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# THE WORLD WHEAT SITUATION

1924-25

A REVIEW OF THE CROP YEAR

## WHEAT STUDIES

OF THE

*Stanford University.* FOOD RESEARCH INSTITUTE

Volume II

Number 1

STANFORD UNIVERSITY, CALIFORNIA

November, 1925

# THE FOOD RESEARCH INSTITUTE

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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 shown in the list of studies in Volume I. (See fourth cover page of this issue.) Future issues will include the following:

*Significant Developments in Wheat Grading*  
*Problems in the Co-operative Marketing of Wheat*  
*Argentina as a Producer and Exporter of Wheat*

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# W H E A T S T U D I E S

## OF THE FOOD RESEARCH INSTITUTE

Vol. II, No. 1

STANFORD UNIVERSITY, CALIFORNIA

NOVEMBER 1925

### THE WORLD WHEAT SITUATION, 1924-25

#### A REVIEW OF THE CROP YEAR

#### FOREWORD

The purpose of this review is to summarize and interpret the more important phases of the world wheat situation in the crop year 1924-25. Many of these have been discussed in our previous surveys of developments during the year (WHEAT STUDIES, January, April, September, 1925); but with information available covering the whole crop year, it is possible to present the subject more comprehensively and more accurately.

At numerous points comparison must be made with the preceding crop year, which was reviewed in the first issue of WHEAT STUDIES, in December 1924. The cursory reader, however, is only too readily content with a two-year comparison. A broader perspective is essential for a clear understanding of any one year. Accordingly, in this review frequent use is made of comparisons with other earlier years or with pre-war and post-war averages.

Such a review is of more than historical interest. It furnishes a basis and a point of departure for consideration of developments in the crop year 1925-26. It illustrates many fundamentals in the current situation, and brings out distinctions between transient and enduring conditions. Among

other things, it indicates how far astray even the closest observers in the grain trade and milling industry can go in interpreting information and in forecasting movements, stocks, and prices. The developments in the past year point emphatically to the importance of a sounder and more general understanding of the wheat situation among

farmers, grain dealers, bankers, millers, bakers, and grain speculators.

The first section comprises an informal summary of the major points which are subsequently considered at greater length. In the sections on the supply position, the volume and course of international trade, the changing position of wheat stocks, and the price

movement, many well-known facts are incorporated for the sake of completeness. The discussion of the volume of marketing, co-operative marketing, import and export restrictions, and consumption, and the concluding observations, as well as much in the other sections, have not been covered in our previous surveys or our special studies. The Appendix Tables contain a fairly comprehensive set of detailed data which support the text statements and serve as a convenient collection for reference or further study.

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## I. CONSPICUOUS FEATURES OF THE YEAR

The outstanding feature of the wheat situation in the crop year 1924-25 was the recovery of prices from the abnormally low level of 1923-24. From the low point of that year to the high point of 1924-25, prices rose by about a dollar a bushel in practically all markets. The level characteristic of 1924-25 was at least 50 per cent higher than the characteristic level of 1923-24. The purchasing power of wheat over commodities in general, which in 1923-24 had averaged around 70 per cent of its pre-war level, rose in 1924-25, in most countries, to about the pre-war average. No increase of comparable size has occurred for many years, except first, after the outbreak of the European war, and again two years later, when a bumper world crop in 1915 was followed by a world shortage in 1916, intensified by war-time restrictions upon international trade.

Fluctuations in prices were also a conspicuous feature of the crop year. The shift in conditions of supply was so radical that no secure basis existed for estimating the influence of price upon demand, whether for consumption or for import. The uncertainties of the situation and the upward trend of prices furnished an unusual stimulus to speculation, which was further favored by the ease in the money markets in North America. But because of the promise of an extreme rise, many outsiders were led to speculate without adequate information, and such unintelligent gambling always tends to exaggerate price swings. After the severe break in prices, the favorable spring prospects for 1925 crops in Europe and in Canada probably prevented another large advance; but with small stocks of old wheat on hand, uncertainties and changes in the outlook kept prices unstable.

Moreover, the supply position of the different wheats was so unusual that price differences between types and grades were especially large. The United States had an excellent crop, in the aggregate, but soft winter wheats were deficient in supply. Canada had a spring-wheat crop 200 million bushels smaller than in 1923, and inadequate to sup-

ply insistent demands for Canadian wheat. Durum wheat supplies were especially short, and were largely confined to the United States. On the other hand, Australian wheat was available after January 1925 in unusually large quantities.

The pronounced rise in prices was primarily due to the great reduction in crops from 1923 to 1924. In 1923-24 the world wheat production was by far the largest since the war, and slightly in excess of even the bumper crop of 1915, if one excludes Soviet Russia. In 1924-25 the world wheat crop was roughly 350 to 400 million bushels less—of about the same size as the crops of 1921 and 1922, but of lower average quality. Among leading producers Australia alone had a bumper crop, though the United States, India, Argentina, and France harvested large crops. Most European countries had very disappointing harvests, and Russia became an importer instead of an exporter of bread grains. World supplies of rye were relatively even more seriously reduced. The shortage in bread grains was intensified by the poor corn crop in the United States, though somewhat mitigated by good maize crops in Europe and a large export surplus in Argentina. Good crops of potatoes and oil seeds in several European countries afforded the principal source of relief.

As a result of the European shortage, European wheat imports reached record proportions. The import demand was strengthened, especially by comparison with the previous three years, by improved financial prospects and larger foreign credits as a result of the adoption of the Dawes Agreement in August 1924. But in the face of high prices, economies in consumption were made, both on private initiative and as a result of governmental regulation of milling and baking. Imports were only 40 million bushels larger than in 1923-24, when low prices stimulated consumption to the highest point reached since the war. Wheat and flour imports by countries outside of Europe, which had attained huge proportions in 1923-24, fell below average as a re-

sult of large initial carryovers and the price increases. As a whole, international trade in wheat and flour did not reach the record proportions of 1923-24, both because corresponding supplies were not available and because, at the high level of prices and with a better outlook for 1925-26, they were not called for.

The rise in prices in the summer and autumn of 1924, following a prolonged period of agricultural depression, called forth a huge volume of marketing in the United States and Canada. The autumnal movement in North America was extraordinarily large. International shipments were exceedingly heavy in September-November 1924. As these shipments arrived in Europe and as European domestic crops came to market, there was a temporary crisis in certain European importing markets. This disappeared in December, and the shortage in Europe caused heavy purchases in Argentina and Australia for early delivery. These shipments swelled the February and March totals to high figures. From April onward, however, importers' demands fell off sharply, and export shipments declined through July. The usual spring peak of shipments was absent, partly because of heavy early exports from both the Northern and Southern Hemispheres, partly because new crop prospects in Europe were so favorable that, with the operation of economies in consumption, it appeared safe to draw heavily upon stocks.

