cash prices. According to these figures, as an average transaction,

wheat for delivery on the May contract, which is unusual, since only a small amount of wheat sold on May contracts is delivered.

To recapitulate:

Average spread in cash prices... 7.56 cents per bu.

Average spread between cash

prices and May contract

prices 3.64 cents per bu.

Average cost of six months'

storage 9.00 cents per bu.

Obviously, if these long-time averages of the Chicago market are to be relied upon, it was not possible to purchase grain in the autumn, pay the storage charges, and come out even; the average loss per bushel was 1.44 cents. Also, it was not possible to purchase wheat and hedge it in the May option and come out even, when making delivery on the May contract; the average loss was 5.36 cents. According to a tabulation of Price and Arthur² for No. 1 Northern wheat between 1905-06 and 1915-16, the average spread between the average of October–November and May was 3.5 cents a bushel. The widest spread in any one year was 8³/₁₆ cents.

The figures of the Commission become still more illuminating (see Table 4, p. 112) when divided into periods of ten years, for which the carrying charges were computed from the tabulation of the Commission.³

From this table we note a heavy and persistent trend of increase in the cash spread, a sharp decline with notable fluctuation in the cash-futures spread, and relative sta-

¹ On the assumption throughout this section that May prices were forecast by the autumnal prices of of May futures. See on this point pp. 128-129, below.

² H. Bruce Price and Charles M. Arthur, "Management Problems of Farmers' Elevators," University of Minnesota Agricultural Experiment Station *Bulletin* 224, November 1925, p. 40.

³ *Op. cit.*, VI, 195.

bility in the average carrying charges. According to this table, a grain merchant, buying wheat in the fall and carrying it unhedged for sale in the spring, would have lost 7.27 cents per bushel in the first period, and 1.23 cents per bushel in the second period, and would have gained 4.18 cents per bushel in the third period. The cash merchant, buying wheat in the fall, hedging

in question. During this time hedging and unhedging grain dealers were carrying on a more or less routine business, contending against varying difficulties, facing ups and downs in prices, making interest on borrowed money and dividends on invested capital, and certainly not engaged in a business exposed to the fluctuations, hazards, and uncertainties suggested by the figures

TABLE 3.—WHEAT: SPREAD OF MAY OPTION ABOVE OR BELOW CASH, 5-YEAR AND 30-YEAR AVERAGES OF MONTHLY AVERAGES, BY MONTHS, CHICAGO, 1887-88 TO 1916-17*

(Cents per bushel)

| Calendar month of trading | Averages for 5-year periods | | | | | | 30-year averages, 1887-1917 |
|---------------------------|-----------------------------|-----------|---------------------|-----------|-----------|-----------|-----------------------------|
| | 1887-1892 | 1892-1897 | 1897-1902 | 1902-1907 | 1907-1912 | 1912-1917 | |
| September..... | + 7.33 ^a | + 7.68 | + 1.34 ^b | + .16 | + 5.26 | + .80 | + 3.76 ^c |
| October..... | + 5.70 ^b | + 7.08 | + 1.73 ^b | + .46 | + 4.40 | + 2.11 | + 3.58 ^c |
| November..... | + 6.18 | + 5.86 | + 1.32 | + .76 | + 3.72 | + 3.70 | + 3.59 |

* Condensed from Table 120, *Report of the Federal Trade Commission on the Grain Trade*, Vol. VI, *Prices of Grain and Grain Futures*, p. 309.

^a Average for three years.

^b Average for four years.

^c Computed by Food Research Institute.

it in the May option, and making delivery at the corresponding May price of that option, would have lost 2.66 cents per bushel in the first period, 6.85 cents in the second period, and 6.56 cents in the third period. According to these average figures, the terminal grain merchant who did not practice hedging was better off in two of the three periods than if he had practiced hedging, but would have gained considerably by hedging in the first period.¹

TABLE 4.—WHEAT: SPREADS BY DECADES IN 30-YEAR PERIOD, 1886-87 TO 1915-16*

(Cents per bushel)

| Item | First decade | Second decade | Third decade | Average |
|---------------------------------|--------------|---------------|--------------|---------|
| Average carrying charge | 9.30 | 7.81 | 9.89 | 9.00 |
| Average cash spread..... | 2.03 | 6.58 | 14.07 | 7.56 |
| Gain or loss..... | - 7.27 | - 1.23 | + 4.18 | - 1.44 |
| Average cash-future spread..... | 6.64 | .96 | 3.33 | 3.64 |
| Gain or loss..... | - 2.66 | - 6.85 | - 6.56 | - 5.36 |

* Compiled from Tables 15 (p. 68), 68 (p. 195), and 120 (p. 309) in the *Report of the Federal Trade Commission on the Grain Trade*, Vol. VI, *Prices of Grain and Grain Futures*.

These figures fail to convince one that they represent the actual experiences of middlemen dealing in wheat over the pe-

of the Federal Trade Commission. If these figures really represented the position of middlemen in wheat during these thirty years, the trade was not only guiltless of the charges placed against it during that time by wheat growers, but made a sorry picture indeed. The irresistible inference is that such figures for spreads do not reflect the actual operations of middlemen in wheat. If actual carrying cost is not contained in the seasonal spread, obviously this factor is submerged under other factors. It is not uncommon to find the price of the May future below the cash price through the fall and winter, as during the present season; but the crop of wheat gets sold just the same.

Such comparisons are used on the theory that there is a definite relationship between cash and futures. Unfortunately, however, assumption is here made in respect to precisely what needs to be proved. One cannot assume that the cash prices and the futures prices of a certain month are comparable from year to year, irrespective of varying volumes of trading and other factors. Cash prices, either spot, to-arrive, or for deferred delivery, are sometimes for grade wheat but more often for discount and premium wheats; there is no way of weighting these so as to compare them, no way of evaluating the effects of the premiums and dis-

¹ A more favorable picture of the relation of spread to carrying charges is to be found in G. Wright Hoffman, *Hedging by Dealing in Grain Futures*, 1925, pp. 73 ff. Cf. also quotation on p. 133 below.

counts. The comparability of cash and futures prices as currently quoted cannot be trusted, even if one believes that properly selected cash and futures prices would display a high positive correlation. Wheat is not a unity, and this prevents both futures and cash prices from being reliably comparable and also prevents prices of different months from being reliably comparable. On the one hand, the grain dealer is in position to sell his cash wheat on a bulge that is not reflected in the price of futures. On the other hand, he is frequently able, by spreading, to increase the margin between cash price paid for the wheat and the original figure for the future in which the cash purchase was hedged.

A comparison of pre-war with post-war spreads for the United States is difficult on account of the abnormalities of trade since the war. In Canada, where the largest fraction of the crop passes into export trade, a comparison is possible with less danger of gross error. When an average is made of the October–November cash closing prices at Winnipeg for No. 3 Manitoba and of the October–November closing prices of the May future, one finds that the average spread was 3.7 cents in 1922, 8.9 cents in 1923, 6.4 cents in 1924, and 5.1 cents in 1925. The average for the four years was 6.0 cents. It is probable that a comparison of the cash and contract prices of the No. 1 would give a somewhat different result. These spreads look fairly normal from the standpoint of the theory of the carrying charge, but they still indicate that a terminal merchant would be close to trouble in most years if he had no other source of income over the winter than the price increase directly represented in the spread between autumnal prices of cash wheat and the May contract.

If it were true that the seasonal spread between farm and mill or port price were so wide as to afford a large profit, more and more middlemen would enter so profitable a business. On the other hand, from the figures quoted above, it is impossible for the computed spread even to cover the costs of storage, interest, and insurance, to say nothing of profits. As a matter of fact, both views are true and both false, depending on circumstances and on seasons.

The width of the cash-futures spread may, however, have an influence on the rate of flow of wheat. The terminal elevator operator buys wheat for storage whenever he finds the futures price so far above the cash price that he sees a profit. Country elevators cannot find a normal market for wheat unless terminal elevators see a profit in the margin between cash and future prices. In such a season, of which the present is an illustration, the business of terminal merchants lies in hand-to-mouth jobbing for mills and exporters, which may, however, be satisfactory enough in itself.

How misleading a comparison of prices in autumn and spring may be, is to be seen in actual business operations of terminal elevators. Sometimes a terminal elevator will profitably sell wheat at the same price per bushel in May that was paid for the wheat in October. How is this explained? The terminal elevator sells in store, and the fee for loading-out pays the cost of loading-in; the value of screenings more than covers the cost of cleaning; the mixing has yielded a profit; the hedge has been positive; therefore, the wheat may be sold for no more per bushel than the price of purchase, and the transaction has still been a remunerative one. According to general practice, the terminal merchant purchasing wheat in the fall, places his initial hedge in December, and keeps on the lookout for advantageous sales, awaiting the time when trading in the May future will become active and will afford opportunity to shift the hedge from December to May. In recent years warehousemen have frequently accumulated stocks of wheat for which there was no visible profit in the carrying charge, on the theory that as the season advanced premiums for cash grain would develop and thus afford a profit.

It is, therefore, always hazardous for wheat growers to judge of the gross or net profits of carrying wheat by comparison of spreads between quoted prices in the fall and spring. This statement is not intended to convey the impression that a collection of comparable and trustworthy price figures is impossible, but does aver that at present no such compilation of trustworthy and comparable data exists.

V. THE SEASONAL SPREAD IN FARM PRICE

We possess no collection of data on country prices of wheat that may be employed to compute the weighted fall and spring prices of wheat in determining the average seasonal spread in farm prices.

The Department of Agriculture collects incomplete figures for primary marketing, inspections, and terminal receipts. If one could secure data on country prices and country movements, one ought to be in position to compute an approximate weighted figure for farm price. The four wheat regions of divergent characteristics make the problem of securing a weighted farm price for wheat very difficult, and it has, indeed, not been seriously undertaken.

The Department of Agriculture series of farm prices is not well adapted to this purpose. It is derived from reports of crop correspondents relating to a single day in each month, and no effort is made to get a weighted average of sales made at various prices during the month. From 1908 to 1923 prices were collected for the first of each month; beginning with January 1924, they have been collected for the fifteenth of each month. The currently published series, summarized in Table 5, employs for years prior to 1924 a mean of two first-of-month prices. At present, in each of about nine districts of each state the reported prices are averaged to secure a district price. State average prices are obtained by taking a weighted average of the district averages, employing the latest available acreage figures as weights. The United States farm price is a weighted average of the state prices, using as weights the latest available crop production data. A different method of weighting was formerly employed.

However useful such figures may be for certain purposes, they cannot be regarded as safely reliable for calculating an index of seasonal spreads. The price for a single day may in certain years be far from representative for the month. Moreover, even if the state averages should remain unchanged from year to year, the weighting according to production would alter the average for the United States. Furthermore, the series is so short, especially in view of the abnormalities of the war and grain-control period,

that reliable statistical measure of seasonal variation, as such, can hardly be secured.

TABLE 5.—WHEAT: FARM PRICE PER BUSHEL, UNITED STATES, 1909-24*

| (Cents) | | | | | | |
|---------------------|----------|---------|---------|-------------------|-------------------|--------|
| Year beginning July | Sept. 15 | Oct. 15 | Nov. 15 | Mar. 15 | Apr. 15 | May 15 |
| 1909 | 94.9 | 97.2 | 99.2 | 104.8 | 102.2 | 98.8 |
| 1910 | 94.8 | 92.1 | 89.4 | 84.6 | 84.2 | 85.4 |
| 1911 | 86.6 | 90.0 | 89.4 | 91.6 | 96.1 | 101.2 |
| 1912 | 84.6 | 83.6 | 79.9 | 79.8 | 80.0 | 81.8 |
| 1913 | 77.5 | 77.4 | 78.4 | 83.6 | 84.0 | 84.2 |
| Average | | | | | | |
| 1909-13 | 87.7 | 88.1 | 87.3 | 88.9 | 89.3 | 90.3 |
| 1921 | 103.4 | 99.9 | 93.4 | 117.0 | 119.0 | 118.8 |
| 1922 | 89.2 | 94.1 | 99.4 | 106.0 | 108.4 | 108.2 |
| 1923 | 91.0 | 94.2 | 93.7 | 98.8 | 95.8 | 96.8 |
| Average | | | | | | |
| 1921-23 | 94.5 | 96.1 | 95.5 | 107.3 | 107.7 | 107.9 |
| 1924 | 114.2 | 129.7 | 133.6 | ^a | ^a | 149.1 |

* Condensed from Table 30, p. 581, *Agriculture Yearbook*, 1924, with insertion of price for May 1924.

^a Not available.

Taking these figures at their face value, the average September-November farm price of wheat in the five years before the war was 87.7 cents; the average March-May price was 89.5, an increase of 1.8 cents; the average May price of the same crop years was 90.3 cents, an increase of only 2.6 cents. Directly interpreted, this would mean that growers who in those years held wheat from fall to spring received only 1.8-2.6 cents increase as the reward of waiting, a sum insufficient to cover carrying charges on the farm. Disregarding the crop of 1924, which was obviously abnormal for the purpose of this comparison, the average September-November price of wheat in the three post-war years 1921-23 was 95.4 cents; the average March-May price was 107.6 cents, an increase of 12.2 cents; the average May price of the same period was 107.9 cents, a difference of 12.5 cents per bushel. Interpreted directly, this would mean that growers who held wheat through the winter over this period received 12.2-12.5 cents as the reward of waiting, considerably more than enough to cover the cost of carrying on the farm. But can anyone infer that these two

sets of figures objectively represent the pre-war and post-war state of affairs? The writer is unable to entertain this inference.

Fragmentary data on seasonal farm prices of wheat are available in the records of state departments of agriculture and of regional and state co-operative associations. The figures, however, are not uniform as to method of collection, cover short periods, are incomparable in quality and meager in amount, and do not lend themselves to interpretations of the seasonal spread.

Finally, it might be possible to secure an idea of the seasonal spread of farm price of wheat by an examination of the accounts of country elevators. The writer has been accorded the privilege of inspecting the accounts of representative line-elevator and mill-elevator companies. These data have the advantage that they correspond to running transactions and are naturally more accurate and representative than quotations. Such data are not now available for public use, but the writer has seen enough to become convinced that a far better idea of the seasonal farm price of wheat could be obtained than is now available if the Department of Agriculture could arrange to use the purchasing transactions of representative selected elevators in different parts of the country, so employed, as is the case in census practice, as to conceal the identity of the concerns. The purchasing accounts of commercial elevators might ad-

vantageously be compared with those of co-operative elevators. In the use of such data some attention would need to be given to overgrading, dockage, and premiums, unless one preferred to compute the price of wheat in the exact state in which it was marketed. But with all qualifications and limitations applied, it seems clear that the country elevator, not the crop correspondent, is the proper source of verifiable figures for the farm price of wheat.

We arrive, therefore, at the conclusion that we possess no dependable idea of the seasonal farm-price curve of wheat, either pre-war or post-war, the periods of observation having been too short. The wheat grower, considering whether it is to his commercial advantage to sell in the autumn and let someone else pay for the carrying charges through the winter, or carry the wheat through the winter himself and sell in the spring, is primarily concerned with farm prices and not with wholesale terminal prices, since he cannot assume a uniform margin between farm price for his wheat and wholesale terminal price. We are unable to find any dependable estimate of what it would cost the grower to carry his wheat through the winter, with adjustment for losses, considered as a country-wide practice. We are likewise unable to uncover any dependable estimate of how much higher is the average farm price of wheat in the spring than in the fall.

VI. THE CHARGES OF MIDDLEMEN

Safe conclusions on the subject of middlemen's gross and net returns are at present derivable only from a direct scrutiny of the several items of service that are carried out by middlemen.

In considering middlemen's charges one encounters difficulties and discrepancies in the accounting practices. Disregarding these and transportation costs, one may undertake to estimate middlemen's charges either as gross profits or as expenses. Gross profits correspond to difference between purchase and sale prices. If interest, depreciation, and upkeep are included as costs, expenses amount to much the same thing,

except for reward of enterprise over and beyond interest on capital. Profits or losses on hedging must find a place in both gross profits and expenses. Wheat growers are interested in middlemen's gross profits because they hope a co-operative association may reduce them; they are interested in net profits because they hope these may be added to the farm price of wheat. Wheat growers are interested in the expense accounts of middlemen because they have been led to believe that these include exorbitant salaries, usurious rates of interest on capital and credit, and concealment of net profits by exaggeration of the costs of

depreciation and upkeep. While comparison of expense accounts with gross profits would be illuminating if consistently practiced, because of accounting difficulties and discrepancies, expense accounts and gross profit accounts quite as often confute as complement each other.¹

It is well to apprehend in advance the imperfections of the available data. Country elevators to a surprising extent keep no books,² and such accounting as is practiced is very apt to be imperfect. Mill, line, and terminal elevator companies keep accurate accounts. Their books show purchase prices and sales prices as running transactions and yearly tabulations. They list the verifiable and comparable items of handling, selling, storing, and financing in an annual report. Nevertheless, the accounts of different companies are to a considerable extent not comparable. The Millers' National Federation is just now trying to establish a uniform system of accounting among its members; grain dealers in the different regions are in much the same position as flour millers.

The investigations of the Federal Trade Commission included studies of both country and terminal elevators, also both co-operative and commercial concerns. The Commission made selection of elevators by regions and cities. It devised and practiced a uniform system of accounting analysis. In some particulars the accountings of the Commission differed from those employed by the elevator companies, particularly terminal concerns. Treatment to be accorded inventories and hedging results and price quotations were points in controversy between the commercial elevator companies and the Commission.

It would be desirable to eliminate effects of varying periods of storage by segregating the price spreads. First, the initial spread of the country elevator could be obtained by subtracting average country elevator purchase price from country elevator sales

price; then, a second spread secured by subtracting terminal elevator purchase price from terminal elevator sales price; and for the export fraction of the crop a third spread, obtained by subtracting fobbers' purchase price from exporters' f.o.b. sales price. But if spreads determined in this manner are to be reliable and representative, the methods of collections of data need to be uniform and comparable. It is clear, however, that these data are not available in uniform and comparable form, when considered in the light of technique of collection, presence of inherent bias, and inability to estimate plus-and-minus errors. Something of this sort has been attempted by the Federal Trade Commission³ in so-called grain-flow statistics, the tracing of the geographic flow of grain from producer to consumer through the successive channels, arriving at a final cumulative figure for average price spread. Apart from the weakness in the scheme arising from complexity of data and the necessity of arbitrary assumptions, the final figure for total spread contains the error resulting from varying lengths of haul in the different regions in different years. Such a grain-flow spread is not suitable for comparison with a seasonal spread determined from quotations.

The publications of the Commission on the expenses of both country and terminal elevator do not readily lend themselves to analysis, criticism, or approval. The data are not presented in sufficient detail, source materials are not available, the specific procedures are not always described, and when described are not always clear and verifiable. No analysis of the treatment of the Commission accorded to the items included in expenses, inventories, and hedging could be properly carried out except with the simultaneous use of the corresponding accountings of the elevator units concerned. These are not available. It is, therefore, not safe for one to appraise the items in the expense accounts of country and terminal elevators with a view to making inferences as to the hopefulness of economies being achieved through co-operative marketing associations. In the present condition of the evidence, middlemen's charges can be appraised only on the basis of consideration of the spread of gross profits.

¹ A discriminating discussion of analyses of middlemen's spreads is to be found in the excellent article of Black and Price on "Costs and Margins in Marketing," *The Annals of the American Academy of Political and Social Science*, January 1925, pp. 184 ff.

² According to *Bulletin 217* of the Iowa Agricultural Experiment Station, only a sixth of the country elevators practice good bookkeeping.

³ *Op. cit.*, IV, 69.

The Federal Trade Commission has published¹ a series of average margins, the average cost of marketing grain, in which the gross profits of the country elevators and of terminal middlemen are separated from each other and also from transportation costs. These are shown in Table 6.

TABLE 6.—DISTRIBUTION OF COMMERCIAL GROSS PROFITS AND AVERAGE PRICE SPREADS PER BUSHEL IN THE MARKETING OF WHEAT*

| (Cents per bushel) | | |
|---|--------------------|--------------------|
| Scope | 1912-13 to 1916-17 | 1919-20 |
| <i>Country elevator:</i> | | |
| Average price spread between grain purchased and sold ^a | 6.05 | 11.93 |
| Hedge gain (+) or loss (—).... | —0.45 | ^c |
| Commercial gross profit per bushel ^b | 5.60 | 11.93 |
| <i>Terminal middlemen:</i> | | |
| Average price spread between grain purchased and sold ^a | 7.58 | 6.96 |
| Hedge gain (+) or loss (—).... | —3.32 | ^c |
| Commercial gross profit per bushel ^b | 4.26 | 6.96 |
| <i>Country and terminal middlemen:</i> | | |
| Average price spread between grain purchased and sold ^a | 13.63 | 18.89 |
| Hedge gain (+) or loss (—).... | —3.77 | ^c |
| Commercial gross profit per bushel ^b | 9.86 | 18.89 |
| Transportation | 11.08 | 14.31 |
| Total spread..... | 24.71 | 33.20 |

* Condensed and rearranged from Table 58, *Report of the Federal Trade Commission on the Grain Trade*, Vol. IV, *Middlemen's Profits and Margins*, p. 79.