In the principal exporting countries human consumption of wheat was not materially reduced, but, in North America at least, less wheat than usual, and much less than in 1923-24, was fed to animals or wasted. In Europe, even if one allows for large reduction in carryovers, human consumption of wheat and rye appears to have been reduced, not merely below the ample quantities of 1923-24, but to a degree that may be regarded as below normal. Animal consumption was also probably reduced, but

large economies of this sort were restricted because much of the European crop was unmillable or of poor milling quality. In several countries regulations prescribed high milling extraction, admixture of other elements in flour, or both; other regulations decreased the amount of flour milling and bread production; and at high prices less bread, made of much poorer flour, was consumed. Outside of Europe, especially in the Orient, there was a heavy decline in apparent consumption.

Because of adjustments in reported and unreported stocks, the decline in actual consumption was generally less than would appear from statistics of crops and trade. The crop year 1924-25 opened with unusually large carryovers of old wheat, especially in North America. Stocks were generally above normal in consequence of the large crops of 1923, the low level of prices, and the prospects of poor crops in 1924. Under the influence of exactly opposite conditions, carryovers out of 1924-25 were generally reduced to less than normal dimensions. An appreciable fraction of the year's consumption came from stocks of old wheat. Visible supplies of wheat remained at high levels, seasons considered, through most of the crop year, primarily as a result of heavy early marketing, in February-April because much Australian wheat was afloat for several weeks, and later because of relaxed importers' demands.

In the past crop year the prolonged depression among wheat farmers, which had been especially acute in North America, was brought to a close. A period of more normal agriculture, in Europe as well as elsewhere, has apparently begun. The recovery of wheat prices from the abnormally low level of 1923-24 was broadly beneficial. On the other hand, Europe paid dearly for her crop shortage, and the heavy expense for cereal imports made a serious drain upon the limited financial resources of many countries.

## II. THE SUPPLY POSITION

The year 1924-25 was characterized by a distinct shortage in Northern Hemisphere

crops of wheat and rye, somewhat mitigated by large initial carryovers, and relieved in

the closing months by good crops in Argentina and Australia and by excellent prospects for new crops in Europe, Canada, and even Russia.

#### INITIAL CARRYOVERS

The position of stocks is discussed in some detail in Section VI below. Here a résumé of the evidence concerning inward carryovers<sup>1</sup> is essential for a correct view of the year's supplies.

For the United States, the Department of Agriculture's estimate of wheat stocks on July 1, 1924, is 106 million bushels, as compared with a pre-war average of 89 million, a 1919-23 average of 87 million, and a maximum, on July 1, 1920, of 110 million. Stocks on farms were estimated somewhat below average; but stocks in country mills and elevators were large, and commercial visible supplies were exceptionally heavy. Canadian wheat stocks on August 1, 1924, despite record millings and shipments from the huge 1923 crop, are officially estimated at over 41 million bushels, probably a record also. (See Appendix Table XXI.)

Visible supplies generally were exceptionally large. According to the joint compilation of Broomhall's *Corn Trade News* and two American journals, visible supplies of wheat and flour in North America, Argentina, Great Britain, and afloat on August 1, 1924, were 162 million bushels. This was 42 million bushels above the pre-war average, and considerably above any previous post-war figure for August 1. The reported Australian visible supply was 30 million bushels, also a large item—probably in excess of the truth. (See Appendix Table XXII.)

On the continent of Europe stocks are not reported, and concerning them little can be stated with confidence. The crops of 1923 had been large, and imports were exceptionally heavy, especially in the closing months of 1923-24. Consumption also had been large, and there is some evidence, in France, for example, of depleted stocks of domestic grain. But prospects of late and short crops in 1924 induced advance provision of im-

ported grain, available at low prices, and in Germany the emergency government reserve was not exhausted. Broomhall's correspondent has estimated Italian stocks on July 1, 1924, as 22 million bushels higher than the year before.<sup>2</sup> Financial considerations, however, operated to restrict imports and stocks in several countries. On the whole, it is safe to say that Continental carryovers of old-crop grain were at least of fair size, and probably somewhat above average.

Outside of Europe, in consequence of good crops in British India and heavy ex-European imports in 1923-24, carryovers were undoubtedly high.

Taking the world as a whole, the carry-over into 1924-25 was far above average, and probably larger than was currently supposed, though the increase represented but a moderate fraction of the huge crops of the preceding year.

#### NORTHERN HEMISPHERE WHEAT CROPS

The 1924 wheat crops of the Northern Hemisphere, on the other hand, were distinctly short. Excluding Russia, they are now reported as 2,682 million bushels, the smallest since 1920, about 380 million bushels smaller than the corresponding crops of 1923. (See Appendix Table I, and Table 1, p. 6.) In Europe the shortage was general. France, the Baltic States, and Jugoslavia alone had fair crops. In the aggregate the European wheat crop was over 200 million bushels below the 1923 crop, and about 50 million bushels below the 1920-24 average. The important rye crop was even shorter, relatively, than the wheat crop. The Russian wheat crop was perhaps larger than in 1923, but a substantial decrease in the rye crop caused a shortage in total bread-grain supplies. North African wheat crops, notably in Algeria and Tunis, were small and poor. The Canadian crop was probably underestimated at 262 million bushels. The Northwest Grain Dealers' Association, in its final summary of the crop year 1924-25, issued October 5, 1925, estimated the total for the prairie provinces at 252.5 million bushels as compared with the existing official estimate of 235.7. This would point to a total

<sup>1</sup> See WHEAT STUDIES, DECEMBER 1924, I, 38 ff., and also below, pp. 29 ff.

<sup>2</sup> *Corn Trade News*, February 17, 1925.

Canadian crop of about 279 million bushels. This larger figure is more consistent with the data of trade and consumption. In any event, the crop was distinctly subnormal, and some 200 million bushels below the large crop of 1923. The quality of European and Canadian crops was also below average, though Canadian wheat fortunately proved of high protein-content. British India, indeed, harvested a good crop, and its importance was the greater because it followed a good crop in 1923. But the United States presented the most important exception to the general shortage in the Northern Hemisphere, by harvesting from a greatly reduced acreage the largest crop since 1919—873 million bushels of high-quality wheat.

Weather conditions were primarily responsible for the small crops of 1924, as for the large crops of 1923. The harvested acreage was between 2 and 3 per cent smaller than in 1923. The principal reductions in acreage occurred in the United States, Canada, and Greece; the principal increase in Roumania. Outside of North America, where there was a reduction of about  $6\frac{1}{2}$  million acres, acreage increases in some countries roughly offset decreases in others. (See Appendix Table II.) But the world yield per acre was substantially lower than in 1923, and below the 1920–24 average as well. (See Appendix Table III.) Subnormal yields were the rule, and there were no notable exceptions outside of the United States; here conditions unexpectedly improved just before and during harvest, so that the final estimate of production was 180 million bushels larger than the forecast of June 1. (See Appendix Tables VI, VII.)

#### OTHER NORTHERN HEMISPHERE CROPS

The wheat shortage was intensified by the shortage of rye and corn. The rye position was exceptionally tight. The American crop of 63 million bushels was about as large as that of 1923, but in no sense a large crop. Russia, Germany, Poland, the largest producers, had short crops. Only in France, Holland, Italy, Austria, Soviet Russia, and Finland was the rye production above the 1920–24 average, and even in these countries (except Finland) it was well below pre-war

averages. The Russian rye crop was 76 million bushels below that of 1923; the crops of the rest of Europe were about 180 million bushels below those of 1923.

The corn crop of the United States, ordinarily the leading exporter, was by far the smallest since the war. Fortunately, the maize crops of Italy and the lower Danube basin were the best since the armistice; and in this area, where maize is much used for human food, this crop partially relieved the shortage in wheat. But the domestic requirements of these countries and the tight international position of corn prevented any considerable substitution of corn for bread grains in the rest of Europe.

Crops of barley and oats were generally of fair size or better, and this fact tended to reduce the pressure upon bread grains for feed uses. The United States crop of oats was exceptionally large and afforded a substantial export surplus. The countries of the lower Danube basin (except Jugo-Slavia) had poor crops of both barley and oats. Barley crops were large in Germany and Scandinavia, but generally not far from average. Crops of oats were poor in Spain and Poland, but of average size or above in most other countries.

European potato crops varied greatly from country to country. In France, Hungary, and the Baltic States there was an excellent yield, in excess even of the pre-war average. The German crop was also large. In Great Britain, Scandinavian countries, and Spain the potato crop was exceptionally poor. Elsewhere in Europe the crop ranged from below average in Holland and Belgium to above average in Poland. Broadly speaking, potato supplies were ample to afford considerable substitution for bread grains in countries where such substitution is customary. Outside of the Danube basin potatoes afforded the only important relief for the shortage in wheat and rye.

#### SOUTHERN HEMISPHERE CROPS

In South America, where bumper crops had been harvested early in 1924, unfavorable weather conditions led to heavy abandonment of winter-wheat acreage sowed for



the 1924-25 crop. In Argentina, for example, of about 18 million acres sown, only 16 million acres were harvested. Yields per acre harvested were somewhat below average. Consequently the production, while up to the high average of 1919-20 to 1924-25, was considerably below the high-water mark of the preceding year. The Argentine crop, which in mid-November was officially forecast at 190 million bushels, was finally estimated at 191.1. (See Appendix Table I.) The

1917-18 was this figure closely approached.

The Argentine corn crop harvested in the spring of 1924—277 million bushels—was exceptionally large and permitted large exports, though the 1925 crop, now estimated at 186 millions, was distinctly small.

#### WORLD WHEAT CROPS SUMMARIZED

Table 1, summarizing a mass of detailed crop figures given in part in Appendix Table

TABLE 1.—WHEAT PRODUCTION IN PRINCIPAL WHEAT-PRODUCING AREAS, PRE-WAR AND POST-WAR\*  
(Million bushels)

Year	World ex-Russia	Russia	Northern Hemisphere ex-Russia	Southern Hemisphere	United States	Canada	British India	North Africa	Europe ex-Russia	Japanese Empire	Australia	Argentina
1919.....	2,794 <sup>a</sup>	... <sup>b</sup>	2,493 <sup>a</sup>	301	968	193	280	75	919 <sup>a</sup>	41	46	217
1920.....	2,893	318 <sup>c</sup>	2,543	350	833	263	378	63	947	41	146	156
1921.....	3,109	205 <sup>c</sup>	2,733	376	815	301	250	99	1,216	40	129	191
1922.....	3,158	242 <sup>c</sup>	2,804	354	868	400	367	70	1,043	40	109	196
1923.....	3,491	330 <sup>c</sup>	3,064	427	797	474	373	107	1,261	35	126	248
1924.....	3,087	382 <sup>c</sup>	2,682	405	873	262	361	80	1,055	36	164	191
Average												
1909-13.....	3,005	759	2,725	280	690	197	352	92	1,348	32	90	147
1920-24.....	3,148	296 <sup>c</sup>	2,765	382	837	340	346	84	1,104	38	135	196

\* Excluding China, Turkey in Europe, Brazil, and a number of small producers. Data of U.S. Department of Agriculture, except for Russian data 1920-23 and a few supplemental estimates.

<sup>a</sup> Partially estimated.

<sup>b</sup> Data not available.

<sup>c</sup> Including Siberia and Kirghisia, but not complete for Asiatic Russia.

Chilean crop, finally estimated at 24.9 million bushels, was also fairly good, though 2.6 million bushels less than the excellent crop of 1923-24. Uruguay, frequently a small exporter, had a crop of poor quality but above average in quantity, though 2 million bushels less than in 1923-24.

In Australia, on the other hand, an acreage even above the record total of 1923-24 was planted, and conditions were consistently favorable. The first official crop estimate, published in January 1925, was 162 million bushels. For some months the trade believed this excessive, even questioned the authenticity of the figure, and accepted a figure of around 150 million bushels. But the final estimate was 164 million bushels, indicating the best crop since 1915-16, when 179 million bushels were produced.

The combined production of Argentina and Australia, 355 million bushels, was about 18 million bushels less than in the preceding year, but larger than in any other year. Indeed only in 1915-16 and in

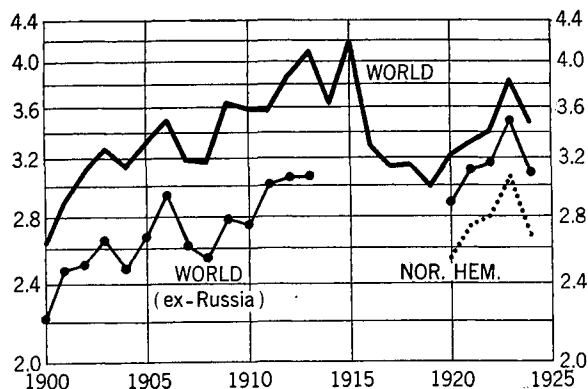
I, shows the 1924 wheat crops in comparison with those of previous years as well as with pre-war and post-war averages. The world wheat crop of 1924 was some 350 million bushels below the 1923 crop, a reduction of about 9 per cent. It was about the same as the 1920-24 average, but nearly 300 million bushels below the 1909-13 average.

The Russian wheat crop was reported the largest since the war, somewhat above that of 1923, but only about half the pre-war average for the same territory. The rest of the Northern Hemisphere harvested the smallest crop since 1920, some 380 million bushels less than in 1923, and somewhat less than the pre-war average in spite of the expansion of acreage in North America. The Southern Hemisphere, however, harvested a crop within 25 million bushels of the record output in 1923-24, and some 125 million bushels more than the pre-war average.

The striking contrast with the bumper crops of 1923 tends to exaggerate the shortage in the 1924 wheat crops. Excluding Rus-

sia, the world wheat crop of 1924 was over 80 million bushels above the pre-war average, and only 60 million bushels below the 1920-24 average. Including Russia, the world wheat crop of 1924 was the largest since the war except for the unusual yield

CHART 1.—WORLD WHEAT PRODUCTION, 1900-24\*  
(Billion bushels; logarithmic vertical scale)



\* Estimates of U.S. Department of Agriculture. See especially *Agriculture Yearbook, 1924*, p. 569; *Foreign Crops and Markets*; and unpublished data. Russian official figures used for years 1920-24.

of 1923. Nevertheless, as Chart 1 clearly shows, the 1924 crops mark a notable interruption in the upward trend of wheat production that has characterized the post-war period. Deficiencies in quality intensified the shortage in quantity.