^a Gross profit before including hedging gains and losses.

^b Including hedging gains and losses.

^c No hedging.

This table has been set up by study of wheat flow. The data on country elevators were obtained from schedules received from some 10,000 units. The data on terminal operations were obtained from the records of seven commission houses, five shippers, and three terminal-elevator operators in Chicago; from four commission houses and six terminal elevators in Minneapolis; and from five commission houses in Duluth. These data were supplemented by special

questionnaires in the three cities mentioned and by schedules from other cities prominent in the wheat trade.

According to these figures, the average gross profit of the country elevators was 5.60 cents per bushel in 1912-13 to 1916-17 and 11.93 cents in 1919-20. The average gross profit of terminal middlemen was 4.26 cents per bushel in 1912-13 to 1916-17 and 6.96 cents in 1919-20. The average of the two series was 8.77 cents for country elevators and 5.61 cents for terminals.

But this average has little meaning. Striking is the disproportionate increase in the gross profits of country elevators in 1919-20. While for terminal elevators gross profit per bushel was 163 per cent of the earlier average, gross profit of country elevators was 213 per cent of the earlier figure. It is noteworthy that cost of transportation in 1919-20 is given as only 129 per cent of the earlier figure, by far the lowest relative increase of any one of the three groups participating in the spread between grower and miller. In judging carrying charges from year to year, one must bear in mind that these tend to move with the price level of wheat, but inversely to the purchasing power of the dollar. The individual returns exhibit wide variations, even beyond those naturally to be expected as the expression of differences in volumes of operations. We cannot compare country elevators or co-operative associations that sell direct to millers with those that sell to terminal elevators, since in part mills buy directly to save middlemen's charges.

The Joint Commission of Agricultural Inquiry made a cursory estimate of country elevator charges for 1920-21² in one hundred and twenty-seven selected elevators (volumes of transactions unstated) east of the Rocky Mountains. The method of the Commission consisted in obtaining the prices paid to producers and by terminals, with subtraction of transportation cost. The average elevator margin was found to be 15.6 cents per bushel (in the *Report* the average is erroneously given as 16.21 cents). The figures vary from 7.9 to 26.3 cents per bushel, for which some unusual but unstated influence must have been responsible; and we are convinced the figures contain an accidental bias in the upward direction.

¹ *Op. cit.*, IV, 69-134.

² *Report of the Joint Commission of Agricultural Inquiry*, 1922, Part IV, *Marketing and Distribution*, pp. 22-35.

We are unable to accept these figures as a representative cross-section of the present operations of middlemen in the United States. In *The Wheat Situation, a Report to the President*, by Secretary Wallace, on page 115, is a tabulation of operating costs of forty Kansas elevators for the crop year of 1921-22, which gives as an average of total operating costs 4.37 cents per bushel.

In the course of the investigation of the United States Tariff Commission on costs of production of wheat in the United States and Canada¹ the gross charges of country elevators were given as 7.75 cents per bushel for the crop of 1922-23, this applying to hard spring wheat.

Black and Price have issued a study of margins in country elevators in the spring wheat region, of which the tabular material has been condensed in Table 7. The expenses per bushel during 1920-23 were 7.38, 6.50, and 4.68 cents—much lower than those of the Federal Trade Commission, with heavy downward trend.

TABLE 7.—MARGINS, EXPENSES, AND PROFITS OF FARMERS' ELEVATORS*

(Cents per bushel)

| | 1920-21 | 1921-22 | 1922-23 | Average |
|--------------------------------------|-------------------|---------|---------|-------------------|
| Gross trading profits (margins)..... | 2.4 | 7.8 | 6.7 | 5.6 |
| Expenses..... | 7.4 | 6.5 | 4.7 | 6.2 |
| Net profits..... | -5.0 ^a | 1.3 | 2.0 | -0.6 ^a |
| Grain trading profit... | 1.1 | 6.0 | 5.0 | 4.0 |
| Other profits..... | 1.3 | 1.8 | 1.7 | 1.6 |

* Data from "Costs and Margins in Marketing," by John D. Black and H. Bruce Price, *The Annals of the American Academy of Political and Social Science*, January 1925, p. 190.

^a Loss.

Finally, through the kindness of Professor W. E. Grimes of the Kansas State Agricultural College, we have been placed in possession of data on operations of independent and co-operative country elevators in Kansas for the crops of 1920 and 1921. The average costs, including interest, were

6.75 cents in 1920 and 5.97 cents in 1921, the co-operative elevators reporting slightly lower costs than the independent elevators, probably on account of larger volume.

These various estimates of country elevator charges are not strictly comparable, since the procedures are not identical and the years are not always the same. Elevator costs were at their peak for the crop of 1919-20, had declined somewhat for the two successive crops, and have declined since. With all allowance, however, for non-comparability, when the average of these seven estimates of expenses of country elevators, that correspond closely to gross profits in the terminology of the Commission, namely 6.2 cents per bushel, is contrasted with the pre-war gross profit of 5.6 and the post-war gross profit of 11.93 cents reported by the Commission, the comparison casts grave doubt on the high post-war figure of the Commission. This is confirmed by the private reports of two large line elevator companies whose average expenses per bushel in the years 1920-21-22 were practically 6.9 cents. Finally, confirming the general inference but less comparable in time, the country elevator charges of the state co-operative associations in the hard winter belt are much lower than those reported by the Commission for 1919-20.

The estimated gross profits of the terminal middlemen, as given by the Commission, are less open to question than those of country elevators. We have, however, less data available for comparison. The Tariff Commission fixed the terminal market charges for the crop of 1922-23 (the gross cost of carrying spring wheat from the country elevator to Buffalo minus transportation) at 3.58 cents, a figure lower than one would expect the average for the United States to be. Just now charges are lower than those for the crop of 1919-20. Terminal charges vary widely from year to year with volume of business. A review of the material in the appendix of the *Report of the Federal Trade Commission* leads to the inference that the estimates are somewhat high, but how much is of course only a surmise.² No one can venture a conjecture as to what might be called the bulk-line margin of either country or terminal ele-

¹ *Wheat and Wheat Products*, U.S. Tariff Commission, 1924, p. 13.

² Discussing this point Black and Price conclude that "One of the reasons that they [warehouse charges] are so high is that they include the cost of a great deal of storage of grain, Minneapolis being a consuming center." Black and Price, *op. cit.*, p. 191.

vators, meaning by this the margin at which, say, three-fourths of the wheat is handled.

The disparity between the seasonal price spreads and the gross profits of middlemen, both reported by the Commission, speak in favor of lower estimates of the margins. Probably the seasonal price spreads are too low and the margins too high. Regarding the total spread between farm and mill as a unit, our inference that the average margin, what the Commission calls the gross profits, in the handling of wheat is substantially lower for the total process than computed by the Federal Trade Commission,¹ is supported by an interesting comparison to be obtained by the use of figures published in the *Agriculture Yearbook* for 1923. On page 624, in Table 34, the weighted average farm price of wheat for the season 1919-20 is given as 222.3 cents; on page 629, in Table 37, the average weighted price of reported cash sales at terminal markets is given as 241.8 cents. This includes transportation. The difference is 19.5 cents. The spread computed by the Commission,² including transportation, is 33.2 cents. This is certainly a striking difference. The estimates are not directly comparable, but the difference in the figures would seem to be greater than the non-comparability of the estimates. It must be recalled that the price for wheat for the 1919-20 crop was fixed by the government and, therefore, our information on both farm price and terminal price was particularly good for that crop.

Co-operative wheat-marketing associations, like some line elevators, are presumed to combine country and terminal functions in one accounting, and their spread should equal the combined spreads of country and terminal elevators. So long as co-operatives sell to terminal elevators as well as to mills and exporters, however, this does not hold, and the existing state co-operative associations do sell to terminal elevators as well as to mills and exporters. For the crop

of 1923 the North Dakota Pool had an adjusted spread of 9.9 cents compared with the spread reported by the Tariff Commission of 11.33 cents. As against this, the Southwest Wheat Growers' Association reported a margin of 14.6 cents. These differences mean little because the spreads are not comparably computed; but they speak in favor of a definitely lower level than suggested by the figure of 18.89 cents of the Federal Trade Commission.

In all probability, the best figure for the gross margin between farm and mill price is to be found in the operations of mill elevators. These are, however, a select group, since they are operated primarily for the purpose of securing particular wheats that are desired by mills owned by these companies. Nevertheless, there is probably less waste motion and greater efficiency in such companies than in other elevator companies, with the exception of a few old-line concerns so situated as to possess a heavy volume of operations in relation to capacity of equipment. Such margins, however, are not available.

The minimum conceivable spread ought to be obtainable from the records of the United States Grain Corporation, being the difference between the price of wheat paid to growers by elevators under license and the purchase price paid by mills, under allocation by the Corporation. This was an abnormally low spread because it was the policy of the Corporation to save transportation and utilize the most effective milling capacities, the flour of each region being a standard extraction of allocated wheats. In addition, it was the policy of the Corporation to export flour instead of wheat and to draw on Canadian wheat for grinding in American mills.

Regarding the Grain Corporation as a commission merchant, 926,942,939 bushels of wheat were purchased for \$2,113,961,695.61 and sold for \$2,147,507,733.42, corresponding to a spread of 3.6 cents per bushel. Interpreted directly, this would correspond to the gross spread of a commission merchant, against which interest on capital and credit, insurance, storage, and administration expenses would have to be charged. This figure included both domestic and for-

¹ "The Federal Trade Commission's figures probably represent the best comparison by types of grain; but they are all too high, probably because of assuming that all grain passes through terminal elevators, and also that most of it is stored there." Black and Price, *op. cit.*, p. 199.

² *Op. cit.*, IV, 79. See above, Table 6, p. 117.

eign transactions. From the accounts of the Grain Corporation one could doubtless compute a figure for margin corresponding to the spread between grower and miller and grower and exporter, but this has not been done. Certainly the bare figure of 3.6 cents per bushel has little direct meaning and cannot be used as a standard of comparison.

In a certain sense it is futile to criticize estimates of the Federal Trade Commission unless one is in position to replace them with more correct figures. It does not do much good to show that an estimate is incorrectly too high without being able to offer the correct one. But the point is of importance because a great deal of agitation in favor of co-operative marketing has been based upon assumption of high margins of operations of both country and terminal elevators.

What is really wanted, beyond the average margin between the farmer and the proximal consumer, is the average net profit per bushel, after interest on investment, accruing to the middlemen as reward for enterprise. Such an adjudgment was not attempted by the Federal Trade Commission; their studies in this direction were confined to statements on net operating income, return on total investment, on borrowings, and on proprietary investment of a selected group of country and terminal elevators. Out of the published data it is not possible to secure figures for net return per average bushel of wheat handled (some of which net profit was derived from arbitrage and spreading rather than from handling) even if the selected elevators were regarded as a reliable cross-section. As a matter of fact, however, some idea of such a figure is to be obtained in the trade. Black and Price¹ suggest 2 cents a bushel as "fairly regular net profit" of country elevators. If terminal elevators, in addition to interest on capital and credit and depreciation of property, could secure a profit for enterprise of a cent a bushel, they would regard the business as highly satisfactory. A great deal of wheat is purchased for storage when the total profit lies in the elevator charges.

The historic and theoretic function of the middlemen in wheat, regarded as a unit, is the carrying of the seasonal crop through the year of continuous consumption, as a cash operation in countries without term markets and as a hedged operation in countries with contract markets, in each instance presumably as a self-sufficient and remunerative commercial function. If the available figures on spreads between wheat prices in the fall and spring are to be relied upon, this idea of the middleman is hypothetical, since these data do not support the view that the predicated carrying of the crop is a remunerative and self-sufficient function.

What is the explanation? Are the available figures for spreads of wheat prices so biased and erroneous as to conceal the truth? Or has the carrying of the crop through the winter ceased to be the primary function of the wheat middleman? We answer, both. A survey of the operations of the trade indicates that the carrying of the crop has become a secondary and almost incidental function, and this quite irrespective of whether the available figures on spreads are correct or misleading.

The wheat middleman, considered as a country-wide unit factor, has numerous and important sources of income. He hedges first in September, then in December, and then in May; he rarely delivers on his future contract, but instead sells his wheat for cash at opportune moments and takes in his hedge. He picks up parcels of distressed wheat and sells parcels to millers, fobbers, and exporters, who, for individual but frequently recurring reasons, are willing to pay premium for prompt delivery. He picks up parcels of premium wheat at grade prices and merchandises them to mills on sample at premium prices. He is fobber for exporter and broker for miller. A commission merchant as well as a dealer, he receives commissions for buying and selling grains and buying and selling futures. He sometimes directly or indirectly lends money to clients at higher rates of interest than he pays, and is sometimes in position to use the money of his clients. He owns elevators and warehouses and rents space and services on toll. He handles coarse grains as

¹ *Op. cit.*, p. 190.

well as wheat. He deals in feeds of all kinds—likewise side-lines, as coal, ice, implements, building materials, etc. He mixes wheats to the improvement of grades, and often this is an item of relatively heavy profit. Finally, since the majority of autumn cash purchases of wheat are hedged, he is in position to practice spreading and arbitrage, and does so, with profits corresponding to the shrewdness of his operations. These items, with others, vary from season to season, and constitute the routine profits of the business.

In seasons when the spread of wheat prices offers a direct profit, this profit is added to the several routine profits otherwise obtained. In years when the spread of wheat prices contains no direct profit, or when there is a "reverse charge," the routine profits carry the business. There is a

tendency on the part of both country and terminal elevator operators to use buying margins that are lower than estimated costs and to rely on premiums, mixing and spreading to make up the difference. In years when the spread between cash and futures is such as to involve a loss, this is usually evaded by declining to carry the wheat and allowing the function to be borne by growers and millers, as is largely the case this season. The price of the May future has been consistently below the cash price and was below that of the December future, growers have restrained their marketing, millers have held down their stocks of wheat, the visible supply has been light, and terminal merchants are carrying little wheat; nevertheless, mill grindings and exports have followed a course to be regarded as entirely normal, in view of the position of supplies and prices.

VII. THE MIXING OF WHEAT

Wheats are mixed in country and terminal elevators, taking advantage of the government standards, in order to improve the grade. The farmer sells the wheat as it arrives from the thresher. Before the days of federal grade standards and inspection, cutthroat competition between grain dealers included overgrading, underdocking, and underpricing of elevation, cleaning, and storage; agreements on these points were used in restraint of competition among grain dealers. In some sections wheat growers suffered from lack of competition between grain dealers, in other sections they profited from excess of competition. The grower sold to the grain dealer who offered him the highest grading and the lowest dockage. When farmer-owned elevators came into existence, they fought commercial elevators largely by higher grading and lower docking. To a considerable extent, therefore, wheat growers became imbued with the idea that they were subjected to under-grading and over-docking whenever the grain trade was in position to do so. This idea has carried over

into the period of federal grades and inspection, and many growers believe that the federal grades are used, if not indeed devised, to mulct them. Repeated but vain efforts have been made to have the federal grades so changed as to make such assumed exploitation less easy and to rate the wheat grades higher and less susceptible of grade improvement by mixing.

The common contention of growers is that grain traders pound down the grade of wheat when they buy and push it up when they sell, thus depressing farm prices and enhancing consumer prices—country elevators grading downward toward the farmer and upward toward the terminal elevators, city merchants grading downward toward the country elevator and upward toward the miller and exporter, and exporters grading downward toward the cash merchant and upward toward the European importer. Specifically, wheat growers charge that their deliveries are often underweighed; that they are debited when the grain is over-moist, but not credited when it is over-dry; that the grade is determined before instead of after the grain is cleaned, though a toll is paid for cleaning; that the commercial value of the dockage does not accrue to the

¹ That is, when the December is at a premium over the May.

grower; that premium qualities are not credited; and that grain dealers by devices of mixing wheat raise the average grade, reintroduce some of the dockage as wheat and market it as such, and not only repair the defects of the original deliveries for which they have penalized the grower but utilize the grading standards to make introductions that are positive in price but fictitious in quality. Obviously the rectification of most of the alleged abuses complained of is largely a matter of regulation and inspection; but the subject of mixing is one of substantial importance.¹

The theory of mixing in country elevators is simple. Wheat is delivered to the elevator from two adjacent farms. The one batch has good weight and grades a shade over No. 2; the other is underweight, grades a shade under No. 2, and is classed No. 3. When mixed, the total lot grades No. 2. If the fields belonged to one grower, or if the two growers joined their grain before delivery to the elevator, the wheat would have graded No. 2. Why should not the elevator mix the wheats and obtain the best grade—have the growers been injured or the consumer imposed on? In this manner, the amount of outgoing wheat grading No. 2 or better is larger than the incoming amount of No. 2 or better. In addition to improvement by mixing of cleaned wheats, there is often improvement in grade achieved merely by removal of dockage. This is the theory in its simplest form, where the mixing is of different grades of the same variety of wheat; it becomes more complicated when other factors are introduced, such as moisture-content, deteriorated kernels, and special kinds of dockage.

The elevators contend that farmers add tonnage by inclusion of non-wheat removable on the farm, and so lower the grade; the elevators reverse the process, raise grade and lower tonnage by removal of dockage, the price reflecting the true value of the wheat and the cost of removing the dockage. They urge that the farmer has his own remedy: he can clean his wheat.

¹The subject of mixing of wheat in Canada has been exhaustively dealt with in the report of the Royal Grain Inquiry Commission.

To the extent that wheats grown around a country elevator are of one variety, mixing is largely a processing of the produce. When, however, wheats of separate varieties are mixed, something very different from a processing is undertaken. In many parts of the country the varieties of wheats vary from farm to farm in an extraordinary fashion. It is, therefore, for each region a question of fact as to the extent to which the mixing in country elevators represents a processing of one variety or the agglomeration of divergent varieties of wheat.

Wheat mixing is done to some extent in all kinds of country elevators—farmer-owned, co-operative, individual commercial, old-line and mill-line; but most country elevators are not equipped with machines and talents to do mixing. Mixing done in mill-line elevators is determined by standards of flour and not for improvement of grade. The least mixing is done by state co-operatives and country houses which, having become awake to the value of straight wheats, have segregated them by regions and even in relatively small lots, for the sake of premiums for high protein.

When the wheat passes to city merchants and arrives at the terminal elevators (private rather than public), it is again subjected to mixing operations that are likely to be the more extensive the greater the availability of samples upon which the expert mixer can display his ingenuity. The conservative operation of most terminal elevators is based on an expected increase in the price of cash wheat relative to the future in which it is hedged. Thereafter, the profits of mixing are "velvet"; or, if foreseen, they may be allowed for in the purchase price. Thus the profit of mixing may occasionally be the item that makes winter storage practicable to terminal elevators, thereby facilitating movement of grain from country elevators.

In some terminal elevators the attempt is made to mix straight varieties in order to meet the critical demands of the mill trade; but for the most part the purpose of mixing in terminals is to secure with the use of the cheapest materials the maximum outturn of the stated federal grade or the maximum outturn of a grade deliverable on

future contract. This is especially the case with the export trade. Proof of this is to be seen in the report of exports, by classes.¹ Of the average exports of wheat between July 1, 1920, and June 30, 1923, nearly 52 per cent could not be classified by variety but was reported as "mixed," "type sample," and "not classified." Many shipments were mixtures of different varieties, so compounded as to carry a grade but devoid of type. The remainder of the exports that were classified as "hard red spring," "hard red winter," "soft red winter," "durum," and "white" wheats, were for the most part mixed just to the point of being deliverable under the Liverpool contract.

In the export trade, mixing has been widely practiced. Wheats destined for export are frequently blended at the ports in order to carry the government inspection for the grade deliverable on options in European markets and in general to conform to minimal European standards. Also, a straight run of mixed wheat is better adapted to cargo space than separate parcels of different wheats. It is against both the mixtures of different varieties and the "skinning" of the grade of straight varieties that European buyers have repeatedly protested. European protests have really been directed more against the official inspection standards than against the business practices of export houses that merely conform to them. So-called No. 2 Hard Winter wheats, made just good enough to comply with European options, have inflicted injury upon the reputation of American hard winter wheat on the continent of Europe. In some years, if mixing is fairly carried out, the result may be an improvement in the average wheat exported, without imposition on the European importer. But in some years and especially if unfairly practiced, wheat mixing results in indefensible derogation of quality from the standpoint of the consumer. Thus, while mixing may clearly be done with advantage to the producing country and without disadvantage to the importing country, the practice has been overdone, with injury to both parties.