### MARGIN BETWEEN SUPPLIES AND REQUIREMENTS

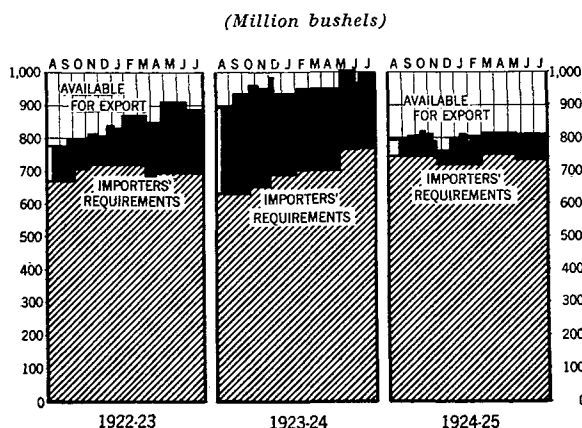
Despite the short crops in Canada, North Africa, and the Danube basin, wheat supplies in 1924-25 were relatively abundant in exporting countries and notably deficient in importing countries. Wheat crops of European importing countries were nearly 150 million bushels less than in 1923, and rye crops of the same countries were reduced by over 160 million bushels. On the other hand, all of the great exporters except Canada had large export surpluses, larger ones than in 1923 except in the case of Argentina.

The distribution of world crops is of fundamental importance. Indeed, the margin between exportable surpluses and importers' requirements has a larger trade signifi-

cance than changes in the size of world crops as a whole. The central fact in the world wheat situation in 1924-25 was the narrow margin between supplies available for export in surplus-producing countries, on the one hand, and the urgent needs of importing countries on the other. On this fact all observers agree, though different experts would express it in different ways.

Chart 2 will serve to illustrate the point. Here Broomhall's successive estimates of quantities "available for export" and "importers' requirements" are plotted against each other, and the heavily shaded area shows his estimate of the margin between them. (See also Appendix Table X.) Throughout 1922-23, it will be noted, the margin was wide. In 1923-24 it was substantially wider still, consistently over 200

CHART 2.—BROOMHALL'S SUCCESSIVE ESTIMATES OF EXPORTABLE SURPLUSES AND IMPORTERS' REQUIREMENTS, 1922-23 TO 1924-25\*  
(Million bushels)



\* Compiled from *Corn Trade News*.

million bushels, and for two months around 300 millions. In 1924-25, on the other hand, the margin was narrow throughout, never as high as 100 million bushels, and for several weeks as low as 40 million bushels.<sup>1</sup> The narrowness of this margin accounts for many of the distinctive features of the crop year 1924-25, and the sharp contrast with 1923-24 is obviously associated with the striking upward movement of prices.

<sup>1</sup> It is of interest to observe that Broomhall's first estimates for 1925-26, as of August 4, 1925, showed a margin of 150 million bushels. This estimate was raised to 160 million on October 20.

## III. THE MARKETING OF 1924-25 WHEAT CROPS

The past crop year was noteworthy for the large proportion of wheat shipped to market in North America, for early marketing in several exporting countries, and for important developments in co-operative marketing in the United States and Canada.

## PROPORTION OF CROP MARKETED

In both the United States and Canada the volume of wheat marketed was exceptionally large in proportion to the estimated crop. This is shown by the following percentages of receipts at primary markets to the respective crops as officially estimated:

Crop year	United States	Prairie provinces
1920-21.....	45.2	61.6
1921-22.....	50.2	70.3
1922-23.....	49.8	70.2
1923-24.....	43.4	77.3
1924-25.....	58.1	77.4 <sup>a</sup>

<sup>a</sup> On the basis of the Northwest Grain Dealers' Association estimate cited above, this percentage would be 72.3.

The Canadian figure, representing the ratio of receipts at Vancouver and Fort William and Port Arthur to the crop of the prairie provinces, while about the same as in 1923-24, is exceedingly large in view of the fact that the seed requirements formed a much larger proportion of the 1924 than of the 1923 crop. If these requirements were deducted from the crop in both cases, the percentage would be 92.7 for 1924-25, as against 84.5 for 1923-24.

It is evident that if the 1924 crops were correctly estimated, an extraordinary proportion of these crops moved into trade channels. These crops may have been underestimated—we believe the Canadian official estimate certainly too low—but the contrast would remain even if some upward adjustment is made in crop figures. There is no evidence that there was an unusual degree of duplication in American figures of receipts, and Canadian figures involve no duplications. The carryover on farms, according to official estimates, was reduced but slightly in the United States, and by at most about 4 million bushels in Canada. The major explanation lies in the facts that there was little unmillable grain in this

country, and that in both countries the high prices caused restriction of feed uses and led to heavy shipments to market.

In Europe, on the other hand, perhaps less than the usual proportion of domestic wheat crops was shipped to primary markets. In Spain, Roumania, and probably elsewhere, price restrictions and milling regulations led peasants to withhold wheat from market. In several countries the volume of unmillable grain was relatively high. But high prices must have attracted even low-grade wheat to market and stimulated the use of more in local custom mills.

## RATE OF MARKETING

The marketing was unusually early, as well as unusually large, in the United States, and also in Argentina and Australia. For the last two countries, the movement is clearly shown by the course of exports, which reached their maximum in February 1925 and ran exceptionally high throughout the four months of January-April (see Chart 7, p. 19, and Appendix Table XVI). About 56 per cent of Argentina's exports and over 61 per cent of Australia's exports during the crop year were exported in these four months.

The rate of movement in the United States is indicated by Chart 3, p. 9, showing weekly receipts at primary markets. (For monthly data, see Appendix Table XI.) The July receipts were not heavy. But in the four months of August-November, 1924, receipts at primary markets totaled 324 million bushels, as compared with 209 million bushels in the same period of 1922 when the crop was about as large as in 1924, and still smaller figures in the corresponding period in 1920, 1921, and 1923, when the crops were somewhat smaller. Between August 1 and November 30 nearly 64 per cent of the heavy marketings during the crop year July-June were received at primary markets, as compared with 54 per cent in 1923-24 and less than 50 per cent in each of the two preceding years.

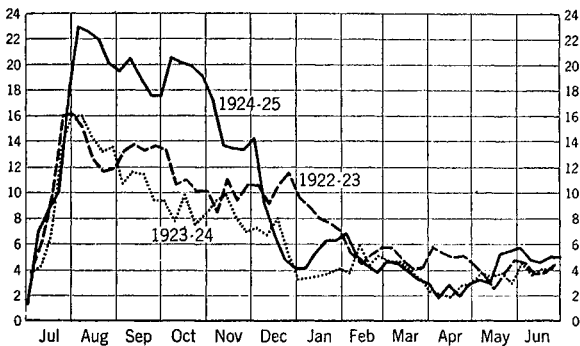
Similar evidence on the heavy autumnal movement is afforded by weekly statistics

of carloadings of grain and grain products. From the second week in August to the last week in October, carloadings continuously exceeded 60,000 per week, twice exceeded 70,000, and averaged 66,572; whereas in the two preceding years the figure of 60,000 was never exceeded, and was closely approached only in four weeks in July-August, 1922; and the averages for the corresponding period were 52,942 in 1922 and 50,788 in 1923.<sup>1</sup> In the Northwest, carloadings of grain and grain products in September and October, 1924, were 50 per cent above average for these months.<sup>2</sup>

ing the size of the crop. Though a large volume was received at Fort William and Port Arthur in the week ending October 11, the peak of the movement occurred in the six weeks ending December 6, whereas in several recent years the peak has been reached in October. Nevertheless, so heavy was the movement in October and November that of the total year's receipts at this leading terminal over 56 per cent had been received by the end of November, as compared with 48 and 57 per cent, respectively, in the corresponding periods of 1922 and 1923.

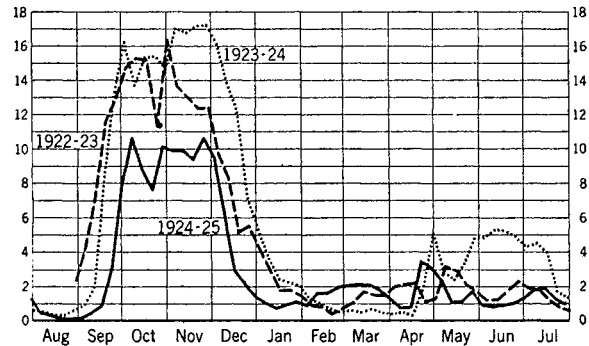
In February, March, and April, however,

CHART 3.—WHEAT RECEIPTS AT UNITED STATES PRIMARY MARKETS, WEEKLY, 1924-25\*  
(Million bushels)



\* Compiled from *Price-Current Grain Reporter*.

CHART 4.—NET WHEAT RECEIPTS AT FORT WILLIAM AND PORT ARTHUR, WEEKLY, 1924-25\*  
(Million bushels)



\* Data supplied by Board of Grain Commissioners.

The rapid marketing of the American crop may be attributed partly to the eagerness of farmers to cash in on their grain at remunerative prices before the Canadian and European crops became available. The Grain Marketing Company urged the wisdom of this policy. The farmer's need of cash, after three bad years, exerted an even stronger influence upon his actions. As it turned out, the farmers would have profited more if they had not rushed their grain to market.

In Canada, on the other hand, the marketing was somewhat delayed, as Chart 4 clearly shows. For this the lateness of the harvest was primarily responsible. September receipts were very light, even consider-

receipts at Fort William and Port Arthur were larger than in the corresponding months of either of the two preceding years, in spite of the much smaller dimensions of the 1924 crop. This was due largely to two factors: there was less pressure upon storage facilities, and price influences were such as to encourage heavy shipments from the farms during the winter months.

In Europe, generally, the marketing of the 1924 crop was abnormally retarded because of the lateness of the harvest and unusually wet weather during the harvest and threshing season. The movement to the mills was delayed for several weeks, and domestic grain was not available in large quantities for milling purposes until October and November.

The experience in 1924-25 admirably illustrates the important influence upon the

<sup>1</sup> Data of Car Service Division of American Railway Association, published in *Railway Age*.

<sup>2</sup> Federal Reserve Bank of Minneapolis, *Monthly Review*, August 28, 1925.

rate of marketing which is exerted by the date of the harvest period, by weather conditions during and immediately after harvest, and by the financial condition of the farmer.

#### CO-OPERATIVE MARKETING OF WHEAT

The crop year 1924-25 witnessed important developments in the co-operative marketing of wheat in North America, and some of these exerted an appreciable influence upon the rate of marketing, the method of marketing, and the course of prices.

At the opening of the crop year 1924-25, state wheat-pooling associations were operating in twelve states—Indiana, Kansas, Nebraska, Oklahoma, Texas, Minnesota, North Dakota, South Dakota, Montana, Colorado, Oregon, and California. These were cast fundamentally on the same pattern. All were based on a grower's contract of five years' duration, all proposed to market wheat more evenly throughout the year, and all hoped to secure a reduction in middlemen's costs through large-scale organization. The California and Oregon associations were wound up during the year, as a result of top-heavy organization, lack of interest among the growers, and the small crops of 1924. The Montana association also suspended operations, in part, it is commonly believed, as a result of political factionalism. The other state pools all made what they regard as substantial progress, under the favorable influence of large crops and rising prices.

The outstanding new developments, however, were the formation, operation, and eventual dissolution of the Grain Marketing Company in the United States, and the organization and successful operation of wheat pools in the three prairie provinces of Canada, which combined to market their wheat through a central selling agency. Since these ventures represent opposing tendencies in co-operative marketing, it is instructive to contrast the experiences in the two adjoining countries.

In Canada, adopting the form of organization urged by Aaron Sapiro, a simon-pure pool was organized in each of the three provinces.<sup>1</sup> The Alberta wheat pool had opened for deliveries of wheat in October 1923, and

in 1923-24 it sold for members some 34 million bushels of wheat. The Saskatchewan pool, incorporated August 25, 1923, was unable to secure sufficient members to operate in 1923-24, but by June 20, 1924, it claimed that over half of the wheat acreage was signed up. The Manitoba pool, incorporated early in 1924, was organized in July following. These pools undertook to secure complete control over the wheat grown by the members, who, under an iron-clad contract, turn over their wheat to the pool with such powers as would give it a virtual monopoly in Canada if a large majority of the wheat acreage could be signed up. Late in July 1924, representatives of the three pools organized a central selling agency, which was subsequently incorporated, under a Dominion charter, as the Canadian Co-operative Wheat Producers, Ltd.

This pooling proceeded, under the guidance of professional organizers, from the grower outward. During the first year of operation few terminal facilities for the handling of grain were acquired. It was arranged that pool members could deliver wheat to any elevator and receive from the local dealer the promised advance payment, the dealer receiving this sum plus his service charges when the wheat was delivered to the pool at the terminals. Farmers' co-operative elevator companies have existed in Canada for many years, and when the new pools were formed there remained two large organizations, the Saskatchewan Co-operative Elevator Company and the United Grain Growers. These older organizations bought and sold the grain of individual farmer-members, or acted as commission agents in the sale of grain, but attempted no pooling and left the farmer free to sell his grain in any way that he chose.<sup>2</sup> The new pools conducted extended negotiations with these co-operative elevator companies and made working arrangements for the use of their grain-handling facilities. It is regarded as a logical development that the two companies should eventually be absorbed in the pools, since they are owned by

<sup>1</sup> See especially *The Grain Growers Guide*, September 24, October 1, 1924, September 9, 1925; and *The Western Producer*, Saskatoon, September 3, 1925.