Domestic millers are opposed to the mixing of wheats in elevators, and for sound

reasons. Uniformity is a prime commercial asset in flour, and the blending of wheats to produce uniform flour is an art. Millers, therefore, purchase straight strains of wheat and do their own blending. They object to mixed different grades of the same variety, different mixed varieties of whatever grade, mixed wheats of different densities or of different protein-contents. They object to the inclusion of the rye, barley, frosted grain, bin-burnt kernels, weed seeds, and other dockage permitted in the different grades. Therefore, millers buy on exchange markets mostly on sample and analysis, and more and more they seek purchases in the country from individual growers, farmers' elevators, individual commercial elevators, and state co-operative associations. Having plotted the hard spring and hard winter wheat areas, each year these agencies check up the new crop by analysis of protein-content and merchandise it to mills on that basis. In the Pacific region the mills purchase wheat geographically to secure desired qualities, and much of the crop is not graded at all. Even in the soft red winter wheat belt east of the Mississippi, mills follow closely the improvements in strains, purchasing much from the country direct, which is leading to improved strains in as old states as Pennsylvania.

When mills purchase mixed wheats, they endeavor to protect themselves against costs of removing the dockage and against unreliability in quality by cutting the price, so that mixers who hope to increase the price by raising the grade under official inspection rules find themselves confronted with the negative attitude of mills which are critical because of the very mixing that has occurred. Under these circumstances, we expect the future mixing of wheat to be done mostly for the export trade and for lower-grade flours and less for the high-grade milling trade, except where true-to-type wheats are off-grade solely by reason of light weight.

Wheat growers contend that the practice of mixing gives to the weighted bushel of wheat a higher price than is paid to the grower for the average of the different grades. In other words, the grower is penalized for his lower grades and given no

¹ See Table 21, p. 89, in *The Wheat Situation, a Report to the President*, by Secretary Wallace, 1923.

premium for his upper grades, though these are employed by the elevators to bring the lower grades up to a higher average. Raising wheat by one grade may mean a gain of from less than a cent to several cents per bushel, according to circumstances.

Whatever the merit of this contention, and it has some merit, the real method of correcting abuses in the mixing of wheats lies in cleaning on the farm and in the changing of wheat grades to conform to milling qualities. The continuous efforts of wheat growers to have the definitions of grade requirements lowered, under the naïve assumption that the price is fixed by the definition and not by inherent quality,

have not operated to diminish the prevalence of wheat mixing.

These mixing operations yield a small profit, in some seasons possibly a large profit. The complaints of growers for the most part are not directed against the practice of mixing but against the fact that the profits go to middlemen and not to farmers. The real question involved, the effects of the practice on the costs of milling and on the price level of American wheats abroad, has been largely overlooked. A growers' co-operative, intent on improvement in milling qualities, would eschew mixing. It were better to sell low-grade wheat for high-grade feed.

VIII. THE COST OF TRADING IN WHEAT FUTURES

Included in the cost of merchandising wheat are factors that lie outside the commissions of country and city grain dealers (no matter if several times repeated) also interest, insurance, and storage. Country grain dealers take in some wheat for immediate resale, but they rarely carry it for a rise in price; they hedge the wheat by sale of futures, thus passing on the risk, and when later the grain is sold take up the hedge. Since grain exchanges exist for the purpose of facilitating the marketing of grain, the selling cost must include a charge for the cost of the grain exchanges. Prior to the introduction of federal wheat grades and the passage of the Capper-Tincher Act, wheat growers quite commonly regarded the grain exchanges as artificial and unnecessary institutions, created for the exploitation of the farmer. At present, however, agrarian leaders and wheat growers realize that grain exchanges contribute services to producers and consumers, though there is wide difference of opinion as to the net money value of these services.

The grain exchanges are firstly, markets where the prices of wheats are publicly registered, where wheat is bought and sold by sample, by grade, on analysis, spot, in warehouse, to-arrive, on consignment, and for deferred delivery. Price registration is favored by active speculative interest. Secondly, grain exchanges are markets in

which contracts to buy and sell wheat for future delivery are used for the hedging of purchases and sales of country elevators, terminal elevators, mills and other converters and exporters, in the endeavor to secure a relative insurance against price fluctuation that would remove them from the open domain of speculation. Thirdly, grain exchanges are markets in which speculators buy and sell contracts for future delivery without intent to deliver. Whenever in the competitive system an unusual risk arises, speculators assume it and producers and consumers pay for the service. The chief economic justification of such speculation rests largely on the experience that hedging is effective only when superimposed upon a speculative market wide enough to absorb the hedges. These are the broad functions of grain exchanges, irrespective of hypotheses as to the time and space relations of cash and future prices.

The wheat crop is harvested within four months, the consumption extends throughout the year. It has never yet proved practicable for wheat producers (as individuals) to carry the crop and distribute it as consumers demand it. Nor has it proved practicable for proximal consumers to buy the crop outright, store it, and pass it through the mills and ports as customers demand it. The intermediary factors between growers and proximal consumers, the middlemen, operate in some countries without the use

of grain exchanges—for example, in Australia and Russia. Experiences with grains in North America and Europe are generally interpreted as indicating that price fluctuations are less extreme when these intermediary functions are exercised through grain exchanges than in their absence. In addition, further stabilization of price is secured through making hedging possible to converters, merchants, and exporters. There is today little difference of expert opinion on the theory of the economic value of grain exchanges. But there is disagreement as to the occurrence and consequences of uneconomic practices on these exchanges.

Wheat growers, some contending against future trading *in toto*, others urging further regulation and control of term markets (and apparently also hopeful that with co-operative marketing of wheat, trading in futures might be dispensed with), place many charges at the door of speculation. Many of the charges are qualitative and intangible, but they may be simmered down to six propositions:

1. The cost of trading in wheat futures is paid for by wheat growers.
2. The profits of wheat speculators come out of the wheat price.
3. The costs of hedging come out of the wheat price.
4. The seasonal spread of the price of wheat is exaggerated by speculation.
5. Future trading in wheat fails to achieve the stabilization of price expected of it.
6. Speculation in wheat may produce abnormal price fluctuations.

Without going into great detail, these charges deserve an objective hearing.

1. *Is the cost of trading in wheat futures paid for by wheat growers?* The volumes of future contracts are portrayed as in excess of the speculation required to absorb the hedges. The wheat grower is unable to get past the reported fact that a crop of wheat will be bought and sold twenty-five times over on the grain exchanges within a year. And when he sees such figures, the defined distinctions between gambling and speculation fail to impress him. The analogy between bank clearings and gold supply is lost on the average wheat grower. Since each transaction in an excessive volume of specu-

lation has a cost and may yield a profit or a loss, wheat growers infer, or at least fear, that these costs and profits proceed largely at the expense of the price of wheat.

What is the direct cost of buying and selling future contracts of wheat in the United States? The Grain Futures Administration publishes statements of the gross volume of contract trading in wheat. Using the figures for the past and the current season, let us assume that the transactions will average 60 million bushels per day for all the exchanges of the country. The commission on contract trading for account of other members is one-eighth of a cent a bushel, for nonmembers one-fourth of a cent a bushel. There is no official segregation by the Grain Futures Administration of the respective volumes of trading for members and nonmembers. Let it be assumed, on the basis of a segregation suggested by Boyle,¹ that 80 per cent of the transactions are for members and 20 per cent for nonmembers; and of transactions for members, 53 per cent of the total pay no commissions because done by members for themselves, while 27 per cent of the trades are done by members for other members at half-rates. This would make the gross figure for annual commissions some 15–16 million dollars. Of the present crop of 670 million bushels, less than 600 million will be shipped from the farm. Regarding future trading as a hedge on the crop and the commissions as insurance premiums, this means something like 2.7 cents per bushel as the cost of price insurance on the crop during the present season. Considered as insurance, this figure does not look cheap. But it has been urged that reformation of the practices of grain exchanges might lower the cost of this insurance.

Is 60 million bushels of future trading a day a volume in excess of that required to absorb the hedges used in merchandising a crop of 700 million bushels? We possess no mathematical analysis of correlation between volume of trading and volume of hedging, since volume of hedging is not

¹ James E. Boyle, *The Chicago Board of Trade, What It Is and What It Does*, 1921, pp. 60–61. We are advised that the Grain Futures Administration possesses as yet no better estimate.

reported.¹ But in the past, the merchandising of larger wheat crops has been successfully hedged on a smaller volume of future trading.

One cannot discover a basis for the contention that the cost of future trading is carried by wheat growers alone. This cost is paid by growers, consumers, and speculators. General considerations suggest that the division of this cost among growers, consumers, and speculators must vary in different years in accordance with the size of the crop, upward or downward price movement, the rate of movement, whether the market were a buyer's or a seller's market, and so forth. There is no way of judging, in this or any other year, what proportion of it may be paid by wheat growers.

2. *Do the profits of wheat speculators come out of the wheat price?* The profits of wheat speculation are purely conjectural. No one knows how many professional and amateur speculators are in the market, what proportion of them come out with more money than they took in, what sort of a gross debit and credit balance is shown at the close of the season. The profits of winning speculators might come from wheat growers in the form of reduced price of wheat, from consumers in the form of increased price of flour, or from losing speculators. It is to be expected that the derivation of the profits of winning speculators from the three classes would be different in different seasons. In short, there is no tangible way of evaluating either the profits of speculation or the proportional extraction of these profits from growers, consumers, and losing speculators. One gets the impression, particularly in seasons of violent price movements against which growers' complaints are especially directed, that the gains come mostly from losing speculators, since it is largely the boom of scattered amateur buyers that accounts for the occasional driving up of the price of wheat beyond the point warranted by the statistical position, with consequent and subsequent bear raids. It may be said of the wheat pit, as was recently remarked of the British grain trade: "There is a con-

stant rain of optimists pouring through this trade who enter with money and go out with none."²

Furthermore, the profits of speculators are a different thing from the influence of speculation on farm prices. If one surveys over a period of years the movements of marketing from the farm, the levels of farm prices, and the assumed influences of speculation on terminal cash and future prices, one is likely to arrive at the inference that in some years speculation has been directly to the advantage of the wheat grower but in other years possibly to his disadvantage, this all outside of the general consideration that future trading tends to stabilize price. It is not possible to find data to sustain the statement that the profits of future trading come out of the pockets of wheat growers as a net result of the total operation.

3. *Do the costs of hedging come out of the wheat price?* The theory of hedging is that spreading the risk affords insurance against price fluctuation and enables the dealer to divest himself of speculation, under which circumstances he is in position to operate on a narrower margin between purchase and sale prices. Though by general agreement among business men engaged in commerce with commodities where hedging is available, the results in practice fulfil the theory, it is difficult to make a statistical demonstration. It is, however, not difficult to prove the utility of hedging for a particular concern out of the books of that concern. The value of hedging is best illustrated in the accounts of the miller because, unlike the grain dealer, he is primarily a manufacturer and only secondarily a middleman. Millers stand united in the view that hedging does insure against price fluctuations relatively, and in addition provides the miller, through arbitrage and spreading, with further devices for defense against price fluctuation.

At present, however, hedging is not merely a defensive implement of millers and grain dealers; it may be an instrument of profit. Just as the success of British grain merchants depends largely on their ability to guess the turn of affairs the majority of times, so through the use of arbitrage and spreading the more skilful hedgers are

¹ The middleman may hedge his net, not his total, holdings.

² See below, p. 138.

able, year in and year out, in the absence of very unusual circumstances, to secure a profit on the hedging account. Since the war the hedging accounts have become increasingly important to flour millers. It is frequently the profit of the hedging account that enables the terminal grain dealer to continue his function of buying cash grain in the fall for merchandising through the winter in seasons when the margin between the cash price and the May future is narrow. Flour millers and wheat merchants contend that erratic price fluctuations modify the value of insurance through hedging, tend to restrict business, and force a hand-to-mouth policy of buying. It does not seem that the profits of hedging are necessarily reduced thereby, at least for the more skilful hedgers. But it is clear that instability of premiums is a disturbing factor in hedging.

Wheat growers have tended to confuse the future trading of hedgers with the future trading of speculators, making the inference that when the hedging account yields a profit this is "velvet" to the hedgers, and when the account yields a loss this is passed back to the wheat grower. There is no existing collection of data tending to indicate whether the consolidated hedging accounts of flour millers regarded as a unit, or of grain dealers, or of exporters, regularly yield a profit or a loss, or how much in either direction. Since hedging is usually practiced by skilful and experienced men, we take it for granted that the net annual result is a profit. It is difficult to find ground for asserting that this profit comes out of the grower or the consumer, or that it represents an extension of the otherwise existing margin of prices. Instead of regarding the profit of hedging as a usury, in view of the competition within the trades it is more probable that the flour miller and the grain dealer count on the profit of hedging in order to practice competitive price-cutting. It is not good trading logic to hold that the grower has no share in the indirect and direct profit of hedging but bears the major share of the indirect and direct losses of hedging. Furthermore, it is arbitrary to assume that eventual hedging losses are passed back to the grower and not forward to the consumer.

4. *Is the seasonal spread of the price of wheat exaggerated by speculation?* The general complaint of wheat growers, granting the theory of the carrying charge, is that the existing rules of grain exchanges permit the fall price to be driven down and the spring price to be driven up, whereby growers who sell in the fall are paid less than their due, and the merchants who carry the wheat through the winter receive an exaggerated spring price. In other words, the weighted return of the crop is reduced and the weighted charge for carrying through the winter is increased.

There is little doubt that in wheat-surplus-producing countries, where a heavy proportion of the crop is marketed in an autumnal peak, the pressure of offerings may result in a sag in cash prices. For a time, the market behaves like a buyers' market. It is at these times, as indicated in the testimony before the Royal Commission on Food Prices, that the British international wheat traders make purchases at relatively low levels.¹ The extent to which such autumnal over-marketing depresses the price must vary from year to year. It seems agreed that the heavy autumnal marketing in 1924 retarded the ascending price movement. The wheat sent forward in the excess marketing of the autumnal peak must be bought and held for later demand; and the risk of waiting must be paid for. This is the function of the speculator, and the theory of the carrying charge is that the difference between the autumnal price and the May option must be wide enough to enable cash grain merchants to buy the grain in the fall against a hedge in the May option, at a price difference large enough to cover storage, interest, and insurance. The contention of wheat growers is that through bearing the price in the fall and bulling the price in the spring, speculators exaggerate this natural difference between the wheat price in the fall and in the spring, and thus secure an inordinate profit and one not inherent in the speculative situation. Since we do

¹ Compare also Stewart and Riddell, quoted in W. A. Mackintosh, "The Canadian Wheat Pools," *Bulletin 51* of the Departments of History and Political and Economic Science in Queen's University, Kingston, Ontario, Canada, November 1925, p. 13.

not know what the price might have been without speculation, we cannot infer whether the actual price movement within the narrow spread has or has not been influenced by speculation. The autumnal depression of price is not to be interpreted as implying a corresponding influence on the weighted annual price. Grain dealers commonly contend that with the use of hedging they have no interest in the price level. The complaint of the growers is that grain dealers take no interest in maintaining the wheat price; this reproach has no practical meaning apart from devices in marketing through which growers hope to prevent autumnal offerings from depressing the price.

One of the difficulties in discussing the "orderly" marketing of wheat is our inability to define what price would be expected from orderly marketing, as distinguished from customary marketing. The popular argument for orderly marketing assumes precisely what is to be proved. Using arbitrary figures for illustration, as against 70 per cent of the wheat crop being marketed before December 1 and 30 per cent after that, it is assumed that if only 60 per cent were marketed in the fall, the price in the autumn would be higher, and the price in the spring lower. It is assumed that the predicated autumnal rise, weighted by the volume of autumnal marketing, would more than compensate for the decline in spring price, weighted by the volume of spring marketing. But if the restraint of autumnal marketing were to drive up the autumnal cash price in relation to the then-existing price of May futures, this would tend to defeat the purpose, since narrowing the spread between autumnal cash and May future prices would make it difficult for terminal elevators to buy wheat in the fall and carry it through the winter hedged in the May future. In addition, leaving a larger proportion to be marketed in the spring might involve forced selling during May, since the growers might be exposed to the effects of an eventual discount for the July contract.

If it be true that the fall price is driven down and the spring price up, one or both, this ought to be apparent in averages of spreads of prices. But in an earlier section it was shown, on the basis of price compari-

sons made by the Federal Trade Commission, that the average spread between prices in the fall and the spring is not wide enough to equal the quoted carrying charges. Owing to what we regard as inherent but inconstant bias in the figures for both prices and carrying charges, together with inability to forecast the trend, it is possible on paper to prove that in a particular year the price spread was absurdly lower than the carrying charges and in another year absurdly higher than the carrying charges. If the figures of the Federal Trade Commission represent the effects of pounding down prices in the fall and driving up prices in the spring, as charged by wheat growers, these effects must have been disappointing to the speculators engaged therein. Boyle¹ made in 1922 the general statement that "cash wheat selling in September at 100 cents would normally indicate a May future of about 112 cents—figuring the carrying charge at one and one-half cents a month for the eight months." If this spread is what the predicated efforts of speculators have been aiming at, it has been unsuccessful indeed, since, as previously stated, the average spread between cash prices in the fall and in the spring over a period of thirty years before the war was 7.56 cents a bushel and the average spread between the autumnal cash price for wheat and the May future was only 3.64 cents. As far as the tabulations of prices are concerned, it is difficult to discover a foundation for the inference that the effect of speculation is to beat down the autumnal price and drive up the spring price. The Federal Trade Commission has suggested, however, that since the hedging operations of terminal merchants and millers are predominatingly sales in the autumn and purchases in the spring, this may tend to widen the seasonal spread—but this looks to us like an inconclusive inference.

There is, however, another approach to the question. With due allowance for non-comparability of data and the varying effect of plus-and-minus errors, it seems apparent that the spread between cash prices in the fall and spring is wider than the spread between cash prices in the fall and the price

¹ James E. Boyle, *Chicago Wheat Prices for Eighty-one Years*, 1922, p. 22.

of the May contract in the fall. Have we an explanation for the discrepancy? The Federal Trade Commission has conducted inquiries into the relations between cash and futures prices and has reached conclusions so suggestive that they prompt a comprehensive reinvestigation of the subject with the better material now available to the Department of Agriculture under the administration of the Grain Futures Act.

Regarding the May contract price in the autumn as a forecast of the May cash price, from the data of the Commission it would appear that this tends to fall short of the ultimate cash price attained in May. In other words, the May contract price tends to be at a discount, and this is interpreted as "evidence of a bias in the futures in the direction of prices lower than are justified by the final event."¹ The early premium on the May option declines progressively through the winter and becomes negative in the delivery month. For Chicago, the average negative spread in May for the period 1906-07 to 1915-16 is given as 0.53 cents a bushel; for Minneapolis and Kansas City it is larger—about 2 cents, the higher figures for these term markets being evidently related to the prominence of premium wheats. These negative spreads in the delivery month the Commission interprets as indicating that the true carrying spread may have been 1 or 2 cents larger than the computed spread. As explanation for this consistent tendency to a discount in the May future, the Commission has arrived at the inference "that the seller's option feature of future contracts, as they are at present dealt in, is of itself a sufficient cause of the manifested tendency to discounts."² Undue discount of the futures is thus regarded as a bias resulting from speculation.

This tendency to discount in the May future, the consistent underestimate of the May price as forecast by the price of the May future in the autumn, the Commission interprets as confirmation of the contention of wheat growers that the operations of future trading have worked to the detri-

ment of the fall price of wheat. The argument runs as follows: The price of the May future in the fall is lower than the May liquidating price turns out to be. This means that the May future in the fall and winter is relatively at a discount under the cash. The bids to farmers reflect this discount of the May future. Not only are the bids of country elevators lowered by the influence of the quotation of the May future, but terminal grain dealers (unless they are conversant with the situation and count on the difference) are less inclined to accumulate wheat stocks for carrying through the winter. Also, this "bias of the futures market operates especially to depress unduly the next-crop options."³ Indirectly also, in the judgment of the Commission, the wheat grower is injured because, under the application of the seller's-option feature of future contracts, the tendency to discounts adds to the cost of hedging, and this compels grain dealers and millers to seek wider gross margins, reflecting back on the grower's price. Regarding the autumnal price of May futures as the price that wheat is expected to sell for in May, anything preventing the autumnal quotation for the May future rising to the level of the May price actually attained dispossesses the grower of at least that much.

It is impossible with our present information to accept or reject this presentation of the Commission. Regarding it as it stands, with the implication also that these transactions represent the principal influences whereby the autumnal farm price of wheat is depressible through the practices of future trading, it is significant that the losses thus inferentially incurred, if applied to the crop of the country, would average less than 2 cents a bushel. It is also significant to observe that the considerations adduced are related to the depression of the farm price in the autumn and not to elevation of the selling price in the spring.

5. *Does future trading in wheat fail to achieve the stabilization of price expected of it?* The question of occurrence and extent of stabilization of price of seasonally produced, continuously consumed wheat, under the existing system of futures trading on established grain exchanges, has been

¹ *Op. cit.*, VI, 15.

² *Op. cit.*, VI, 181.

³ *Op. cit.*, VI, xxi.

considered by the Federal Trade Commission.¹ The Commission has been widely quoted in the press to the effect that future trading in grain fails to stabilize prices. Before undertaking to evaluate the published investigations and views of the Commission, it will be advantageous briefly to survey the field of procedure.