<sup>2</sup> See WHEAT STUDIES, July 1925, I, 235 f.

much the same wheat growers; but the companies are naturally reluctant to take this step. The pools have also used the facilities of line elevator companies and the public terminal facilities, and have acquired three terminal elevators at the head of the lakes with a combined capacity of about 2 million bushels. Two of the pools are acquiring or building country elevators at strategic places and at other points not now efficiently served, even at points in competition with elevators owned by co-operative elevator companies. The Saskatchewan pool created a subsidiary company, the Saskatchewan Pool Elevators, Ltd., and by September 1925 had purchased or built or had under construction 86 elevators. The Manitoba pool had similarly acquired nine elevators.

It is the policy of the pools to supplant the local commission house, the domestic grain merchant, and the grain exporter, through a unified control of the crop. The central selling agency undertakes to function both as a domestic shipper and as an exporter. It has set up offices in New York and Paris, and has made connections in numerous ports through which it seeks to establish relations with European millers, co-operative societies, and government purchasing agencies. The effect of the selling policy has apparently been to favor the European miller at the expense of North American exporters and Canadian millers. The central selling company is a member of the grain exchanges, utilizes hedging, and has been accused of speculation. At a critical juncture in the spring of 1925, when prices sharply declined and there was evidence of efforts to break the pool, it bought wheat on the central market. It is the avowed policy of the pools to market wheat in an orderly manner, with due reference to the peculiar conditions imposed on the movement of Canadian grain by the freezing of the Great Lakes; but the term "orderly marketing" is apparently interpreted in the sense of distributing sales in such a way as to secure the maximum return to the growers.

In the United States, the new co-operative venture proceeded along entirely different lines. The Grain Marketing Company was

organized in July 1924, primarily under the influence of the Farm Bureau Federation. Though designed to become a growers' co-operative association, the choice was made to start from the terminal end and not from the growers' end. The company leased the terminal facilities of four old established grain houses with a combined capacity of over 50 million bushels. It secured options to purchase these properties at the end of the year. During the first year these properties were conducted under leases, with an operating loan from the vendors. The management was vested in a board of managers, one of whom had been prominent in the Farm Bureau Federation, while two had been executives in the grain houses that were taken over. The company was unrelated to the state pools or their regional groups, or to the co-operative elevator companies, except as it bought pool grain and used co-operative elevators. Indeed, it received support from anti-pool factions. The state pools generally refrained from open opposition, lest the failure of the company should reflect discredit upon the whole idea of co-operative marketing; and several of the pools used the company as their agent in disposing of the grain.

The laws provide that such growers' co-operative associations must be farmer-owned and that more business must be done for members than for non-members. The Grain Marketing Company undertook to become farmer-owned within a year. But the campaign to sell stock to farmers proved a complete failure. According to an officer of the company, this was largely because of the hostility of the state pools. In any case farmers were suspicious of the motives of the company's promoters and managers, and of the terms on which the properties were to be acquired. At the end of the year the Grain Marketing Company had failed to qualify as a co-operative association under the law. In July 1925 the purchase options lapsed, the leases were terminated, and the terminal properties were returned to their previous owners, who have resumed private business. The company is now in process of liquidation.

As already suggested, the marketing policies of the two organizations during 1924-

25 were decidedly at variance. The Grain Marketing Company made no attempt at so-called "orderly marketing," in the stricter sense; on the contrary, its free selling operations during the autumn contributed notably to the unusually heavy marketing of wheat at that time. The Canadian pools, on the other hand, rather resisted the temptation to market early, and consequently had considerable wheat to sell at higher prices later in the season.

The Grain Marketing Company did a straight grain-handling business, including wheat and coarse grains. The volume of business handled is stated to have been over 200 million bushels, of which somewhat over a fourth was wheat. This business is believed to have been efficiently handled in the operative sense, and to have yielded a good margin of profit, though the details are not publicly known.

The Canadian pools handled some 81 million bushels of the small 1924 crop of the three prairie provinces. An initial advance of \$1.35 per bushel (basis, No. 1 Northern at Fort William) was made to members, and a small additional payment was made in the spring. The final basis of payment to growers was reported early in September 1925 as \$1.66 a bushel for No. 1 Northern at Fort William, after deduction of carrying charges in both country and terminal elevators but subject to deduction for transportation charges. On lower grades the basis of payment was graded downward to \$1.19 for No. 6. From this was deducted a commercial reserve charge of 1 per cent (1.66 cents per bushel), a reserve of 2 cents per bushel for acquiring elevators, and 0.64 cents per bushel for organizing and operating expenses. There is no way of determining whether wheat sold to private traders netted the growers more or less than the wheat sold through the pools; nor are the data available to indicate the spread between farm price and mill or export price, and whether the operations of the pools were more or less efficient than the operations of the large grain merchants.

In any event, the Canadian pools increased their strength with the growers. The Saskatchewan pool announced early in September 1925 that over 10,000 additional

farmers had signed contracts, and that two-thirds of the Saskatchewan wheat acreage had entered the pool. In addition, it asserted that nearly 30,000 farmers had agreed to deliver their oats, barley, and flax to a coarse-grain pool to be operated in 1925-26 on the same lines as the 1924-25 wheat pool. According to present indications, considerably more than half of the 1925 wheat crop of the prairie provinces, and an important fraction of the coarse-grain crops, will be marketed through the pooling scheme.

The contrast between the Canadian and the American experiments is striking. The Canadian pools began as iron-clad growers' organizations, without terminal properties, planning to acquire these with the growth of business. The Grain Marketing Company was a terminal grain-handling organization, expecting to get wheat growers into it by sale of stock. The differences in procedure mean something more than different attacks on the same problem; they represent opposed, and indeed controversial, theories of the organization of agricultural co-operative marketing associations. It was not an accident that grain dealers in Canada have accused the Canadian pools of "bulling" the market; nor that American wheat growers who were expected to buy the stock of the Grain Marketing Company accused that concern of "bearing" the market. It was not an accident that the Grain Marketing Company, with a benevolent grain trade, failed for lack of farmer support, while the Canadian pools have been able to thrive because of farmer support.

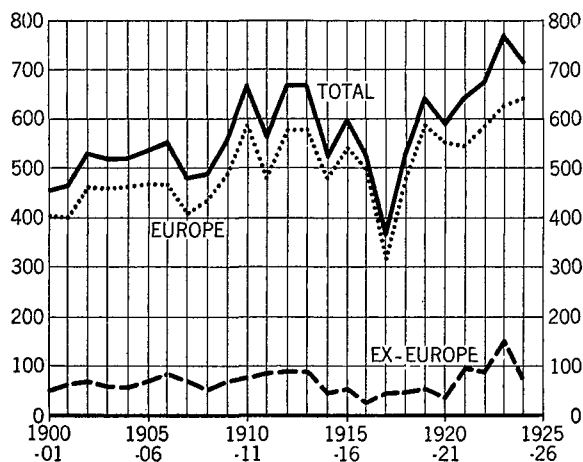
The experiences in the organization and dissolution of the Grain Marketing Company contain valuable lessons, but have thrown little light on the applicability of co-operative association to the marketing of wheat. On the other hand, the initial success of the Canadian wheat pools does not prove that pooled marketing is intrinsically the best method of selling a wheat crop, for the year was exceptionally auspicious for launching the experiment. While the Grain Marketing Company failed for different reasons, it must not be forgotten that wheat is far more of a unity in the prairie provinces of Canada than it is in the United States.