If one wishes quantitatively to appraise the function of trading in futures in wheat, several procedures are open:

a) Comparisons of prices of wheat prior to and following establishment of contract markets.

b) Comparisons of prices of wheat in countries with and without term markets.

c) Comparisons of price movements of wheat in a country with future trading in which (in time of peace) contract trading has been suspended and later re-established.

d) Mathematical treatment of price data on wheat to determine correlation between prices and trading in futures.

e) Comparisons, within a country, of price movements of commodities with and without future trading.

In the text of the report (pp. 238-261), under the title "Future Trading and the Stabilization of Prices," following a discussion on "Fluctuations in general," are adduced considerations and figures dealing with "Remoteness of maturity of options in relation to price fluctuations" and "The comparative stability of cash and future grain prices." Out of the discussion of the remoteness of maturity of options is drawn the inference that "natural uncertainty is not the dominant cause of fluctuations," from which it is further concluded that

if factors of uncertainty generated by future trading equal in influence the inevitable uncertainty due to remoteness in time, the machinery of future trading does not work as well as it might reasonably be expected to work.

¹ *Op. cit.*, VI, 238 ff.

² The price data of the crop years 1924-26 ought to supply material suitable for a mathematical study of correlation between speculation and prices.

³ Growers of wheat, grain dealers, millers, and exporters in the Pacific region will be surprised to learn "the fact that there is no hedging market on the Pacific Coast should not affect the situation there particularly, since the Chicago futures market can be used for such hedging."

The survey of comparative stability of prices leads to the conclusion that

the analysis of annual or near-annual fluctuations as measured by the range (or difference between high and low) leads to no definite conclusion in favor of either cash or futures as regards degrees of stability, nor in favor of one or another grain. . . . The data do not indicate that futures are more stable than cash or that they are able to lend stability to the latter.

The material assembled in these sections and the scrutiny accorded to it do not represent an adequate statistical or mathematical treatment of the subject, and cannot reasonably be regarded as proof or disproof of the proposition that futures trading is an instrument for the stabilization of grain prices.²

The remainder of the chapter, apart from a qualitative concluding discussion on "Has future trading a stabilizing influence?" is devoted to a study of "Comparative stability of grain and other prices." This corresponds to inquiry (e) above, and the section is remarkable from several points of view.

The statistical data used consists of fluctuations in prices of various commodities as measured by ratios of yearly ranges, over a period of eight years—1913-14 to 1920-21. The wholesale prices were drawn from the reports of the Bureau of Labor Statistics. Prices of the following raw agricultural materials were used: five wheats,³ corn, oats, rye, rice, hay, two cottons, three wools, peanuts, tobacco, two hides, cattle, hogs, sheep, coffee, and beans. Of manufactured agricultural materials were used canned corn of a special style, canned tomatoes of a standard grade, two whole milk cheeses, a common bacon, dressed mutton, lard, two cotton yarns, print cloth, two woolen yarns, sole leather, and leather harness. The prices of three metals were included (copper, tin, and zinc), and one imported raw material—rubber. No adequate explanation is given for the selection of these and no other commodities.

From the comparison of prices the conclusion is drawn that wheat, corn, and oats show a range of variations in prices about that of the average for all commodities covered—wheat showing the least variation among the grains, and less at Chicago than at other markets. It is pointed out that the

greatest variation among animals is shown by sheep, which possibly accounts for the fact that mutton was the dressed meat selected instead of dressed beef. When the commodities are grouped as between twenty-two farm products (nine dealt in by way of futures) and twenty other commodities (six dealt in by way of futures)—a segregation in itself arbitrary; for example, sheep are classed as a farm commodity and dressed mutton is not, and apparently all term markets are regarded as comparable—the conclusion is reached that “in both large groups the commodities dealt in by way of futures show greater fluctuation than holds for the larger groups within which these special classes are included.” The general conclusion of the inquiry is that “on the whole, the conclusion to be drawn from this analysis comparing a large variety of commodities is positive in neither direction, but the claims made for future trading in general as a stabilizer of prices are not borne out.”

An open-minded appraisal of this investigation, with due respect to a governmental commission, leads to the conviction that the material was not adapted to the purpose of the inquiry and that the conclusions drawn from it are unfounded, positively and negatively. It is proper to give the reasons for this statement, these resting largely on incomparability of the commodities and the years included in the survey.

There was one peace year in the series. During the next two years, the World War was under way, with the United States as a neutral but heavily engaged in abnormal trade. We entered the war during the fourth year covered by the inquiry. The active state of war lasted through the fifth and into the sixth year of the period, from the standpoint of trade practices practically through the sixth year. The last two years were abnormal years of reconstruction, with debacle in prices of raw materials throughout the world. The first year was a year with free competition; the next two were years with restrained competition; the following three years represented a period of heavily restrained or totally suspended competition; in the final two years competition was either restrained or abnormal. These interferences

with competition were incomparable from country to country, from year to year, and between different commodities. In seven of these years there was government control of buying, selling, and prices of different commodities in the list in different parts of the world. The presumption that price variations between commodities over the period are not comparable is inherent in the bare fact that the period under consideration included one year of peace, five years of war, and two years of reconstruction.

The Commission itself recognized the defect of the material in a mild qualification:

Doubtless many of these comparisons were affected by price regulation during the war. Prices of wheat and hog products were to a considerable extent stabilized in this way, and fluctuations in certain other commodities, especially those important for war purposes, were held in check.

But this qualification is far too mild to fit the circumstances. A few illustrations will suffice. Normally, prices of corn and hogs fluctuate in a sort of cyclical manner; during the war we had in effect a fixed ratio between corn and hogs. The prices of wheat were more or less controlled in all countries over the larger part of the period, but in this country before we entered the war and after the armistice exhibited price fluctuations that were related to abnormal European methods of wheat purchase. The prices of hides, leather harness, and sole leather would have soared to high levels had they not been controlled in this country during the war. The prices of copper, tin, and zinc were controlled either nationally or internationally during the larger portion of the period. The position of rubber was entirely abnormal. An elaborate inquiry directed to the occurrence and extent of price control and allocation of commodities during the period would certainly amplify the material for the general inference that must be already evident—that these prices, in themselves and in their variations through this period, are not comparable.

Consider further the comparability of the term markets in question. It is true there are futures markets in coffee, bacon, lard, copper, tin, and zinc; but speculation on these term markets has not been comparable qualitatively or quantitatively, with

speculation in grains and cotton. Our term markets were abnormal before we entered the war, they were suspended or inactivated during the war, and were abnormal when reopened after the war. The relations and reactions were not comparable between contract markets for grains and contract markets for the other commodities.

The table contains the fundamental error of comparing prices of commodities seasonally produced and continuously consumed with prices of commodities continuously produced and continuously consumed. Cattle, hogs, sheep, hides, cheese, bacon, dressed mutton, lard, cotton yarns, print cloths, woolen yarns, leather harness, sole leather, copper, tin, zinc, and rubber are continuously produced, and the outturn of most of these is relatively controllable by the producer. Though sweet corn and tomatoes are seasonal crops, the volume of canned corn and canned tomatoes is controlled by the packer. Price variations with such commodities are inherently unsuited to comparison with price variations in the grains (and this quite irrespective of the presence or absence of term markets) simply because production is largely subject to producers' control in the one group and largely outside of producers' control in the other group.

There are also inexplicable features of the arbitrary selection of commodities. Two cheeses are quoted, but no butter or canned milk. Mutton (the least significant meat) is quoted, as well as sheep; but no reference is made to the far more important dressed beef. Two grades of cotton are quoted and three grades of wool, also three forms of manufactured cotton and two forms of manufactured yarn, and two kinds of raw hides and two kinds of manufactured leather. But there is no quotation for wheat flour, as against five varieties of wheat; no quotation for corn meal, oat meal, or rye flour.

Furthermore, the prices were not comparable because the methods of collection were not uniform. One cannot compare a quoted cash price for wheat with a manufacturer's price for cotton yarn; one does not compare in Chicago the price of hay with the price of canned corn or tomatoes, a large part of which is sold to brokers

before it is canned. One ought not to compare fluctuations in the prices of tin and rubber, of which we produce nothing, with the fluctuations in the price of lard, of which we are the heaviest exporter. If one wishes to make a comparison between prices of seasonal farm products with and without trading in futures, such a comparison may be made between wheat on the one hand and wool and tobacco on the other—all materials of seasonal production in numerous countries of the world, actively participating in international trade, and sold largely to converters rather than to ultimate consumers—wheat marketed largely on grain exchanges, wool and tobacco marketed largely through brokers and auctions. It is not permissible to compare price movement of different commodities as related to the effect of future trading unless this is the only variable; even if the price data were good, comparisons between them could not yield conclusive results.

The logical inference to be drawn from this investigation, in consideration of the nature and treatment of the material, is that the claims both for and against trading in futures in respect to stabilization of prices remain uncontroverted.

In the published report, conclusions are stated in three places: in the letter of submittal, in the summary, and in the body of the text. It is interesting to compare these. In the body of the text, on page 263, the conclusions from the scrutiny of the material are stated as follows, in a very qualified and carefully guarded manner:

It cannot be claimed that the results of the foregoing studies and comparisons of price movements lead to a definite conclusion one way or the other regarding the alleged tendency of futures to operate as a stabilizing influence upon prices. It appears that the data and analysis should be much extended before being accepted as a satisfactory basis for conclusions of this nature. The readings are not definitely enough on one side or the other to give even a conclusion much qualified with reference to the complicating conditions.

In the summary (p. 16), the outcome of the inquiry is interpreted as follows:

So far as it has been possible to go into the facts, however, it appears that there is no convincing argument, or mass of data, that supports the commonly accepted proposition that future trad-

ing acts as a generally stabilizing influence on prices. Until further evidence is forthcoming the comparisons made point, at least, to the conclusion that future trading cannot be assumed to have such a stabilizing effect.

In the letter of submittal (p. xx), finally, we read the following:

No convincing evidence has been found that future trading operates serviceably as a stabilizing influence on prices, as has often been asserted by its advocates, especially large speculators and commission houses. The data studied do not indicate that future prices are any more stable than cash prices; and it cannot be inferred that the former are able to lend stability to the latter. In fact, the technical conditions of future trading appear to produce some fluctuations in prices that would not occur without future trading.

The Federal Trade Commission included in this report no investigation into variations in wheat prices in the United States before and after the establishment of contract markets. This was entirely proper, since conditions in transportation, trade, and finance have been such as to make it certain that the results of such a study would be ineffectual.

The Commission has published in this report no study or comparison of fluctuations in domestic prices of wheat in the United States under the system of future trading with those of other countries, without future trading, for example Australia and Argentina. There is also no comparison of prices of wheat in the United States, having its four regions and kinds of wheat, with those of Canada, having but one region and variety of wheat.

The Commission has published in this report no comparison of prices of wheat in a country with future trading, during a period of active trading, followed by a period of suspension of future trading (in peace time), with subsequent resumption of future trading. One such piece of material was available, namely Germany in the period between 1890 and 1905, with a four-year period of suspension of future trading. So far as the writer is aware, a comprehensive study of the price movements in German wheat during this interval has never yet been published, and it is greatly to be regretted that when the Commission was engaged on the subject it could not have

explored this available field of investigation.

It is regretfully to be discerned that the *Report of the Federal Trade Commission* has left the question of the stabilizing effect of futures trading on prices where it was before the publication of the *Report*.

That the United States Department of Agriculture is fully aware of the chaotic state of the available material on the subject of wheat prices is made evident in the *Report of the Grain Futures Administration* for the fiscal year ending June 30, 1924, in which the subject of the relation of market prices of grain futures and of cash grain is opened, presented, and dismissed in two paragraphs, as follows:

Much interest attaches to the relation between price movements of grain futures and price movements of cash grain. The view of the Grain Futures Administration is that fresh light on this subject requires that it be seen in proper perspective, which involves prosecution of studies based on series of quotations for grain futures and for cash grain that are strictly comparable as to time, place, and the grade of grain involved. Studies based on the published prices of futures in one market and cash grain in another, or on prices of futures at one time of day and prices of cash grain at another, or on prices of futures reflecting some more or less uncertain quality of grain inside the wide limits of a single grade and the published quotations for such qualities for that grade as happen from day to day to come to the cash grain market, are quite as likely to obscure the subject as to illuminate it. Steps toward improving the quality of the fundamental data are therefore in contemplation.

Parties engaged in the storage of grain, either inside or outside the terminal markets, have a very direct interest in this matter, because they wish to understand why the futures sometimes do and sometimes do not sell at a price high enough to cover storage charges. The various ways in which such charges are calculated by different parties need analysis. Another relevant question, upon which a field study is being started, has to do with the extent to which country elevators and other elements of the grain trade make use of the hedging facilities afforded by the grain futures markets, together with the circumstances which incline some of these elements of the trade to resort to the practice more generally than other such elements.¹

These reservations of the Grain Futures Administration apply both to the use of available quotations for grain futures com-

¹ *Report of Grain Futures Administration* for year ending June 30, 1924, p. 53.

pared with cash grain and to the use of quotations for wheat contrasted with quotations for other commodities, in the attempt to determine whether futures trading does or does not tend to stabilize prices. Wheat growers, co-operatives, grain dealers, and economists would do well to suspend further interpretive use of unsatisfactory available price data and await the compilation of reliable figures.¹

6. *Does speculation in wheat produce abnormal price fluctuations?* The fluctuations in wheat prices on the grain exchanges, both for cash and futures, have sometimes been so excessive (and so devoid of apparent statistical foundation) as to disturb the hedging practices of converters, merchants, and exporters. When hedging is unsatisfactory or difficult, the converters, merchants, and exporters widen their margins in order to take account of risks, a practice which reacts back to the grower, or acts forward on the consumer, or does both.

It seems generally agreed in the trade that excessive speculation may lead to violent and erratic fluctuations in wheat prices as registered on the grain exchanges. These fluctuations affect not only future deliveries, but render quotations for premium wheats very unstable. In the hearings on the Capper-Tincher Act, millers and grain dealers were emphatic in their insistence on the insurance value of hedging. The experiences of the past two years, however, have convinced millers and grain dealers that undesirable fluctuations may develop under circumstances of extreme speculation. This experience of the tradesmen is best placed in evidence by quoting resolutions adopted by the Millers' National Federation and the United States Chamber of Commerce:

¹ The interested reader is advised to compare the viewpoint of the Federal Trade Commission with that of the Royal Grain Inquiry Commission of Canada (pages 128-143 of the *Report* issued in 1925) and of the British Royal Commission on Food Prices (pages 62-66 of Vol. I, *First Report*, printed in 1925).

² Resolutions adopted by Millers' National Federation at the annual meeting in Chicago, April 16 and 17, 1925. *The Northwestern Miller*, April 22, 1925, p. 331.

³ From a resolution adopted by the Domestic Distribution Group of the United States Chamber of Commerce at a general meeting on May 22, 1925. *Modern Miller*, May 23, 1925, p. 18.

Resolved, That trading in futures is a necessary factor in the economic marketing of grain. Such trading should be confined to its legitimate purpose. Inordinate speculation, of which the widely fluctuating markets of the past several months have given renewed evidence, is an intolerable evil, destructive of legitimate business, and should be abolished. We urge upon the exchanges themselves the prompt elimination of this vast, indiscriminate speculation, and the formulation of such regulations as may restore trading in futures to its original and only justifiable purpose; be it also

Resolved, That a committee of five be appointed by the chairman of the board to consider methods, to confer with officials or committees of the grain exchanges regarding the removal of the existing recognized abuses, and to take such further action as they may find expedient.²

The destructive effects of incessant wild speculative fluctuations in the price of grain upon all interests connected with the production, conversion, distribution and export of our vast cereal crops and upon our foreign commerce generally, is so self-evident as to demand prompt remedial measures by the principal grain exchanges. We commend the efforts of the Department of Agriculture to bring about such voluntary constructive action.³

There is apparently a point up to which increase in the volume of trading in futures tends to stabilize prices and minimize fluctuations; but, apparently, also circumstances exist under which further increase in the volume of such trading tends to unstabilize the price of wheat and promote fluctuations. Exactly what circumstances reside in these two sets of conditions, remains for future determination. Expert speculation tends to stabilize price, probably inexpert speculation does not act so. Perhaps the turning point in influence of volume of speculation on prices is where inexpert plungings control the market over the expert speculation. Experienced traders believe that the abolition of trading in puts and calls has been responsible for much of the price fluctuation during the past two years and predict that the restoration of this type of trading will operate as a stabilizer of values.

Since millers and grain dealers agree that, through excessive or manipulated speculation, abnormal price fluctuations develop on grain exchanges and disturb the usefulness of hedging, said hedging being the chief justification of speculation, it is to be

granted that this complaint of wheat growers has some foundation. In the movement of reform here again, as so often, society faces a choice of evils. Let it be accepted that, under normal functionation, future trading on contract markets tends to stabilize prices and minimize fluctuations, acting as a buffer on prices just as hedging acts as an insurance. It is a matter of experience that a certain breadth of speculation is necessary to absorb the hedges of millers, cash grain dealers, and exporters; when this breadth of speculation is lacking, hedges themselves provoke fluctuations in price. There is little speculative interest in a stable price; a certain degree of fluctuation is necessary to arouse speculation. Obviously, we face interacting causes and effects. Price fluctuations must exist in order to stimulate speculation, which is therefore a consequence of a fluctuating market. On the other hand, speculative trading up to a certain point has the effect of minimizing fluctuations, but beyond that point may provoke them. The abnormal fluctuations proceeding from exaggerated future trading are to be contrasted both with price movements under normal conditions of future trading, and with price movements in the absence of contract markets. One may be fully convinced of the needlessness and injury of the abnormal price fluctuations that flow from exaggerated future trading, and at the same time regard grain exchanges as indispensable in the merchandising of American grain. This is apparently the opinion of the Department of Agriculture: that there is a use of future trading and also an abuse, and that it lies within the powers and duties of grain exchanges so to regulate trading practices as to conserve the usefulness of future trading without incurring or provoking useless price fluctuations. This also is the position commonly stated by millers, merchants, and exporters. But opinions differ as to the best form of regulation.

It seems sometimes taken for granted that abnormal price fluctuations tend directly to lower the price to the farmer and to raise the price directly to the consumer, and that they may indirectly affect producer and consumer by widening the spreads of cash merchants and millers. The price fluctu-

ations that are complained of consist partly of short-term movements and partly of daily fluctuations. There is no way of knowing to what extent these affect growers' prices, unless one can correlate the daily growers' sales of wheat with the bulges and breaks of the daily market or the ascents and declines of the short-term movements. Regarding such unnecessary price fluctuations as wasteful, one may adopt the general view that both producers and consumers participate in the burden; but one is not permitted to believe that the losses fall exclusively on them. They may, and possibly usually do, fall largely on losing speculators.

The general inductions to be drawn from a review of past relations of trading in futures to the growers' price of wheat may be formulated as follows:

1. It is commonly believed that trading in futures has exerted a stabilizing influence, and that the margin of merchants and millers has been narrowed; this is interpreted as having improved the weighted price of the bushel of wheat to the grower.

2. Under abnormal circumstances, abusive forms of speculation have developed that have had the effect of introducing abnormal fluctuations into the price of wheat and have widened the margin of millers and merchants, and may have reduced the weighted price of the bushel of wheat.

3. We possess no statistical affirmation of the contention that the costs, profits, and losses of speculation and hedging have come out of the price of wheat; these are to be considered as having been divided between wheat growers, losing speculators, and consumers in indeterminate proportions.

4. It is generally believed that the losses falling upon wheat growers as their share of the costs of speculation have been lower than the gains accruing to the growers under the system of merchandising wheat on grain exchanges. In our view, the evidence indicates indubitably that the net result of the existing system of trading in futures, under open competition on the wheat market, is to increase the weighted farm price of wheat; but adherence to this view is coupled with inability to offer a figure for such net increase per bushel. For the present this must remain a qualitative appraisal.

IX. THE PROFIT IN EXPORTING WHEAT

There is little purpose in discussing the spread between farm price and European price of American wheat—it contains too many variables. The fallacies and biases that are inherent in a comparison of seasonal price quotations in the United States are doubly in evidence in comparisons of price quotations in the United States and abroad. It is fair to assume that the port price of wheat is comparable to the mill price of wheat, quality of grain and transportation considered. Exporters' valuations of wheat, published monthly in the *Monthly Summary of Foreign Commerce*, are not uniform and do not correspond to the f.o.b. cost prices, but conform instead to market values. It has often been charged that exporting wheat is a highly profitable business, and that exporters are in position to exploit wheat growers.

A pre-war estimate of the margin between farm and Liverpool is to be found in *House Document 1271*, Third Session, Sixty-third Congress, 1914. According to this report, the costs of merchandising the bushel of wheat in the export trade, deducting transportation on land and water, was 7.4 cents. Adjusted to the present purchasing power of the dollar, this would amount to about 12 cents. The net profit remains conjectural.

The Federal Trade Commission has issued an exhaustive report on export of grain. The Commission computed the average net profit during the period between September 1, 1917, and the close of the calendar year 1921.¹ The operations of the Grain Corporation included no hedging. For commercial exporters, the Commission computed net profits with and without inclusion of profits or losses on hedging. The results are given in Table 8.

It is difficult to believe that these figures illustrate current or to-be-expected operations, and this without going into the methods of accounting employed. If heavy net profits accrued to exporters in 1920, these

were largely incidental to the world-wide decline in the price of wheat that was anticipated by competent international shippers. If exporters as a class, in any year of normal price movements, were to make a profit of 2.4 cents a bushel on futures, it would be nothing less than remarkable. To make in one year a large profit on the trading transactions and a stand-off on the hedging, and in the next year to make no profit on the trading transactions and a heavy gain on the hedging, is not to be regarded as normal merchandising.

TABLE 8.—NET TRADING PROFITS OF WHEAT EXPORTS*

(Cents per bushel)

| Basis | Sept. 1, 1917, to Feb. 28, 1921 | 1920 | 1921 |
|-----------------------------------|---------------------------------------|-------|-------|
| Official: | | | |
| U.S. Grain Corp..... | + 3.6 | ... | ... |
| Commercial: | | | |
| Net trading profit.... | ... | + 7.9 | + 0.3 |
| Profit or loss on futures..... | ... | - 0.2 | + 2.4 |
| Total..... | ... | + 7.7 | + 2.7 |

* Data from Report of the Federal Trade Commission on Methods and Operations of Grain Exporters, I, 80-81, 113.

A broad scrutiny of international trading in wheat indicates that the normal range of profits of wheat exporters is narrow. In every wheat-exporting country are two competing groups of exporters: (a) the nationals of the exporting country; and (b) foreign shippers, operating either as foreign houses or through American concerns that are foreign-owned. This means that nationals of the United States compete here with international grain merchants. This is fierce competition. It was brought out in the investigations of the Royal Commission on Food Prices that a profit of one-fourth to one-half of one per cent on the investment in each shipment is as much as is aimed at by European importing houses. We are advised by exporters that it is rarely possible to secure in the foreign wheat prices of their export shipments more than one per cent above actual cost items. The average length

¹ Report of the Federal Trade Commission on Methods and Operations of Grain Exporters, 1922-23, I, pp. 80-81 and 113.

of investment of the British import house, when it buys in surplus-producing countries and holds possession during the voyage, is at least thirty days. The average length of investment in an export transaction of an American national, if he holds possession during the voyage, from the time the grain is bought until payment is received is probably thirty days. Of course, shipments vary in respect to time of payment. The turnover of the business is problematical. We are advised that it is rare for American capital engaged in wheat export to have a larger turnover than five times a year and that few British importing merchants enjoy a turnover exceeding this figure. This estimate of turnover applies to capital and credit actually concerned in exporting transactions, not to capital employed in domestic merchandising. The Federal Trade Commission¹ gave estimates of turnovers ranging from 8 to 15 times, in the years 1920 and 1921; but there is little doubt that the inclusion of domestic transactions has raised the figure for turnover as computed by the Commission. An annual gain of one per cent on the total turnover of the year is esteemed a good profit in foreign circles. It is fair to conclude that the profits of American nationals engaged in exporting wheat cannot be notably greater than the profits of European nationals engaged in importing wheat from this country, except in so far as larger gains may be made through futures.

In the *Report of the Royal Commission on Food Prices*² it is stated, on the basis of evidence secured from the Board of Inland Revenue, that the average profit of the grain and flour trade in the United Kingdom during the four fiscal years 1920-24 was 1.98 per cent per turnover. It is pointed out that the profits of wheat traders are derived less from handling and selling wheat than from speculation, meaning by this "correct antici-

pation of the course of prices in the immediate or more distant future."³ These facts imply a limitation of hedging exporters' profits in this country.

That exporting wheat has been fiercely competitive and not highly remunerative is suggested by the large number of exporting houses that have dropped out during the past three years. Membership in the American Grain Export Association declined to such an extent that this organization has collapsed. The business carries heavy hazards: shipments miss boats; charters go awry; buyers protest quality; and purchasers refuse to accept cargoes, with demurrage and liquidation losses to the exporter, as was the case with declining prices in the spring of 1925. That exporting profits represent no burden to the wheat grower, in terms of cents per bushel, has been generally recognized in Congressional hearings, as evinced, for example, by a remark of Senator Gooding at a Congressional hearing: "My impression is that in wheat there is very little margin, maybe because of the volume of the business transacted, but as I figure there is very little difference between the local market and the Liverpool market, figuring on so small a unit as a bushel."⁴

It is important, however, to give illustrations of the fallacy of judging the export spread by a comparison of price quotations at home and abroad. Two will be sufficient—one drawn from the hearings of the Royal Commission on Food Prices and the other from *The Wheat Situation, a Report to the President*, in 1923, by Secretary Wallace.

Investigations of the spread in wheat prices between exporting and importing countries have recently been carried out by the Royal Commission on Food Prices.⁵ Just as farmers in the United States have believed there was an unnecessarily wide and extortionately profitable spread between farm price and port price, so the British consumers have believed there was an unnecessarily wide and extortionately profitable spread between f.o.b. port price in exporting countries and the c.i.f. mill price in Great Britain. The Royal Commission went into the matter, and before it the business affairs of importers and merchants of wheat in the United Kingdom were openly

¹ *Op. cit.*, I, 92.

² *First Report*, I, 17.

³ *Ibid.*, p. 74.

⁴ *Hearings before the Committee on Agriculture and Forestry, U.S. Senate, on S. 1642 and S. 2012, Part I*, p. 355, 1924.

⁵ *First Report of the Royal Commission on Food Prices, 1925, Vol. I*, pp. 14-16 and 59-77; *Vol. II*, pp. 36-61, 170-190, and 195-207; *Vol. III*, pp. 35-41, 95, 96, 102, 124.

revealed. It was made clear that the usual spread between prices in exporting countries and prices in the United Kingdom was so narrow as to fall below the usual costs of freight, interest, and insurance. Indeed, it was shown that it is normally possible in London and Liverpool to purchase parcels of wheat at lower prices than hold in the countries of origin, cost of transportation considered. If the spread were as wide as was suspected by British consumers, if routinely one could purchase wheat in an exporting country, transport it to the United Kingdom and sell it there at a regular profit, obviously it would be a riskless business.

The result of the investigation was clearly to establish the narrowness of the margin between f.o.b. wheat prices in exporters' countries and c.i.f. prices in the United Kingdom. The large importing co-operatives, such as the English Co-operative Wholesale Society, were not quoted as importing on a narrower margin than large merchant firms or mills. In the *Report* of the Commission (p. 65) is a short tabulation of spot prices of No. 2 Hard Winter wheat in Liverpool compared with c.i.f. prices in the United Kingdom on the basis of the New York cash prices, over the period July 1922 to March 1925. The tabulation is unsatisfactory because it contains only ten quotation dates and the spot prices in Liverpool are somewhat too high for an equitable comparison because they contain handling and storage charges. But taking the quotations as they stand, the table indicates that the average spot Liverpool price was 12s 5½d per hundred pounds, while the computed price on the basis of New York was 12s 6¾d per hundred pounds.

And, indeed, it was made clear that the people of the United Kingdom obtain their foreign wheat supplies at so narrow a spread because the world-wide operations of British grain dealers enable them to take advantage of all local and short-time selling pressures in surplus-producing countries and of local and short-time buying pressures in other importing countries. The international grain traders of the United Kingdom did not merely emerge from this investigation with the Scotch verdict of "not guilty"; it was made clear that they served

the British public at a low rate of interest on capital invested and with a low reward for enterprise. It was brought out in the testimony that speculation works in the direction of lower wheat price in the United Kingdom.¹

The danger of regarding as comparable different sets of prices currently quoted was illustrated in *The Wheat Situation*, 1923. On pages 99, 100, and 101 (Tables 37, 38, 39, and 40) stand comparisons of wheat prices between North American points (Winnipeg, Kansas City, Chicago, and Minneapolis) and Liverpool, in which the North American quoted prices plus freight are compared with the Liverpool quoted prices of the same wheats. This means comparing the actual c.i.f. prices in Liverpool with hypothetical c.i.f. prices of the same dates, secured by adding the North American prices and the freight. The quoted Liverpool prices are irregularly higher or lower than the sums of the American prices plus the freight, with wide and erratic extremes. In some months, the actual Liverpool prices stood over 20 cents a bushel above the hypothetical prices, in other months the actual Liverpool prices were considerably lower than the hypothetical prices. Now, considering the constancy and verifiability of freight rates, the fluidity of finance and transportation, and the narrow margin of export transactions, making further allowance for distressed wheat, these figures were impossible as expressing trade comparisons; in one or both sets of these figures inherent bias or defects made them directly incomparable.

In Canada the figures provoked considerable comment, and attempts were made to interpret the spread as indication of the profit made in exporting during the period in question. The Saskatchewan Co-operative Wheat Producers, Ltd., addressed an

¹ Sir Halford Mackinder: Your explanation, I gather, is that there is a constant rain of optimists pouring through this trade who enter with money and go out with none?

G. J. S. Broomhall: Exactly.

Sir Halford Mackinder: And that we are enjoying cheaper bread than we otherwise should because we are getting a subsidy from speculation?

G. J. S. Broomhall: That is so.

First Report of the Royal Commission on Food Prices, 1925, II, 199.

inquiry to the present Secretary of Agriculture as to the exact meaning intended to be placed on the figures, pointing out that certain charges in the handling of grain en route had been disregarded in the report, and protesting that spot prices at Winnipeg and at Liverpool on the same day did not constitute a fair comparison for the purpose of estimating the profits of exporters.¹ In reply, as of March 13, 1925, the Secretary of Agriculture issued a disclaimer, conceding the correctness of the contentions in the Canadian communication and giving as the chief purpose of the price comparisons the desire to illustrate the effect of the tariff on American spring wheat.

Consider now the international situation: The United States Secretary of Agriculture published figures suggesting that the Liverpool prices averaged 8 or 9 cents higher than the sum of the American prices plus transportation, interest, and insurance. Direct and specific testimony is given before the Royal Commission on Food Prices that the Liverpool price is close to the American price plus freight, interest, and insurance. Certainly a remarkable state of affairs. In the *Report of the Royal Grain Inquiry Commission*, on page 140, evidence was submitted that carrying charges had been omitted from the American table that might run as high as 5 cents a bushel. On looking over the table, it occurred to us that possibly the comparison might be more fairly made if one contrasted the Winnipeg price of one month with the Liverpool price of the following month, and to the Winnipeg price added a constant figure for charges from the head of the Lakes to Liverpool—namely, 27 cents—as stated by the Dominion Bureau of Statistics for approximately the same period. The average spread of the original table was 8.7 cents; with the modified computation it was 7.1 cents; thus little is accomplished by any such attempt to improve the calculation. It was also stated in the *Report of the Royal Grain Inquiry Commission* that the wide margin in the months of September–October–November, 1922, was due to a railroad strike in the United States that dammed back

Canadian wheat and produced a temporary shortage in Liverpool. The quoted Liverpool prices for the months of September, October, and November, however, do not give much evidence of a shortage in spot wheat in Liverpool except in October; but the Winnipeg quotations for September and October were substantially depressed. If, however, one brings the Winnipeg prices for these two months up to the average of November and December and lowers the Liverpool price for October correspondingly, the average spread over the period is still 7 cents, an impossible figure. The true explanation is to be found in the inherent bias of quoted prices, as collected, rendering them unfit for comparison.

The following instructive tabulation, Table 9, of charges against grain from Sas-

TABLE 9.—CHARGES AGAINST GRAIN FROM SASKATCHEWAN TO LIVERPOOL*
(Cents per bushel)

| Item | Amount |
|---|--------|
| Country elevator..... | 1½ |
| †Commissions on shipment from country... | 1 |
| Average rail rate, say..... | 12 |
| Weighing and inspection in and out, including lake shippers' charges..... | ½ |
| Terminal handling | 1½ |
| †Cash grain brokerage, double charge..... | ½ |
| Vessel brokerage, say..... | ½ |
| †C.I.F. and F.O.B. brokerage..... | ½ |
| Lake freight to Montreal, say..... | 11 |
| Lake insurance to Montreal..... | ½ |
| Brokerage and elevation to seaboard..... | ½ |
| †Shippers' profit to seaboard..... | ½ |
| Ocean freight Montreal to seaboard..... | 9 |
| Ocean insurance, say..... | ½ |
| Outturn insurance, say..... | ½ |
| †Exporters' profit, say..... | ½ |
| †Brokerage at Liverpool, varies, about.... | ½ |
| Unloading at Liverpool and other charges | 1 |
| Interest and brokerage..... | ¾ |
| Total | 41½ |

* From Dominion Bureau of Statistics (daggers ours).

† Items reducible by a wheat-growers' co-operative. See text.

katchewan to Liverpool has been furnished to us by the Canadian Dominion Bureau of Statistics.

A scrutiny of these items indicates how low are official Canadian estimates of the average exporter's profits and the Liverpool

¹ Compare *Report of Royal Grain Inquiry Commission*, 1925, pp. 139–140.

charges for handling and selling. It also indicates how few are the items that a Canadian wheat growers' co-operative could expect to reduce, with corresponding furtherance of returns to growers. These items are marked with a dagger. The items are marked on the assumption that it does not lie within the power of the co-operative to secure a reduction in the unmarked items, such as rail rate, lake freight to Montreal, or ocean freight from Montreal, for none of which the present Canadian middlemen are responsible. The total of these marked items amounts to $3\frac{1}{2}$ cents per bushel, representing the field of possible economies of the co-operative marketing association in respect of export of wheat.

On the basis of available evidence, direct and indirect, we find no basis for the contention that the exporting of wheat is an exploitive business, productive of large profits. On the contrary, on the basis of such internal evidence as is available, one arrives at the conclusion that the export of wheat is a business involving large capital

and credit, heavy risk, and relatively low profits, success being largely the expression of specialized talent in management. Under these circumstances, it is difficult to believe that a national wheat co-operative association could be expected to achieve economies in the export of wheat if the total export of this grain were placed in the hands of such an association. It is difficult to believe that the net profits of commercial exporters, added to the farm price of wheat, is enough to justify the risk, regarding the business purely as a financial transaction. As an act of policy in co-operative tactics, however, growers might desire to control exports irrespective of profits, as part of the established campaign against middlemen. This seems to be the situation in Canada. A co-operative association could raise the quality and the reputation of American wheats in Europe. A co-operative might elect to sell wheat in Europe to millers instead of to traders, as the tactical part of a policy of eliminating middlemen; but we have no data to indicate that economies would thereby be directly achieved.

X. PROBABILITY OF MARKETING ECONOMIES

Are middlemen's charges for handling, selling, and storing wheat excessive? Do they represent an exploitation, or an over-price for the service? Would it be possible for a co-operative association to perform the services more efficiently? Could a co-operative hope to reduce the gross figure for charges and increase the net figure for profits? Considering the number of unusually able men engaged in the terminal grain business, is it certain that a growers' co-operative could secure managerial talent of equal ability? Are substantial economies achievable through revamping of the national elevator system? If the net profits of all wheat middlemen were distributed pro rata over the wheat crop, would it represent a notable increment per bushel?

For the most part, middlemen's charges are fixed by law or other form of regulation and are public. On account of overextension, competition between elevators in most sections of the country is intense. There

is little evidence that fortunes are being made by dealers in grain. In Canada two large co-operative elevator companies have been in business for years, under comparably efficient management, handling a large volume of transactions, with public accounting. From the experiences of these companies one must draw the inference that in Canada elevator operations have not been more than nominally profitable. The president of one of these organizations stated to the writer several years ago that the chief function of the co-operative elevator company was to provide public competition with commercial elevators, not to make profits on operations. Not long ago the co-operative elevator companies appealed to the government to raise the handling charges; and last year one of these large companies suffered an operative loss on the country elevators. Such profits as the large line-elevator companies of Canada have made in the direct handling of wheat have

been secured because of superior and unusual management. In the United States only exceptionally managed line-elevator companies are able regularly to make money, and the same is true of mill-line elevators. The Grain Marketing Company held an option to purchase four large terminal elevator companies in Chicago and Kansas City, and there is reasonable ground for the inference that these companies had not been making a satisfactory return on the capital figures for which they were to be taken over. The records of our numerous regional and state wheat co-operative associations are either unsatisfactory because of poor management or cover too brief a period of time; but such data as are available do not convince one that these companies have achieved the anticipated economies or profits. Growers for decades have been organizing local farmer-owned elevators, with a high mortality of bankruptcy and a widespread record of disappointment to their promoters. Over most of the country it is clear that for country elevators there is no profit in the handling of wheat unless this is supplemented by the handling of other grains, and possibly of livestock; and, indeed, it is usually essential that grain handling be supplemented by the merchandising of farm implements, fertilizers, feeds, seeds, flour, coal, lime, cement, lumber, and other materials, since handling grain is a seasonal business and a high enough charge cannot be made to carry the equipment through the year with interest on capital and reward for the entrepreneur unless these are employed through the rest of the year in other lines of business.

The marketing of grain is not an inherently wasteful process, but it is a wide-flung process. The average spread of country elevators is the average of a small number of efficient line companies and mill companies, some moderately efficient farmer-owned and co-operative elevators, and a large number of inefficient commercial and farmer-owned companies. If all country elevators were as efficient as the best fourth, the average cost of country handling would be substantially lower than it is. Terminal elevators as a class are more efficiently run than country elevators, but even here

marked differences exist. If they were all operated with the efficiency of the best fourth and approaching seasonal capacity, the average cost would be somewhat lowered.

In judging of the economies in marketing to be achieved by co-operative associations, the results of single years may be misleading. Proponents of co-operation ought not to misuse initially favorable figures, nor should opponents misuse initially unfavorable returns. On the basis of audits of certified accountants, grain dealers in Canada contend that farmers who marketed through fifteen commercial companies operating over a thousand elevators received a higher average price than the published average price of the pool. The prices are not strictly comparable, and apparently the pool's selling methods favored No. 1 as against the lower grades. Pool prices can be properly compared only with average of total non-pool wheat growers, not with a selected fraction or with the transactions of a selected group of elevators. That the pool in its first year of operation should have been less efficient than established companies, is exactly what was to have been expected. It is also stated that members of the state wheat pools in the United States are receiving less than many growers outside the pools. From available accounts of state co-operative associations it seems clear that they are more effective in selling to millers than in merchandising in the terminal centers. Without a comprehensive analysis, unweighted comparative figures mean little. The margin of the pool applies to all members, but the non-pool average includes wide variations between growers who got the top price and those who did not receive enough to cover cost of production. Membership in a pool may prevent some growers from making a killing, but it will also prevent others from going into insolvency. It is better for wheat growing that all growers receive the same price, quality considered, than for some to get high and others low prices fortuitously.

It may be shown for a number of successful co-operatives that if they had been judged on their early achievements, they would have been disbanded. Co-operation is

a long-term undertaking, and co-operatives make a tactical blunder when they make claims of early returns. Co-operation introduces new factors into marketing, and the competition between commercial marketing agencies is different in the presence of a co-operative association than without it. The accounting of wheat handling and selling is a very complex operation, and the data lend themselves easily to misconstruction. If considerations later to be adduced, bearing on wider activities to be expected of wheat co-operative associations, are well founded, whether small relative gains or losses in the spread are achieved in the early years becomes a secondary question.

Provisionally, it seems fair to conclude that the present margin between country price and mill and port price is not excessive. It is improbable that, merely taking over the business as it stands, a co-operative could narrow the spread or increase net profits; but it would be premature to conclude that current efficiencies could not be maintained.

It is common for opponents of co-operative marketing of wheat to dwell on the fact that under the present system of marketing the grower receives his entire return for the crop in one early autumnal payment, whereas under a conservative policy of co-operative marketing he would receive possibly 70 per cent of the return in the autumn and would have to wait for the final payment for probably nine months, with occasionally a small final payment still longer deferred. Now, there are advantages as well as disadvantages for the grower in the deferred payment of the co-operative association. A going co-operative would contemplate, let us say, paying 70 per cent in the month of delivery of wheat and a final 30 per cent in the month just before the succeeding harvest. To one familiar with the nature and tendencies of farm expenditures, this 30 per cent might well be regarded as a reserve. If in the possession of the farmer during the winter, it might have been properly expended or saved, but it might also have been wasted in ill-considered purchases for the farm or sunk in investments or speculations outside of the farm. For wheat growers to have a defi-

nite reserve of 30 per cent of the return of the past year positively available to them at the time of harvest of the succeeding crop, strikes one as being rather an advantageous position. The failure to build reserves has been a notorious defect of farm finance, and the deferred payment of a growers' co-operative may work out to possess the advantage of just such a growers' reserve.