## IV. INTERNATIONAL TRADE IN WHEAT AND FLOUR

## VOLUME AND DISTRIBUTION

The international movement of wheat and flour<sup>1</sup> was again exceedingly large in 1924-25, though it did not reach the high record established in 1923-24. Net exports of the ten principal exporting countries (excluding Russia) were nearly 765 million bushels in 1924-25, as compared with slightly over 790 million bushels in 1923-24, about 700 million bushels in 1922-23, and much smaller figures still in earlier post-war years. (See Appendix Table XIII.) According to Broomhall, international shipments in 1924-25 were 715 million bushels in the 52 weeks ending about August 1 (ex-

CHART 5.—WORLD WHEAT SHIPMENTS,  
1900-01 TO 1924-25\*  
(Million bushels)



\* Broomhall's data, from *Corn Trade Year Book* and *Corn Trade News*.

clusive of 16 million bushels shipped across frontiers in Central Europe), as compared with 775 million bushels (including 23 millions from Russia) in 53 weeks in 1923-24.<sup>2</sup> The five-year pre-war average of international shipments, as reported by Broomhall, was only 622 million bushels. (See Appendix Table XII.)

The huge volume of export shipments was not due, as it had been in the preceding crop year, to abundant exportable surpluses and to low prices stimulating purchases by importers. On the contrary, it oc-

curred in spite of much more meager exportable surpluses (see Chart 2, p. 7) and in spite of high and generally rising prices. Rather was it due to crop shortages in many importing countries, coupled with some improvement in ability to finance imports.

The distribution of the net exports was very different in 1924-25 from what it had been in the preceding year, or indeed in any recent year. The United States contributed about one-third of the total exports—some 254 million bushels—and outranked Canada for the first time in three years. America's net exports were over twice as large as in 1923-24, an increase of 130 million bushels. Canada's net exports were about a fourth of the world's total, 192 million bushels, as compared with 346 millions in 1923-24. Australia and Argentina each contributed some 123 million bushels, together nearly a third of the world total. Australia's exports were the largest on record, and 38 million bushels more than in 1923-24. Argentina's were about the same as the average for 1920-24, but nearly 50 million bushels less than in 1923-24. India exported 38 million bushels, more than in any other year since the war, but less than her pre-war average.

Among the minor exporters, Chile and Jugo-Slavia exported more than in any previous year since the war, while Hungary and Roumania exported substantially less than in 1923-24. Russia, which in 1923-24 had exported over 23 million bushels of wheat, imported nearly 10 million bushels in 1924-25, chiefly in the form of flour.<sup>3</sup> Al-

<sup>1</sup> An excellent background for this section is provided by J. A. Le Clerc, *International Trade in Wheat and Flour*, U.S. Department of Commerce, *Trade Promotion Series No. 10*, 1925.

<sup>2</sup> Broomhall's shipments figures are less complete, but the discrepancy varies from year to year because (1) dates of export do not coincide with dates of shipments, and (2) Broomhall figures by weeks, whereas official trade figures are reported by months. Until the past two crop years there was more or less duplication in official figures for exports from the United States and Canada, because transit shipments were not all recognized as such.

<sup>3</sup> According to Broomhall's *Corn Trade News*, July 28, 1925, total shipments to Russia in 1924-25 were 9.4 million bushels. Official statistics are not yet available.



geria and Bulgaria, normally small exporters, were also net importers in 1924-25, while Tunis, which is alternately a net exporter and a net importer, was practically self-sufficient in 1924-25.

The most striking change in the distribution of imports, as compared with the preceding year, was the reduction in ex-European takings. Broomhall's reports of shipments to importers outside of Europe, for example, showed 75 million bushels in 1924-25 against the record of 149 million bushels in 1923-24. These shipments were the smallest since 1920-21, and slightly below the pre-war average. (See Appendix Table XII.)

Net imports of European countries as a whole, excluding Russia and certain minor importers for which not even estimates can readily be made, were the largest since the war—some 586 million bushels, as compared with about 548 millions in 1923-24. (See Table 4, p. 22.) Broomhall reported shipments to Europe, *including* Russia, as 640 million bushels, some 13 million bushels larger than the previous record established in 1923-24. The discrepancy between the two sets of figures can be accounted for chiefly on three grounds. Some shipments made late in 1923-24 did not figure as imports until 1924-25, and corresponding shipments late in the latter year were smaller. Broomhall's figures include shipments to minor importers for which official data are lacking. Flour exports from Europe were larger in 1923-24 than in 1924-25. Taking such factors into account, one is safe in accepting the fact that Europe's net imports of wheat and flour in 1924-25 were substantially larger than in 1923-24.

The comparison of 1924-25 and 1922-23 is also illuminating. Europe's wheat and rye crops in 1924 were about 50 million bushels less than in 1922. Rye imports were much the same in the two years. Wheat imports, however, were about 40 million bushels larger in 1924-25, and the increase in wheat imports nearly offset the decline in the two crops. Hence Europe as a whole had nearly as large supplies (disregarding carryovers) of bread grains in 1924-25 as in 1922-23

—more wheat and less rye. Shipments to ex-European importing countries, according to Broomhall, were about 15 million bushels less in 1924-25 than in 1922-23.

Among European importers, the most conspicuous change was in Germany's net imports. These were reported as 81 million bushels, as compared with 31 millions in 1923-24 and a four-year average for 1920-24 of 49 million bushels. The contrast is somewhat exaggerated, since in previous post-war years considerable quantities of imports were not included in the official returns, chiefly because portions of Germany's frontiers were under control of foreign armies. Other factors, however, account for a genuine increase in imports—the shortage in rye as well as in wheat, together with the relatively greater increase in prices of rye as compared with wheat; the improvement in Germany's foreign credit resources, as well as improved economic conditions at least by comparison with the two preceding years; and the importation of both grain and flour in anticipation of protective tariffs.

Poland also showed by far the largest wheat (mainly flour) imports since the war, chiefly because of the acute shortage in rye. The same factor was doubtless responsible for some increase of wheat and flour imports into Holland and several of the Baltic States, but it did not prevent reductions in Scandinavian wheat imports. Italy imported nearly 20 million bushels more than in 1923-24, but less than in any other year since 1919-20 and only moderately in view of her small crop. With the exceptions mentioned, nearly every country imported less wheat in 1924-25 than in 1923-24. The reduction in French imports was over 20 million bushels.