Dismissing then the view that the experiences in the grain trade of the country afford reasonable grounds for believing that notable savings might be accomplished through a transfer to wheat co-operative associations of existing wheat-handling facilities, including both primary and terminal elevators, do reasonable grounds exist for believing that a co-operative could revamp the business and make it more profitable? We have an overextension of elevators, both country and terminal, varying from region to region, including redundant and obsolete units carried at figures higher than cost of replacement. If the elevator system of the country were to be revamped in accordance with the practices of industrial mergers, this would result in the elimination of a considerable percentage of plants. Bearing in mind that country storage is cheaper than terminal storage, that the best advantage of rail rates must be utilized, and that mills are tending to purchase in the country, there still is little question that a merger conducted along efficient industrial lines would lower the number of units, reduce the figure for capital investment, and increase the volume of operations per unit throughout the season. Mergers are necessarily ruthless; such a revamping of the national elevator system would represent the scrapping of probably several thousand elevators, with investment losses to their present owners, many of them farmers. In the recent successful reorganization of the Raisin Growers' Association it was found necessary to scrap many redundant packing houses. This question of policy arises in the organization of every wheat-growers' co-operative association, as is now illustrated in Canada, where the farmer-owned provincial pools and the farmer-owned co-operative elevator companies are forced to contemplate some method of absorption of the elevators by

the pools. The policy to be determined upon with respect to the existing elevator equipment is crucial in the development of a wheat-growers' co-operative. If the problem has been difficult in the prairie provinces of Canada, where conditions are simple and wheat growing is still expanding, how much more difficult would be the problem in the United States with four regions of divergent wheat characteristics. But easy or difficult, the problem must be faced and there is no purpose in hypocrisy. The success of a wheat-growers' co-operative involves putting existing middlemen out of business and revamping the elevator system. This includes putting undesirable units out of business, with loss to their present owners, just as in the case of elimination of inefficient units in an over-extended industry. Only the extent, not the need of revamping, is conjectural. But the undertaking would be one of great magnitude and unfavorable complexity.

If one were to add to the weighted farm price of wheat a reasonable estimate of the grower's share of the costs of future trading and of the profits of speculators, plus a reasonable estimate of the profits of terminal grain dealers and elevators, including the results of arbitrage and spreading, plus a reasonable estimate of the profits of country grain dealers and elevators, with continuation of the advantage accruing to the grower's price through insurance of dealers, millers, and exporters by hedging, the sum of these, we are constrained to believe, would not represent an increment per bushel of more than a few cents. It is certain that no reasonably-to-be-expected increment would be regarded as satisfactory by growers in general, since it would not be

enough notably to improve their position or modify the marginal supply price. This general appraisal must have been in the mind of H. C. Taylor when he remarked: "It is believed that 90 per cent of what the farmer can now do to improve his marketing situation consists in adjusting his production to the demands of the market."¹ Granting everything that may be claimed for co-operative marketing as applicable to wheat in the United States, we have no grounds for expecting that the farm value of the crop could be substantially increased by horizontal merging of the present crop of wheat of the present types.

Unsatisfactory as is the survey of middlemen's charges in the present state of information, it seems clear that the available evidence holds out little prospect for satisfying economies by a co-operative marketing association. Using the present plant of elevators, there is little to suggest that the spread of gross profits could be narrowed. If the business were conducted as efficiently as under private management, the rewards of the entrepreneurs now going to middlemen of special talent could not be expected to exceed a few cents a bushel, and this would fail to accrue to the association if equal marketing talent were not available. Even the spokesmen for the wheat growers expect little in respect of savings on the spread. Senator Johnson of Minnesota remarked, "I agree with you that what the farmer pays between the time when the grain leaves him and when it reaches the miller has not been excessive."² Senator Gooding also remarked that "the profit on a single bushel of wheat is so small that if the farmers saved it, it would not help them much."³

XI. THE NATURE OF ORDERLY MARKETING

By reason of modern development of the psychology of advertising, every economic movement has its catchword or slogan. The catchword of co-operative marketing is "orderly marketing." This is a pleasing phrase, that sounds well in contrast to "disorderly marketing." But when one undertakes to find out exactly what is meant

by the adjective, the search for the entity is poorly repaid. The producer prefers to be paid at the time of harvest, the consumer

¹ "Adjustment of Production," *The Banker-Farmer*, May 1921, p. 7.

² *Hearings before the Committee on Agriculture and Forestry, U.S. Senate, on S. 1642 and S. 2012, Part 2, p. 256, 1924.*

³ *Ibid.*, p. 445.

does not pay until the time of purchase. Producers and proximal consumers will always hold different views as to desirable rate of marketing and in each season the outcome will depend on whether the market tends to be a buyer's or a seller's market. The best way to find out what ought to be meant by orderly co-operative marketing is to study the marketing experiences of the different commodities that have been handled by co-operative associations.

For walnuts, orderly marketing means selling the crop before Christmas. Orderly marketing of prunes and raisins means avoiding a carryover. For oranges, orderly marketing means successively bringing forward the crops of the different varieties from the different regions, in such manner that deliveries do not pile up on each other and that gluts in the wholesale markets are avoided. The orderly marketing of hogs means such restraint of the daily movement to the packing centers as not to throw into the stockyards more animals than the packing houses can effectively manage. The orderly marketing of the fraction of the corn crop that leaves the county where it was grown consists in feeding this corn gradually to the consuming centers. The orderly marketing of copper after the war meant the impounding of hundreds of millions of pounds of copper under special loans. The Stevenson Plan represents British producers' ideas of the orderly marketing of rubber; the valorization scheme represents the Brazilian idea of the orderly marketing of coffee.

The orderly marketing of wheat in the United States must have reference to at least four factors or groups of factors:

1. The time of easiest and cheapest movement from the farm, the costs of storage, and of transportation by rail and water.

2. The curve of milling demand.

3. The relation of the American crop to the crops of Canada, Russia, Argentina, and Australia.

4. The quantity and quality of the wheat crop of the importing countries of Europe.

If we were not a wheat-exporting country, the orderly marketing of wheat would be related mainly to the factors of farm movement, transportation, and curve of

milling, with consideration of the varying costs of storage in different positions. We have four principal wheat regions, with wheats of different characteristics, and the yields of these regions vary from year to year. These crop variations result in different cross-currents of wheat and flour movement from year to year. Normally, the mills grind in the first six months of the fiscal year something like 55 per cent of the annual flour production, this varying to some extent in accordance with fluctuating demand for flour in the export trade. Normally, also, mills buy more in the autumn than they grind, in order to safeguard supplies of particular wheats. The influence of the cost of movement on the time of delivery varies in the different regions from year to year. Lastly, one must compare the cost and safety of farm storage with elevator storage, and of country-elevator with terminal-elevator storage. The interest of the wheat grower is best served when the miller has the least interest in the price of wheat and the most interest in the manufacturing of flour. When all of these factors are evaluated in respect to the domestic disappearance of wheat, a preponderance of autumnal marketing is believed to be economically justified. But with the best of information on seasonal factors, the rate of marketing always includes an element of trial and error.

So far as exports of wheat are concerned, in one year orderly marketing means getting the wheat abroad as far as possible in advance of the maturity of the crop in the Southern Hemisphere; in another year orderly marketing means restraining the export of our exportable surplus until spring. Studying the curves of over-sea movement of wheats and the curves of export movement from the the different surplus-producing countries over a period of years, one comes to appreciate that orderly marketing is a series of mobile adaptations to varying crops, seasons of harvest, and prices.

Certainly, there is no warrant in our knowledge of the domestic disappearance of wheat to support the idea that orderly marketing means selling one-twelfth of the merchandisable crop each month. The rate of marketing of a co-operative will be influ-

enced by whether hedging is done or not. Viewing the marketing of the crop as a whole, if wheat growers are to participate in cash speculation, orderly marketing means following a correct forecast of the price movement during the year; if it is not to include cash speculation, it means marketing the grain in accordance with the average curve of milling demand and of export flow under appropriate hedging. It is the policy of the Kansas Wheat Growers' Co-operative Association to market one-twelfth of the wheat in the pool each month; but they choose the time within each month when they will sell wheat—in other words, speculate within the month. The central selling agency of the pools of Canada is marketing the crop differently in 1925–26 from the way it did in 1924–25. The circumstances in the two years are very different and one may be sure that the officers of the central selling agency regard their scheme of marketing, though different in the two years, as orderly in each of these years. Orderly marketing is a discreet process, but the term has been indiscreetly overworked and perverted. The Joint Commission of

Agricultural Inquiry reached the conclusion that

under the existing system of grain marketing the farmer who has sold his crop soon after harvest has come off quite as well as the farmer who has held his grain and sold in the last half of the year.¹

Black and Price, discussing seasonal variation in prices of wheat and potatoes, remark:

Neither of these margins will more than cover the costs of storage. How, then, does the producer lose by throwing these two commodities on the market in the fall? The answer is that he does not lose by so doing. We are constantly being misinformed even by well-meaning people on this point.²

Finally, in the course of a discerning scrutiny of orderly marketing, Mackintosh concludes that

It is clear from the foregoing that "dumping" the wheat crop as popularly understood has not depressed the cash prices for wheat at Winnipeg in any predictable way and that the mere spreading of marketing over the twelve months of the marketing season is not going to affect significantly the comparative cash prices for the different months.³

XII. THE CO-OPERATIVE AND WHEAT EXPORT

How would a national wheat co-operative association handle the specific task of export of wheat? A co-operative would recognize that profitable export of high-grade wheat is only occasionally to be anticipated, and that unprofitable export of low-grade wheat is to be shunned. If sub-marginal land were eliminated, unprofitable wheat growing replaced by more promising crops, low-grade wheats eliminated by culling, and undesirable varieties replaced by prime milling varieties, the export problem would be different from what it is today, and the attitude toward it would be altered. We are here concerned with the current problem of export of the present surplus of existing types and qualities.

Specifically considered, the problem is largely one of proper classification of values. It is a hard experience, but apparently it is necessary in every branch of agriculture

to teach growers that it is better to waste produce on the farm than to waste it in distributive channels. Most of the red-ink returns of growers of fruits and vegetables are due to the shipment of commercially poor produce. Let one take, region by region, the available information on dockage and proportion of low-grade wheats. Let the dockage and low-grade wheats be classed as animal feeds and prices set thereon in proportion to their feed value in competition with coarse grains. Let the farm price of the dockage and low-grade wheat in terms of competitive feed values be contrasted with the farm price of the dockage and low-grade wheat passing into export. The writer is convinced such com-

¹ *Op. cit.*, p. 67.

² "Co-operative Central Marketing Organization," *University of Minnesota Agricultural Experiment Station, Bulletin 211*, April 1924, p. 9.

³ *Op. cit.*, p. 16.

putations would have suggested that in each year since 1920 the value of the crop would have been larger if the dockage and low-grade wheats had been used as feed and not sent into distributive channels. The loss on the weighted price of dockage and low-grade wheat kept on the farm at competitive feed prices would have been overbalanced by the increased price on the reduced volume of the crop sent to market. Just as corn must be converted into meat to be remunerative, so low-quality wheat should be converted into animal products to be remunerative.

A national co-operative wheat-growers' association could set up a double standard of marketing. A co-operative could sell its export fraction at a lower price and debit this directly against the growers in the final accounting. That is just what the final accounting is for, to reach the weighted price for the delivery of each member. Several agricultural co-operative associations do so now, in the course of routine merchandising. In the export trade of the agricultural specialties, high grades at top prices go out beside low grades at dumping prices.

There is considerable range of adaptation in farm reserves of wheat and a co-operative association would be in position to reduce reserves in a time of high prices and to augment them when prices were low, which is just the contrary of the practice of a surprising number of wheat growers.

A national wheat growers' co-operative would need to store wheat in elevators and warehouses as an adjunct to seasonal marketing; administrative stocks would need

to be carried in advantageous positions; and a carryover of possibly a month's supply would have to be held in reserve. Storages in these ways would be necessary even if the country were on an import basis. A national association, however, might in addition need to impound wheat, meaning by this the withdrawal from domestic sale or export of wheat in hand in excess of the requirements of the crop year. Such an impounding would represent a loss if one heavy crop followed another; it would represent a gain if a light crop followed a heavy crop. In the long run, a policy of impounding would correspond to a smoothing-out of the curve of production. The impounding of wheat would obviously represent a choice of evils. Mining industries frequently have to impound their products, of which petroleum affords an excellent illustration. Manufacturing industries also not infrequently turn out a volume of goods in excess of demands, and have the choice between clearing out the accumulation by dumping or holding out a fraction for the next season. Losses of dumping or costs of impounding would be prorated back to growers in the final price. So long as the country is a net exporter, circumstances might arise in which choice must be made between dumping on the export market and carrying over the excess fraction into the new crop. Such a contingency would probably be made remote if wheats of undesirable varieties and inferior qualities were shut out of the marketing program. It seems unlikely that a crucial problem in export would remain if wheat growing were revamped from the inside.

XIII. WHEAT CO-OPERATIVES AND GRAIN EXCHANGES

In theory, a co-operative wheat association such as we have been discussing, controlling a large percentage of the acreage and holding powers of a monopoly, could market its produce without the need of a grain exchange. During the war the Grain Corporation handled the wheat crop without a grain exchange; but a minimum price was guaranteed. An association of rubber producers markets crude rubber on a basis

of a formula without recourse to a rubber exchange. Controlling the crop, a wheat-growers' association could feed out wheat to mills and exporters in accordance with current demands. The ultimate consumers' demand for wheaten products is relatively inelastic; the elasticity of millers' demand is related to seasonal curve of grinding; the elasticity and variability of exporters' demands depend upon world supply and

price; there is some elasticity in stocks. Broadly considered, there are few staple commodities that display so little variability of demand as wheat. If a wheat-growers' co-operative association possessed such confidence and support of growers as to give it an approximate monopoly, if it were adequately financed and efficiently managed, it could operate without the use of the grain exchange, since it could dispense with a daily public registration of price, and rely upon the sagacity of the management to forecast the trend of price. This position would be most natural and feasible with the country on a domestic basis and wheat competing only with other staple foodstuffs.

But this does not mean that the association would market without the incidence of speculation. The association could not escape speculation, though it would be in position to elect the form of speculation. Even a monopoly could not escape speculative operation. Holding the crop for a rise, buying wheat for a rise, buying a future for a rise, and selling a future for a decline are all speculative. If the association practices hedging, it invites futures speculation by someone else to absorb the hedges; if the association does not practice hedging, it speculates in cash wheat. So long as others speculate in wheat futures and the association practices hedging, the association in effect approves futures speculation. If the association, eschewing hedging, were to market in twelve annual instalments, it would speculate on the assumption that such a marketing flow would give a better return than any other rate of marketing. If the association were to market on the basis of a forecast of price trend, as has evidently been done in Canada, it would be speculating in cash wheat. There is no wool exchange, but the wool-growers' associations, trying to anticipate price movements in order to secure the largest result for members, necessarily practice one form of speculation—namely, holding a commodity for rise in price.

The wheat-growers' associations of the past have used the grain exchanges. This statement does not mean much for the United States because to date our national

wheat-growers' associations have been futile organizations. Canada has had for a number of years two large co-operative elevator associations that annually marketed large volumes of wheat for members and nonmembers. The United Grain Growers, Ltd., and the Saskatchewan Co-operative Elevator Company have used the exchanges; they merely supplanted pre-existing middlemen, but otherwise accepted the customary system of trading on grain exchanges.¹

The provincial pools of Canada, however, are of contrary opinion. It is the declared ultimate intention of the management (Central Selling Agency) of the provincial wheat pools (Canadian Co-operative Wheat Producers, Limited) to sell directly to Canadian millers for domestic consumption and for export as flour, and in its sales for export to deal directly with millers in foreign importing countries.² The selling agency does not speculate in the sense of buying futures for a rise or selling futures for a decline.³ The selling agency does not hedge receipts (the wheat deliveries of members) by sales of futures. Such sales of futures as are made by the selling agency represent the disposal of options that have been taken from millers in exchange for cash wheat sold to them. The selling agency is not supposed to hedge sales to foreign customers; but the trade is convinced that last autumn the selling agency disposed of quantities of wheat abroad on the basis of replacement cost and protected these sales by purchases of contracts in the nearby futures, against which practice neither growers nor grain dealers were in any mood to protest, since these purchases had the effect of supporting the current price of wheat. Concerning hedging, we are advised by the central selling agency that "this class of trading is kept to an absolute minimum, will be gradually reduced, and in course

¹ For a good review of the Canadian situation see W. A. Mackintosh, *Agrarian Co-operation in Western Canada*, Toronto, 1924.

² If the pools deal directly with European importers and do not announce their sales, that removes one nidus of rumor from the market.

³ According to the *Report of the Royal Grain Inquiry Commission*, 1925, p. 131, the Alberta Pool sold wheat for future delivery "when prices looked attractive."

of time, as the pool method of marketing grows, will doubtless be eliminated."¹ Further, as of January 8, we are informed that "of the total quantity of wheat sold by the Pool this season to date, approximately 65 per cent was disposed of without going through the grain exchanges in any form."² In a certain conventional sense, since the selling agency does not hedge receipts, the Canadian pools are engaged in a stupendous speculation in cash wheat.

It will be difficult for the Canadian pools to establish their type of marketing so long as future trading in wheat continues in Canada, the United States, Argentina, and England, and until their European customers, be they importers or millers, cease hedging. Trading in wheat futures is worldwide; speculators may elect the country in which they place their contracts for purchase and sale; and hedging, arbitrage, and spreading are international. There is nothing to prevent Americans, British, Argentinians, Australians, or Europeans from buying or selling wheat futures on the Winnipeg Grain Exchange or upon any of the exchanges in the United States. Similarly, there is nothing to prevent Canadian speculators from dealing on the exchanges of Europe, the United States, and South America. The Winnipeg Grain Exchange occupies a position of peculiar advantage in that the volume of trading is there kept secret, while they receive daily the reports of the volumes of trading on the exchanges in Liverpool and the United States. If the central selling agency does not hedge receipts from members, but must still accept customers' options taken in payment for cash wheat, this may place them on the defensive under certain circumstances. The Canadian pools and the millers of that country have an arrangement for next season whereby the pools are to make some sort of a limited guarantee of prices, with assurance of parity with European millers, which the pools believe would free millers from the necessity of hedging.³

¹ Correspondence with the Food Research Institute.

² *Idem.*

³ Compare discussion in Mackintosh, "The Canadian Wheat Pools," *Bulletin* 51, Queen's University, pp. 20-21.

It is suggestive to envisage briefly the developments possible in the United States. Let us assume a national co-operative that has a quasi-monopoly of the wheat supply and does not practice speculative trading in wheat futures. If the association elects to practice hedging, it will not appear in the market as a speculator in cash wheat. If the association does not practice hedging, it will perforce be engaged in what amounts to speculation in cash wheat.

Assuming the continuation of existing grain exchanges, if the association were to abstain both from speculation in futures and hedging, the situation would be as follows. The association would sell wheat only to converters and exporters. Millers and exporters might continue to hedge, but the total volume of hedging would be reduced by the elimination of hedges of grain dealers. Just what proportions of hedges are carried by millers, grain dealers, and exporters, respectively, is not known; but a reduction of hedging to the volume of hedges of millers and exporters would certainly represent a substantial reduction. With reduction in the volume of hedging, millers and exporters would find hedging easier so long as the volume of speculative trading were relatively maintained. But the volume of speculative trading to be expected with a wheat-growers' association, occupying the position of a quasi-monopoly, merchandising grain only to converters and exporters, is wholly conjectural. With the country on an exporting basis, there might still be a large interest for speculation in wheat futures; with the country on a domestic basis this could hardly continue to be the case, except in event of extraordinary climatic uncertainties. Speculation in wheat futures rests on price fluctuations and forecasts or expectations of continuing price fluctuations. The professional speculator might still find it intriguing to engage in speculation in wheat futures with the wheat supply in control of a co-operative association, but amateur speculators would probably find little to attract them. At the same time, it is not difficult to imagine circumstances (in crop yields and price movements) in which the very fact that the pool did not practice trading in futures would

create an obvious opportunity for trained and even untrained speculators.

Hedging by converters might cease if wheat supplies were centralized in one association. If a wheat co-operative association at the beginning of each season were to announce in general terms a sort of basic price of wheat, just as there is a sort of basic price of steel, and millers could safeguard their supplies and look forward with confidence to price relations, very much as was the case during the war, the motive for hedging would largely disappear. This merely means that if a growers' association were able to stabilize prices, hedging would be unnecessary.

A very different situation would develop if a co-operative association should adopt the policy of hedging, and further if it should undertake to use hedging not merely as a negative instrument for the stabilization of prices but as a positive instrument for the increase of profits. The winter-wheat crop is harvested within a short period and represents the largest fraction of the crop of wheat. It might be the policy of the co-operative daily to hedge receipts by sale of futures; but there might also be the temptation to defer the hedge in the hope of striking a more favorable time in the development of the spring-wheat crop. In similar manner, later in the season the receipts of spring wheat might be hedged in the order of arrival; but the temptation might also arise to defer this hedge until what might be regarded as a more favorable time in the development of the crop of the Southern Hemisphere. So long as the country remains on an exporting basis, the hedging of a wheat-growers' association might be practiced simply as a routine act of price insurance, or it might become part of a price policy of the management, particularly spreading operations with reference to developments in the importing and exporting markets of the world.

A national pool, from the standpoint both of members and of customers, in consideration of the possibility of arbitrage and spreading, would enjoy a position of unique power on the established grain exchanges. When a volume of several hundred million bushels of wheat is concentrated into a

single hand, with power to determine the rate of marketing and also with power to determine whether, associated with this rate of marketing, hedging shall or shall not be practiced, and if practiced at what time and on what exchanges, the concentration of power becomes expressive. This is all the more true when one considers the international extent of future trading. Term markets have been established in Argentina and are in prospect in Australia; more and more European buyers are gravitating to hedging.

We have laws designed to prevent "manipulation" in wheat speculation, concerted buying and selling, the concentration of a large volume of trading under a unified policy. Concentration of operations is important, both in futures trade and in hedging. After all that wheat growers have said against speculation, it is difficult to imagine a co-operative dealing in futures contracts. Nevertheless, circumstances might arise under which the management of a co-operative might feel it desirable, or necessary, if free to do so, to enter on a course of speculation. In such a contingency the prospective possession of a large amount of wheat would give to a co-operative an enormous speculative power. The law against manipulation on grain exchanges was not passed for the sole protection of farmers, but because manipulation of markets is against general public interest. If concentration of speculative buying or selling is regarded as dangerous in the hands of a group of men ensconced in a Florida beach hotel, it would also be regarded as dangerous in the hands of men acting as trustees for the growers of wheat. If one feels strongly that concentration of buying or selling future contracts constitutes manipulation of the market, one would wish to see a wheat-growers' co-operative specifically debarred from speculation of the type of trading in futures contracts.

Concentration of hedging also may have the effect of manipulation. As a rule, the breadth of speculation is not greatly in excess of that required to absorb the hedges of millers, grain dealers, and exporters in their customary dealings from day to day and from market to market. When speculative activity declines with a normal vol-

ume of hedging, hedgers find that their transactions influence market price. Hedging is made effective in insurance only by wide distribution over time and space. If a wheat co-operative practiced hedging, regarding the deliveries of members as purchase, it could sell the hedge of a month's receipts in a day or in twenty-six days, in one market or in a number. If the wheat represented in the receipts of the co-operative were passing through customary commercial channels, the hedging would be widely distributed. If grain merchants should by agreement concentrate in one day their sales of futures representing the hedges on a month's purchases, this would be regarded as a menace to growers; but it would be no more in fact than the power possessed by a wheat-growers' co-operative receiving the same volume of grain, only reversed toward the consumers.

The proponents of pools insist that grain exchanges must cease under co-operative marketing. We venture to express below the belief that untoward monopolistic behavior of a wheat-growers' co-operative association is only remotely possible, if at all, in a country like the United States. But if such a co-operative should engage in operations on the contract markets, it seems likely that the possibility of manipulation by such a super-trader in possession of hundreds of millions of bushels of wheat, would lead the public to insist upon the abolition of grain exchanges as a guarantee to consumers that producers would not engage in speculative exploitation. This would mean that wheat growers, in exchange for control of marketing, would lose the benefit of price insurance.

In Canada the issue is clearly drawn. It is co-operative marketing without the grain exchange and without price insurance, versus competitive grain marketing with the grain exchange and with price insurance. Simultaneous with the announcement of the policy of the Pool looking to the extinguishing of both speculation and hedging the Royal Grain Inquiry Commission, in the course of the *Report* made to the Minister of Trade and Commerce of Canada, stated its conclusions on the subject of hedging as follows:

The conclusions drawn from this survey of futures trading and a future market are:

1. That a futures market permits hedging and that hedging by dividing and eliminating risks in price variations reduces the spread between the prices paid to the farmer for his product and those obtained for it upon the ultimate market.

2. That hedging facilitates the extension of credit and thereby reduces the cost of handling grain by making it possible for grain dealers to operate on less capital than would be the case otherwise.

3. That for the same reason hedging makes a larger degree of competition possible in the grain trade, on a given amount of capital.

4. That hedging is of advantage to exporters so that even in instances where grain is handled under a pooling organization where the initial risk is carried by the farmer himself, in order to handle successfully the export trade such organizations find it desirable to make use of the futures market.

5. That a competent speculative element in the market ensures a continuous and searching study of all the conditions of supply and demand affecting market prices.

6. That speculative transactions tend to keep prices as between the contract grades and as between present cash prices and cash prices in the future in proper adjustment to each other and to future conditions of supply and demand.

7. That prices thereby tend to be stabilized and fluctuations reduced.

8. That a speculative element is necessary in an exchange to ensure a continuous market so that when a crop is dumped upon the market in the fall the farmer will not suffer loss by a heavy drop through absence of demand for immediate use.

9. That individuals who engage in speculative transactions without adequate knowledge or capital not only usually lose heavily but also are a disturbing element upon the market. Their transactions become mere gambling.

10. That it does not seem possible to legislate effectively so as to eliminate such individuals without disturbing the general and genuine usefulness of the exchange; but that legislation should be directed towards preventing the incompetent from being lured into speculation.

11. That Parliament should not at present enact restrictive legislation in the expectation of tempering fluctuations on the exchange, or of improving and stabilizing prices, but that time should first be taken to allow the new American law on this subject to demonstrate its efficacy.

12. That the penalties and precautions against rigging the market, or dishonourable trading, seem calculated to make such practices rare and unprofitable.¹

¹ *Report of the Royal Grain Inquiry Commission, 1925, p. 139.*

XIV. CO-OPERATIVE INFLUENCE UPON WHEAT GROWING

Having reached the general inference that efficiencies and economies in marketing to be attained through co-operative association, however desirable in themselves, cannot on our present information be expected to be large enough materially to enlarge the net return of the wheat grower, the other directions of co-operative effort remain to be considered.

A systematic consideration of agricultural co-operation will include, besides co-operation in marketing, co-operation in purchasing (including credit and insurance) and in production. When the three branches of co-operative activity coexist, they naturally overlap to some extent; but co-operation in one direction does not presuppose co-operation in the other directions. Wheat co-operatives exist which confine their objectives to marketing. Others include purchasing co-operation. There has been little co-operation in production (except in threshing), though such co-operation is prominent in other lines of agricultural endeavor than wheat growing.

CO-OPERATION IN PURCHASING

The subject of co-operative purchasing can be dismissed briefly. Such co-operation is directed toward reducing the grower's costs of equipment, supplies, and services, or of certain consumer's goods. Efficient associations exist for the co-operative purchase of implements, fertilizer, seed, binder twine, and other producers' supplies for wheat growing. Also, there are co-operative credit associations, insurance companies, threshing organizations, and labor-supply departments. Sometimes co-operative marketing associations undertake to perform such functions as a side line, not so much to reduce overhead¹ or because the associations are well adapted to this purpose, as to increase their appeal to members. In the matter of finance, co-operative associations now have, with the displacement of character loans by rediscountable farm paper, credit facilities not enjoyed by individual growers.

On the whole, however, the experience of co-operative marketing associations seems to indicate that a growers' association should not combine co-operation in purchasing with co-operation in marketing. The functions are usually quite distinct; the management problems are different. In many instances, co-operative purchasing is related not to wheat growing as such, but to the farmer in his several capacities. Time may prove the contrary, but at present it seems the wiser plan to segregate the administration of the separate functions. For illustration, the supply department and the marketing department of the Fruit Growers' Exchange are separate, with separate membership and accounting. If wheat growers, as consumers rather than as producers, wish to organize co-operative purchasing associations, these ought to be strictly purchasing associations, fashioned after successful types, such as the Rochdale, taking account of regional relations, and they ought not to be merged with marketing associations. Experience seems definitely in favor of the view that one co-operative association can rarely effectively function as a producers' association and a consumers' association.

CO-OPERATION AND WHEAT PRODUCTION

Is it possible, by any methods, for a growers' association to influence the production of wheat in such a way as to enhance the price per bushel and the return per acre? Five methods deserve special consideration: (1) selection of higher commercial types of wheat; (2) increased yield per acre; (3) improvement in quality by processing and grading for uniformity; (4) revision of wheat grades; (5) restriction of outturn.

1. *Selection of higher commercial types of wheat.* A huge number of varieties of wheat are raised in the United States, many of them inferior in milling qualities and nondescript from the standpoint of uniformity. There is great disparity in every wheat-growing state between expert opinion and routine farm practice. Looking back over the past twenty years and contrasting our situation with development of

¹ Country elevators apparently must engage in side lines if costs of handling wheat are to be held down.

wheat growing in Canada, it must be conceded that our authorities in the United States have only partly succeeded in their effort to guide the farmer in the growing of better varieties of wheat. At present not over a third, never over a half, and often as low as a fourth of the wheat crop of the United States is of demonstrated superior milling varieties. The best confirmation of this is a survey of the range of premium prices over the past five years. There is considerable experience along other lines to indicate that growers' co-operatives have more power over crop selection than have government advisers.

The first objective is to secure in each region the production of the best milling wheats for which that region is adapted. This would result in restriction of wheat growing to relatively few varieties. A growers' co-operative would be in position to insist upon the varieties to be produced. The Raisin Growers' Association of California declines to market the raisins of Malaga grapes; growers of cotton in California and Arizona are practically restricted to one variety. The selection of variety of wheat must rest upon the criteria of the miller and the characteristics of the land. If we are to expect substantial achievements by a wheat-growers' co-operative, this will be one of the directions in which improvement will be accomplished.

2. *Increased yield per acre.* Increased yield per acre (by regions) is largely a question of elimination of submarginal lands, securing tested seed of the best varieties, correct rotation, and prevention of avoidable parasitic depredations. As a result of agricultural experiments, stabilized farm practices in wheat growing are far above the level of common practice. Federal and state departments of agriculture and agricultural colleges and experiment stations are devoting much effort and expense to educating farmers in these matters; but they need re-enforcement from the growers themselves. Experiences indicate that co-operative associations have here an inviting field for effective endeavor. A growers' association can do much to bring home to its members the importance of improved practices of cultivation, and to assist them in raising their standards in

these respects. In certain lines, indeed, co-operative action is well-nigh essential. Collective measures against parasites are much more effective than the acts of individuals. A wheat-growers' co-operative would fight barberry just as the citrus co-operative fights scale. It is not merely a question of wisdom in outlining of policy or of collective energy in carrying it through; it is also a question of collective finance. Here, as a result of the shift, under the federal reserve system, from character loans to rediscountable paper, the co-operative association has some advantage over the individual grower in securing credit.

3. *Improvement in quality by processing and grading for uniformity.* The crop of wheat contains at present a large amount of non-wheat, most of it avoidable. The crop contains also more or less deteriorated wheat, kernels that have been injured in ripening, harvesting, or storing. For the most part, the harvesting of wheat is dictated by climatic circumstances; but, to a considerable extent, harvesting is adaptable and for each region wheat ought to be harvested in such a way as best to conserve the milling characteristics. Sprouting and bin-burning are largely avoidable. The presence of frosted, sprouted, and heated grains, even in small amounts, is deleterious to the milling qualities of the lot, since the proteins of the deteriorated grains react abnormally and are able to influence the behavior of flour to a surprising extent. Wheat ought to be cleaned on the farm and the dockage retained there for feed; this cleaning should remove weed seeds, all other grains, and badly deteriorated kernels. The wheat should be given a farm grading on the basis of protein content. Counties should be plotted on the basis of wheat characteristics, and the qualities annually controlled by chemical analysis, milling tests, and baking behavior. This represents for wheat the processing and grading that have been found commercially so important in securing uniformity of produce with other agricultural crops. It seems probable that these improvements can best be carried out through collective action of a growers' association. Some of the state wheat-growers' associations have already made the beginnings of improve-

ment in these directions.¹ Not only ought the grower to secure the premium price to which he is entitled by the intrinsic qualities of his grain, it is necessary to improve the entire crop in the direction of the higher milling standards. Up to the present, the best efforts of authorities have apparently been insufficient to attain the desired reformation in the practices of wheat growers. If a growers' co-operative association is to secure desired enlargement of financial returns to growers, reforms in these directions would need to be included as major policies.

4. *Revision of wheat grades.* A large opportunity for a wheat growers' co-operative association lies in the support of revision of wheat grades. The present federal wheat grades rest upon external characteristics. Weight per bushel, moisture content, soundness, limitation of deteriorated wheat and of non-wheat, are the principal items in the federal grades, important enough in themselves but not adequate for the grading of wheat to meet the criteria of modern milling. The federal grades pay no attention to protein content.² Probably as much as 200 million bushels of wheat are now purchased more or less on the basis of protein content; the purchase of milling wheat by sample now commonly includes a specified figure for protein content.

Quality of gluten is important to the miller as well as quantity of protein. Millers who manufacture blended flours will continue to use baking tests for gluten, no matter what their information on the protein content of the wheats they employ. It lies within the power of co-operatives, however, to a considerable extent to prepare score cards of quality. It is possible to plot the areas in which wheats of denominated varieties will produce crops of protein content within specified ranges, under normal climatic conditions and to some extent predictable under abnormal climatic conditions. Several hard wheat states are

already fairly well plotted. Evidence is accumulating that in growing specified varieties over plotted areas, the quality of the gluten tends to run true. It is quite common to find light-weight wheat with high protein and good gluten. Under these circumstances, it ought to be possible, within reasonable limits, to grade wheats for protein content and gluten quality. This would represent for wheat something comparable to the improvements by grading that have enhanced the quality of so many fruits and vegetables. Such an undertaking would represent positive efforts in the direction of quality, supplementing what may be termed negative efforts—the elimination of frosted, bin-burnt, and other deteriorated kernels. Such grading would mean a general classification for protein content. Only on the basis of advancement in grading can growers expect equitably to profit from the premium milling qualities of wheats that are attainable through selection and improved methods of cultivation.

In theory, one might expect such reform in wheat grading to be attainable through governmental action without collective influence of growers, but in practice it is found that governmental action is usually secondary and that improvement in product and in marketing go together. In our judgment improvement in marketing of wheat would be incidental if not accompanied by improvement in the product. At the same time, it is difficult for us to believe that the primary need of the grower—improvement in product—is directly attainable without co-operative association, which includes also improvement in marketing, in itself secondary and supplemental.

Improvement in wheat culture will not take place unless it is made profitable to the grower. Percival quotes Cobb as saying:

"Farmers do not grow wheat for philanthropic reasons; they grow it to make money, and it will be a long time before they grow it for any other reason. . . . Give the grower a new wheat that will bring him more money for his outlay and he will grow it whether the consumers starve on it or grow fat."³

It is, therefore, an obligation of wheat-growers' co-operatives to make the growing of premium wheats yield premium profits.

¹ In some areas, for example in Roosevelt County in Montana, wheat growers are already making progress in organized planting of registered wheats.

² An early issue of *WHEAT STUDIES* will be devoted to a discussion of this problem.

³ John Percival, *The Wheat Plant*, p. 414.

5. *Restriction of outturn.* The problem of restricting production deserves somewhat fuller discussion. On this subject plain speaking is necessary. For both opponents and proponents, there is no purpose in obscurity. If reforms in growers' practices were achieved, the acreage would be reduced in consequence. But there would be an increased yield per acre, and the net result on the crop outturn would be problematical. Assuming that these offset each other, we would expect to have a crop of relatively unchanged size, but of improved quality, raised on a smaller acreage. Improvement of quality would be reflected from the American miller back to the wheat grower in the form of increased price. It is, however, not certain that improvement in quality of export wheat would be correspondingly reflected back to the grower.

The financial distress of wheat growers in several recent years is traceable not merely to inefficiency and high costs of production, and to heavy burdens of taxes and interest, but to a volume of production in excess of the quantity which could be marketed at a remunerative price. Reduction in acreage has been an essential factor in readjustment, and it is by no means clear that this has proceeded far enough. In any event, as other co-operative associations have found, over-production is a recurring if not a perennial problem. Indeed, there is some tendency for co-operative success to breed failure: raising returns to growers makes for expansion of production, which may in turn offset economies, market expansion, and price advantages resulting directly from co-operative measures.

We are dealing here with the general problem of adjusting production to market requirements, not with the specific position of wheat growing today or with the problem of handling surpluses resulting from bumper crops. Whether or not our current average production is excessive cannot be asserted without some assumptions as to world-wheat production, demand, and prices. It happened that in 1923-24 a mediocre crop in this country was coincident with a bumper world crop, hence wheat prices were generally regarded as unremunerative to growers. In 1924-25 an

excellent crop here coincided with crop failures elsewhere, and American wheat growers secured what were regarded as high returns despite over-rapid marketing. In 1925-26 low yields in America have contributed to a shortage of wheat supplies available for international trade, and have helped to maintain prices in world markets at a level generally regarded as remunerative to growers. What the near future will bring no one can safely predict. Bumper years of low prices are always a possibility. Apparently, however, conditions of demand and supply have so changed that one is justified in assuming that the average level of wheat prices will remain for several years appreciably higher than the abnormally low levels of 1922-24.

A national wheat-growers' co-operative must envisage the possibilities that further restriction of production may be an essential element in a program for profitable wheat growing, that wise measures to adjust acreage in particular years will involve restriction, and that tendencies to expansion of production may call for resistance. Must it be helpless if it faces a persistent tendency to over-production, and bend its efforts merely toward caring for a surplus, or can it expect to influence the volume of production?

There is too prevalent a tendency to take for granted the continued existence of a price-depressing surplus. Growers, deploring the misfortune of agriculture in not being able to control production as does industry, have recently applied their ingenuities to finding some round-about way of exporting the surplus with less loss, instead of devising some direct way of controlling production. Industrial concerns have sometimes found it desirable, for reasons of capacity operation, to manufacture in excess of domestic demand; to sell, say, 95 per cent of the outturn on the domestic market at a high price level, and dispose of the remainder abroad at a lower price level, adopting in effect a double standard of marketing. But this practice does not serve as an analogy to wheat growing, because a larger crop (meaning a larger crop on a larger acreage, not a bumper yield on a smaller acreage) is not raised at lower average production

costs, but rather at higher average production costs. Within limits, reduced industrial production involves higher costs per unit, while reduced agricultural production leads to lower costs per unit.

Involuntary restriction of production may be caused at any time by reduced plantings because of unfavorable seasons, forced abandonment of winter-killed acreage, and crop failure or low yields due to adverse weather conditions. Apart from these, production may be reduced by independent voluntary restriction of acreage by growers, with or without governmental advice, or by concerted efforts practicable only through the effective action of a fairly inclusive growers' co-operative. Independent voluntary restriction is common enough under the stress of unremunerative production, as witness the decline in American wheat acreage from 1919 to 1924 and the cessation of Canadian expansion in the same period. But there is some tendency for distressed growers to attempt to offset lower prices by increased crops, and at best growers are prone to let their neighbors reduce while they at least maintain their acreage when reduction would be advantageous. Thus individualistic action tends to defeat a policy which may be in the general interest. This is true even when, as in the recent experience, official agricultural advice and information has supported a policy of restriction of acreage.

Should a wheat-growers' co-operative endeavor, under such circumstances, to bring about, by persuasion or pressure, a general restriction? Can it hope to succeed in so doing?

Obviously the problem of policy requires discussion only on the assumption that a co-operative can, if permitted, achieve some measure of restriction of production. Certainly such restriction or control is difficult. To what extent a wheat-growers' co-operative could succeed in this direction is determinable only by trial. The limited experiences of other co-operative associations are far from conclusive on this point. Nevertheless there is reason to believe that a well-managed national wheat co-operative might exert a significant influence upon wheat acreage, for restriction or expansion, at least within certain limits.

It is frequently contended, sometimes

in dogmatic language, that within a growers' co-operative association wheat acreage would react in response to wheat price just the same as without it. This does not merely imply that, with rising price, members would desert and become independent outsiders in order to escape co-operative control, or that new independent growers would be called into existence; it affirms that a growers' association is without power to influence the acreage policy of members. It implies that growers within a co-operative organization would react to a price that practically represents a figure arrived at through collective bargaining, precisely as individual farmers would react in response to a price set up by some outside agency. Whosoever believes this must hold sequentially that the principal objective of a wheat-growers' association lies in economies in marketing, with such improvement of the product as may be accomplished incidentally in the handling of the grain, as in the case of the Canadian co-operative elevator companies. In the opinion of the writer, to hold this view is tantamount to disbelief in the feasibility of an effective and really worthwhile growers' organization. Whosoever believes in substantial and far-reaching improvement in wheat growing, as the result of co-operative policy and effort, perforce assumes that to a certain extent the co-operative association has influence over its members to make a restriction of acreage effective. With increase in price beyond a certain point, a policy of restriction of acreage would fail naturally and would indeed not be attempted, because the management would reflect the reaction of the growers. But up to a certain price, probably up to the maximum protection accorded under the present tariff, the writer is convinced that a co-operative association, otherwise effective, would be able to control the acreage of the membership. Group solidarity, as expression of elemental commercial self-government, would find reflection in conformity of members to the policy of the organization. Without organization, some growers would put up their wheat acreage in the hope that others might not; within an organization, each grower would realize that expansion of

acreage would in effect be an act reviewable before the jury of his colleagues. Then also, the reformation of wheat growing in the directions of selection of variety, improvement of quality, and revision of grades (regarded as essential to any successful co-operative association) would in itself result in restriction of acreage. Combined, the influences of precept of collective policy and practice of collective improvements may reasonably be expected to be effective in controlling acreage against stimulation by increase of price up to the level of protection accorded by the present tariff or up to a figure corresponding to the pre-war ratio. Admitting the propriety of collective restriction of acreage, if effective control is psychologically and organically impossible, then hope of effective advancement through co-operative organization is illusory. Co-operative organization must rest on the positive postulate of reasonable contractibility of acreage.

We come then to the question of policy. Are there significant objections, on grounds of public policy, to efforts by co-operative associations to obtain some degree of control over output?

Wheat growers find it difficult to understand why control of production through collective action should not be esteemed reasonable and proper. The present price of wheat is not regarded as a misfortune by consumers and is generally regarded as a good thing for the country. Would the position be any different, ask the growers, if this short crop had been secured through collective action of growers rather than through acts of climate and parasites? As between crop failure and crop restriction, the former is uneven, enriching some and ruining others, resulting in a higher level of return with uneven distribution; the latter means a higher level of return with an even distribution. If it is not good policy to have a large crop with low prices, it can hardly be bad policy to have a short crop with high prices. There is a fundamental difference between restriction of production below the normal level of consumption and restriction of production that is far above domestic consumption. Restriction to produce artificial scarcity for consumers is contrary

to public policy. Restriction to avoid glut of produce can hardly be definable as contrary to public policy.

On this matter there are two misapprehensions. The first is that the domestic food supply might be thereby placed in actual jeopardy; the second is that the price of flour in this country might be "unduly enhanced," in the sense of the Capper-Volstead Act.

The first misapprehension is for the foreseeable future without foundation. We have four wheat regions in the United States, and there are no records in history of wheat failure so general as to jeopardize the bread supply of the country.¹ If a restricted acreage were planted that under normal circumstances would yield an amount of wheat just sufficient to cover the domestic supply and crop failure should supervene, the Canadian crop would still be available for importation duty-paid. All fear of bread famine is for decades fictitious.

The second misapprehension concerns the legal propriety of restriction.² An agreement between producers to restrict output so as to "unduly enhance" prices represents illegal restraint of trade. Nevertheless, without agreement, restriction of production is practiced regularly by industrial producers, in response to price and demand. So long as the tariff on wheat is adjustable, an undue raising of the price of bread in the United States through restriction of acreage by agreement between wheat growers is no more to be feared than an undue elevation of the price of bread as a result of crop failure. The height of the duty on wheat sets a limit alike on wheat monopoly and on the effect of crop failure.³ We have this year a relatively short crop of wheat. As a result the prices of hard spring, hard winter, and red winter wheats are well above world parity for milling grades, and only durum

¹ See *WHEAT STUDIES*, March 1925, I, 133.

² What follows is a technical rather than a legalistic statement of the growers' viewpoint.

³ The effect of the tariff duty on domestic price must not be overestimated. Even in years like the present, when we are on a domestic basis for representative wheats, it appears that domestic wheat prices are not raised to the full extent of the duty, but at most by some 8 to 12 cents less. This is due chiefly to the intrinsic superiority of Canadian marquis wheat for milling purposes.

wheat and lower grades of inferior varieties of other wheats have been exportable at parity prices.

This apprehension is expressed in consumers' circles and in the grain trade, to the effect that organization of an effective national wheat-growers' co-operative association would represent the erection of a monopoly and constitute a precedent. The word monopoly has become a shibboleth. The history of co-operative agricultural organizations furnishes no precedent upon which fear of repressive or exploitive monopoly might reasonably be grounded. It is scarcely to be apprehended that if a national wheat-growers' co-operative controlled 90 per cent of the acreage, it would lend itself to unfair practices against non-members, since the achievements aimed at, both in respect of growers' practices and marketing devices, would act positively on the members and not negatively on the non-members. There is no use in pussy-footing in the discussion. The grower is unable to see how any wheat-growers' co-operative could be expected to achieve what in itself is regarded as desirable for wheat growers without some degree of monopolistic control. The Canadian pool is a quasi-monopoly. The thing to be concerned with is not primarily the name of monopoly, but the wisdom with which the powers inherent in the monopoly are exercised. The writer does not believe, from the nature of wheat growing in the four regions of the United States, that it is possible for any monopoly arising out of a growers' association to display the untoward behavior of monopolistic oppression.¹

The monopolistic power of a national wheat-growers' association would be employed to raise the price of wheat. That is the prime purpose of the organization, and there is no purpose in cavilling at that. It would be the purpose of a co-operative association both to raise the weighted price of wheat and to lower the weighted cost of production and thus to increase the margin of profit. In the nature of the geog-

raphy of the United States, it would be impossible for a co-operative to restrict wheat acreage if the price were *unduly* elevated, since the farmers would shift from less remunerative crops to wheat. It is feasible to foresee a certain elevation of price, particularly with lowering of cost of production, without increase of acreage, especially if the policy of the co-operative association were continuously to stress repression. But beyond the point of a moderate increase in price, a wheat monopoly would find itself defeated by irresistible increase in acreage.

Conceding that it is the purpose of a co-operative association to raise the price of wheat, how would the authorities, in response to eventual protests of consumers, undertake to estimate whether the price increase were reasonable, or unreasonable, moderate or excessive? The Capper-Volstead Act makes it the duty of the Secretary of Agriculture to order a co-operative association to desist if he has reason to believe that "such association monopolizes or restrains trade in interstate or foreign commerce *to such an extent* that the price is *unduly enhanced* by reason thereof."² Under the intent of the law, the Department of Justice might prosecute for "unduly enhancing" the price, irrespective of whether the price was one determined by collective bargaining or by conspiracy in restraint of trade. Presumably the outcome of any dispute between bread consumers and wheat growers would revolve about what "unduly enhancing the price" is determined to be.

We possess various state and municipal commissions for regulating public utility rates with reference to income of public service corporations. The prices of gas, electrical current, water, and transportation are supposed to be fixed at such rates as will yield stated returns on capital valuations appropriately determined. So long as these public utility corporations charge the rates prescribed by the regulatory commissions, the question of control of production is not a subject for determination. The rate being fixed, consumers determine the takings by their own interests at the rate fixed, and the demand and price are equated in the production. Commissions recognize with public utilities that

¹Except hypothetically through abuse by management of concentration of power in future trading. See Section XIII.

²Italics ours.

costs of production are subject to seasonal variations (as in a year of subnormal rainfall), and fix the rate with some consideration for such contingencies. A fair price for wheat similarly would be one determined over a period of years.

How would a consumers' organization proceed to prove that a co-operative association had "unduly enhanced" the price of wheat? The mere fact that output is controlled is in itself no evidence either of unreasonable intent or of prospective injury to consumers. Several methods of adjudging the price are theoretically available. In the first place, one would consider the relation of the price of wheat to the general price level. Taking the five years before the war as base line, assuming that the wholesale price of wheat has the index 150 and the all-commodity wholesale index number is 160, it would be difficult in a particular year to construe a wheat price index of, say, 175 as an undue enhancement of the price of wheat. But if the attained index number of wheat should be 250 compared with the all-commodity wholesale index number of 160, this would unquestionably be construed as an "undue" enhancing of the price. It must be pointed out that consumers' organizations in judging the price of wheat must use the price of wheat itself and not the price of bread, since the price of flour is only one of the several elements entering into the price of bread. And they must use the farm price.

A second method of determining whether a price of wheat were fair would be to determine cost of production. This is the theory of the sliding-scale provision of the tariff, the duty resting on the demonstrated margin between production costs at home and abroad. From this point of view, elevation of the price of wheat secured through co-operative association could hardly be termed illegal in the sense of being "unduly enhanced," unless it could be shown that wheat growers receive undue remunerations. The court would first need to define a statistical farm family, determine a uniform practice for fixing valuations of wheat land and improvements (with something of the eternal discussion over valuing improvements on the basis of original cost or

replacement cost), allow a reasonable writing-off of equipment and reserve for upkeep, set a reasonable wage scale, and fix reasonable interest rates on borrowed money and on invested capital. Since this could not be done for the millions of farmers that raise wheat, it would be necessary to adopt some sort of a bulk line. Finally, it would be necessary to make allowances in good years for the deficits of poor years, since a price that might reasonably be regarded as unduly high in one year might in the following year do little more than cover cost of production.

The cost of production of wheat is very difficult of determination.¹ When one considers the travail entailed in the investigation of the cost of producing wheat in the United States and Canada conducted by the Tariff Commission, one must recognize the impossibility of establishing annually a fair price of wheat, or of subjecting annually to judicial scrutiny a price attained by a wheat-growers' co-operative association.

Of the two methods, that of judging the wheat price by index numbers is relatively easy but takes no account of production costs, that of judging a wheat price by cost of production would be so onerous as to be impossible. It does not seem that a price of wheat controlled through acreage restriction of a wheat-growers' association could reasonably become the object of judicial inquiry except under very extraordinary circumstances. The protection of society would lie not in the courts but in the numerical superiority of consumers, in the control of wheat price by the tariff on wheat, and in the irresistible tendency of farmers, within as well as without a co-operative association, to expand an agriculture that is unduly profitable.

The term "control of the crop" includes control of varieties, control of processing and grading, and also control of outturn. As a matter of fact, these are correlated and there is no use in pretending to believe that improvement of quality and attainment of milling uniformity is practicable or possible without control of quantity. In our judgment one must co-ordinate them or disre-

¹ See WHEAT STUDIES, May 1925, I, pp. 173 ff.

gard them, so far as influence on the price level during the coming decade is concerned. If they are to be utilized, the co-ordination and practical application occur naturally through co-operative association. In this direction lies, in our judgment, the

largest and the most promising field of activity, far exceeding and outweighing in possibilities for farmers the accomplishments that are to be expected through the application of co-operative association to the marketing of the crop as it is.

XV. THE PRESENT STATUS IN THE UNITED STATES

It is not to be inferred that the theory of co-operative marketing is explicit enough, and the precedents in co-operative practice extensive and dependable enough, to make the application of co-operative association to wheat growing merely a matter of administrative detail. There are several difficult questions that must be settled before the co-operative principle can hope to be successfully applied to the four large wheat-growing regions of the United States. Though several of the existing state wheat pools seem to be relatively successful, they are laying little ground-work for the solution of problems of procedure.

1. The first of these pressing questions is the form of membership contract. Recent experiences in successful co-operatives dealing with agricultural specialties suggest that future development will be in the direction of selectivity, just as in industrial mergers. Furthermore, withdrawal of participants is being made easier rather than more difficult, and delivery of the crop the expression of quality of produce rather than of obligation. The Canadian pools have adopted the principles of maximum acreage without selection, under ironclad contracts, with denial of services to nonmembers and with legal enforcement of deliveries by members. The large co-operative elevator companies of Canada have served nonmembers at a toll, on the theory that it was good business to obtain lower costs of operation for members through increasing volume of operation by inclusion of nonmember grain. Under the Capper-Volstead Act a co-operative is placed under obligation to do more business for members than for nonmembers. The ironclad contract, extending over a large region and covering members of widely varying temperamental, intellectual, and financial char-

acteristics, may lead to socially undesirable reactions, such as bootlegging of produce, night-raiding, court injunctions, and legal penalties. Agreements of membership ought to be maintained by the spirit of co-operation rather than by the law of contract. When co-operative associations are in advance of the co-operative consciousness of their members, the result is likely to be internecine conflict and nullification. The essential stability proceeds from the spirit of the undertaking. Nevertheless permanency is essential, since the association must look forward to long-time operations. At first, co-operatives need control over acreage in order to control marketing, but later they may find it necessary to select membership in order to control production. Probably the future trend of co-operation will be to become selective, to exclude ineffective farmers, submarginal land, and undesirable produce. This evolution is not in early prospect in the case of wheat. Fortunately for the United States, the Canadian pools with rigid organization are accumulating experiences that we can later employ in judging of the most desirable procedure.

2. There is sound social and economic reasoning in the view that the transactions of co-operative associations should be subjected to regular published audit by certified accountants. This is highly desirable for members and for the general public, if the sympathy of consumer classes is to be maintained. When co-operative agricultural associations obtain from the Congress exemption from anti-trust laws, publicity is expected as a guarantee that prices shall not be unduly advanced to consumers. Quite commonly, however, such audit of the accounts of co-operative associations is resisted on the ground that these are private

business affairs and, not being required of competing independents, would impose a business hardship on co-operative associations. The point is of more importance in respect of a co-operative association dealing with a staple foodstuff like wheat, than in the case of a specialty like almonds.

3. It is difficult from the agricultural point of view to apply the co-operative principle to diversified farming. For many farmers, wheat is one of three or four cash crops. Experience has demonstrated the unwisdom of continuous wheat growing, and numerous governmental and educational undertakings have been developed to induce wheat growers in the one-crop belt to diversify their operations. Now it is precisely in one-crop farming that co-operative association has been most applicable. The best experiences and precedents in co-operative marketing in this country have been obtained on farms devoted largely, if not exclusively, to one cash crop. Is a western farmer simultaneously to be a member of a wheat-growers' co-operative, a sugar-beet co-operative, and a wool co-operative? It is obviously going to be more difficult to apply co-operative methods to mixed agriculture, and the difficulties must be appreciated in advance in order that they may not be disclosed through disaster.

4. A national wheat-growers' co-operative association would face a fundamental problem of finance. Regarding middlemen in wheat as a unit, outside of the fixed investment in country and terminal elevators and warehouses, the invested capital is relatively small compared with the volume of borrowed capital. The wheat crop is moved largely on bank credit. The hedging of the wheat is the most important single factor in the collateral of this bank credit, since banks are strongly averse to lending money on unhedged wheat. If a co-operative should eschew hedging, a different basis for bank credit would have to be organized. This might be done by increasing the capital investment, which would mean having growers contribute capital, a procedure not likely to be followed. It might involve an indirect increase in the working capital of the co-operative secured through a low advance payment to growers.

Also, bank credit could be more easily secured on unhedged wheat if the margin between autumnal market price and advance payment to growers were made wide. Lastly, it might be possible to secure credit through some amplification of rediscounting facilities under the Federal Reserve system. If one believes that a more even marketing of wheat might result in a wider margin of profit, one must at the same time bear in mind that the capital requirements and the corresponding interest charges would also be somewhat increased. To one familiar with the financial transactions of the existing successful co-operatives, the problem of financing a national wheat-growers' co-operative looms rather large.

5. Another problem of particular difficulty in the organization of a national wheat-growers' co-operative is the problem of decentralization. Just how far to centralize and where to decentralize is always a matter for fine judgment in a co-operative association. In the prairie provinces of Canada the crop is homogeneous. In our four widely heterogeneous wheat regions, to a considerable extent the varieties are different, the types of agriculture are different, and the wheats are competitive on the market. There is something resembling or at least comparable to this situation in Australia, and the wheat pools of the several Australian states have had to face difficulties in consequence.

6. The co-operative marketing of wheat may be conceived either as a half-way or a full-way operation. By a half-way operation is meant the taking over of country elevators without attempting to take over the terminals. The co-operative association would then continue to use the grain exchanges and sell to city merchants, mills, and exporters as country elevators now do. The full-way co-operative organization implies the acquisition of the terminal facilities, the elimination of the terminal middlemen, and the sale of wheat only to mills, exporters, and foreign buyers. Nothing is gained in beclouding the fact that full horizontal integration necessarily means a change in business practices with elimination of middlemen and plants.

Co-operative experience offers precedents

for both types. The California Fruit Growers' Exchange may be termed a half-way co-operative association because it sells to wholesalers and does not do wholesale merchandising to retailers. This also holds true of the Walnut Growers' Association and the Raisin Growers' Association. These associations believe it to be the best policy, for the present at least, to utilize the existing machinery of wholesale distribution. Livestock associations, on the other hand, endeavor to be full-way co-operative associations, selling to packers. This also is the hope of the cotton-growers' co-operative.

The half-way co-operative marketing of the co-operative elevator companies of Canada has failed to yield expected economies. This has prompted the organization of the provincial pools that propose to act as full-way co-operative associations. The Canadian Co-operative Wheat Producers, Limited, is a full-way co-operative association, that contemplates selling only to North American mills, and to European mills and merchants. The Canadian pools are making the first real test of co-operative marketing of wheat. Their experiences will be precedents for the United States.

XVI. SUMMARY

Such conclusions as may be drawn from the foregoing consideration of the co-operative association of wheat growers are tentative rather than definite and, indeed, might more properly be termed inferences. This is due to the limitations of the available data. The relevant data enjoin negative qualification more often than they warrant affirmative declaration. Such tentative conclusions as are reasonably permissible are more in the nature of statements of position, precedents, and objectives than of experience and accomplishment.

With respect to the co-operative marketing of the wheat crop of the present size, varieties, and qualities, it does not seem that our information warrants more than modest hope of commercial gains to growers. We are not informed as to the net profits of middlemen dealing in wheat. To obtain a basis for adjudging the motive for co-operative marketing, and to have a figure to illustrate the position, we may take the net profits of country middlemen to be 2 cents a bushel and of terminal middlemen 1 cent a bushel, depreciation and interest on capital and credit considered as costs. Two cents a bushel may similarly be held to cover the costs and profits of speculation, hedging, and exporting. We thus have a figure of 5 cents a bushel that, for purposes of discussion strictly, growers might expect to accrue to a national wheat co-operative association operating the present plant of elevators and warehouses, with manage-

ment equal in ability and efficiency to the commercial grain trade of today. A discerning critic would probably regard the figure of 5 cents as too high rather than too low. But even a figure of 6 or 7 cents would make no difference to the argument.

Following a thoroughgoing and far-reaching reorganization of the existing national plant of country and terminal elevators, after the fashion of an industrial merger, with elimination of obsolete and redundant units, taking full account of varying geographic relations of transportation and costs of storage, and including operations in coarse grains and in sidelines, a co-operative association might hope to lower somewhat the weighted per-bushel cost of distributing wheat from grower to converter and exporter. But such a reorganization would need to proceed practically without precedents and would represent an undertaking exceeding in magnitude and intricacy anything previously accomplished in industrial mergers. Under these circumstances, one should harbor no early expectation of economies in this direction.

If an added return of 5 cents a bushel were to be secured, we infer that it would not generally be regarded by wheat growers as satisfactory. If one may be guided by the experiences of the Canadian and Australian pools, one must regard it as doubtful whether a national wheat-growers' co-operative could be organized in the

United States if growers understood definitely that such a gain in net wheat price was the sole objective to be sought and the maximum achievement to be expected.

Broadly considered, such an achievement in distribution, if attainable, ought to be regarded by growers as incidental. For while marketing profits have usually appealed to growers as the strongest initial motive for establishment of co-operative associations, if our interpretation of the business of wheat growing is correct, these would be the least important of the benefits which successful national co-operation would aim to confer on wheat growers.

It is gradually coming to be believed that the most promising and effective field of activities of a national wheat-growers' co-operative association lies on the growers' side of the country elevator rather than along the path of distribution beginning with the country elevator. Reformation of farm management, lowering of operative costs, control of variety, improvement of quality, establishment of uniformity with grades based on milling standards, elimination of submarginal lands and farmers, and restriction of outturn to the average statistical level of domestic requirements are the objectives which, if achieved, may be expected to result in increment of returns far greater than are to be anticipated directly through co-operative marketing. We have at present an individualized and overextended wheat growing. The commercial interests of wheat growers would be enhanced by a contracted wheat-growing and co-operative study and direction of the industry. Convinced that wheat growers need direction in production more than in marketing, we make the inference that these will be achieved only if conjoined.

Looking forward, it seems to us that the reaction of the discerning observer toward the probability of national co-operation of wheat growers depends on the views he entertains on three points: the effectiveness of such a co-operative in improving the efficiency of wheat growing; the solidarity of co-operative allegiance; and the future

price level of wheat. We have little doubt of the ability of a co-operative to bring about the adoption of the best varieties and improved methods of handling, provided an adequate commercial incentive supports the movement. We have little doubt that co-operative solidarity could be achieved, under proper leadership, provided these improvements are attained; but we doubt whether it could be achieved without them. In short, we incline to the view that these two are conjoined.

With respect to the third point, opinion must rest largely on international grounds and is not easily formulated. During the past five crop years, including the present, our annual net export of wheat has averaged something like 170 million bushels. If one believes that the probable trend in level of wheat price in the world offers a reasonable prospect that such export can be continued at the average farm price of the crops of 1924 and 1925, one will probably infer that this reduces greatly the hope of contemporaneous national co-operative organization of wheat growers. No one is in position to state the average farm price received for the crops of 1924 and 1925, nor the use made by growers of the net returns. But it seems likely that if farmers could look forward to a continuation of the price of the present season and last season, so large a proportion of growers would be inclined, chiefly through inertia, to let well enough alone as to make the organization of a national co-operative association appear for the time being impracticable. The establishment of a national co-operative association implies for wheat growers a far-reaching change in policy and affairs. To make this change, most growers must feel, in addition to the positive motive of larger and less fluctuating returns and a stabilized, technically more efficient operation, also a dissatisfaction with current returns and distrust of the prospective price level. Therefore, it seems to us clear that the hope the student of the problem entertains for the early establishment of a co-operative association of wheat growers must depend directly on his views as to the trend of wheat prices in the world.

This number is substantially the work of Alonzo E. Taylor

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