#### INTERNATIONAL TRADE IN FLOUR

The international movement of wheat flour, which in 1923-24 reached a high level previously exceeded only in the three years 1917-20, was again large in 1924-25. According to the fairly comprehensive statistics reported by the International Institute of Agriculture, the aggregate flour exports in the

year ending July 31, 1925, were over 45 million barrels, as compared with 48 million in 1923-24 and 36½ million in 1922-23.<sup>1</sup> The total volume of flour imports by the principal flour-importing countries for which data are available was slightly larger in 1924-25 than in 1923-24, but there was evidently a substantial reduction in flour imports by many small scattered importers, as well as by China. Appendix Table XIV gives relevant statistics of net exports and net imports, by countries, for the past six crop years.

The United States exports of flour declined heavily. In the year ending July 31, 1925, they were the smallest since the war, except in 1920-21—only 13.9 million barrels as compared with 17 million barrels in 1923-24. This decline was due in part to the small crop of the Pacific region, which is usually a heavy exporter of flour, and partly to the reduced demand from the Orient and other ex-European flour importers who had carried over considerable stocks of flour and who restricted their purchases because of the great advance in prices. Canadian flour exports also declined, for similar reasons and because of the short wheat crop; but they were sustained somewhat by Russian orders, which were placed in Canada rather than in the United States, in part because of Russian resentment at America's unwillingness to treat with the Soviet government. Argentina and Australia exported more flour than in any year since 1919-20, except in 1923-24, and India more than in any earlier post-war year. The five principal exporting countries, taken together, exported much more flour than on the average before the war, in the aggregate 31 million barrels as compared with 18 million.

The countries of the Danube basin had little grain for export in any form. Because of the local situation, Hungary succeeded

but poorly in importing grain to keep her flour mills occupied. Nevertheless, Hungary's flour exports were not far below those of 1923-24, and otherwise the largest since the war, though less than 30 per cent of her pre-war exports; while Jugo-Slavia's flour exports were by far the largest since the war. Italy, while forced to restrict flour exports, exported more flour than in any post-war year except 1923-24. France, another wheat importer, remains a net exporter of flour. Since January 11, 1925, shipments to the Saar area have no longer been counted as French exports; if allowance is made on this account, French net exports of flour, though small in absolute quantity, were the largest since the war and several times the pre-war average. Germany stands out as the leading European net importer of flour, and her net imports of 5,384,000 barrels in 1924-25 constitute a record.<sup>2</sup> Poland's flour imports, about 2½ million barrels, were also exceptionally high. Russia imported substantial quantities of flour, perhaps as much as 2 million barrels. Holland and Scandinavian countries reduced their net imports of flour. Egypt increased hers to the highest point in several years. Flour imports of Czecho-Slovakia and Greece were higher than in any recent year except 1923-24. Algeria and Tunis, sometimes net exporters, were net importers.

On the whole, the international trade in flour in 1924-25 must be regarded as above normal. Crop shortages in Europe and in Russia necessitated unusual imports of flour as well as of grain, and tariff barriers were lower than they are likely to be in the near future. Nationalistic policies designed to favor domestic milling are common. Hungary and Italy permit milling in bond. Roumania and Jugo-Slavia, which impose export duties on wheat, impose lower duties or none on the export of flour. Several important importing countries, as will be noted below, impose higher duties on flour than on wheat, and relaxations of these duties are not to be expected in ordinary years. With normal crops in Europe, and with European mills improving in financial position, the international flour trade tends to be restricted, and European millers will compete with flour exporters overseas both

<sup>1</sup> *International Crop Report and Agricultural Statistics*, September 1924, p. 417; September 1925, p. 475.

<sup>2</sup> Figures for other post-war years, however, are undoubtedly below the truth. See *WHEAT STUDIES*, December 1924, I, 35. At times during 1924-25, notably in March and April, German millers did a good export business with Russia and the Baltic States, and some with Poland and Czecho-Slovakia. *Northwestern Miller*, May 20, 1925, p. 738.

in European importing markets and outside. Finally, the milling capacity of the Orient has expanded considerably in recent years.

#### IMPORT AND EXPORT RESTRICTIONS

The short European crops of wheat and rye in 1924, in both importing and exporting countries, led to numerous alterations in the duties or other restrictions upon imports and exports of cereals and their products. Broadly speaking, exports, particularly of grains, were restricted, and imports, particularly of grains, were encouraged. Consideration for consumers, in view of domestic shortages and high prices of wheat and flour, for the time thwarted pressure from agrarian and milling interests for protective measures. On the whole the import trade in wheat and flour was more nearly free than it has been for many years or seems likely to be for some years to come.

Italy prolonged until July 24, 1925, the suspension of high import duties imposed by the tariff act of 1921 and not yet enforced. Wheat was admitted duty-free. Flour and alimentary pastes were admitted at reduced rates from September 18 to October 28, 1924, thereafter duty-free. The export of native wheat was prohibited after September 18, and the export of yellow maize (except under license) after October 28; while exports of flour and alimentary pastes were restricted to certain maximum amounts per month.

French import duties on wheat were refunded on wheat milled into flour and delivered to bakers, in accordance with the law of December 12, 1924, effective to July 31, 1925. Spain, from April 25, 1925, relaxed the embargo on imports, imposed in 1921 as a measure to protect wheat growers, and permitted imports under certain restrictions as to quantity and price.

Germany and Czecho-Slovakia postponed the adoption of protective tariffs on agricultural products, which had been under serious consideration since early in 1924, and the new duties did not become effective during the crop year. Germany on September 8, 1924, and Norway on November 21, embargoed exports of wheat, rye, and barley.

Poland, faced with an acute shortage of bread grains, early in September 1924 prohibited the export of wheat, barley, and oats, put a high export duty on rye, and from October 7 imposed a prohibitive export tax of 15 zloty per quintal on wheat, rye, and flour exports, and 10 zloty per quintal on oats and barley. For a brief period in October wheat and rye flour and maize meal were admitted duty-free, and thereafter at greatly reduced rates. These regulations were in force until August 1, 1925. Lithuania and Esthonia, in the autumn of 1924, relaxed import restrictions on wheat and flour.

Austria on September 6, 1924, adopted a tariff law imposing duties on wheat and flour according to a sliding scale, with a differential against flour.<sup>1</sup> These, after some delay, came into force in January 1925, but only the low minimum rates were effective at the price levels of the second half of the crop year. Greece adopted arbitrary regulations in February 1925 concerning the acidity, elasticity, gluten, and ash content of imported flours. These threatened to restrict imports, but because of protests by importers the operation of these artificial regulations was postponed until June 1, and in April a duty of 18 drachmas per 140 pounds (about 45 cents per barrel) was levied on flour, the wheat duty remaining unchanged.

The countries of the lower Danube, normally exporters, adopted somewhat diverse policies. Bulgaria, with bread-grain crops considerably below normal consumption requirements, raised her export taxes on grain from September 1, 1924, and from October 31 prohibited export of wheat and flour. Roumania raised the export tax on wheat on July 30, 1924, from 2,500 to 4,500 lei per metric ton, and the increasing value of the leu operated to restrict exports. Nevertheless, in the early part of the season considerable quantities of old wheat and some

<sup>1</sup> When wheat sells at the Vienna Bourse at 320,000 to 380,000 paper crowns per quintal (\$1.23-\$1.46 per bushel), the wheat duty is fixed at 2 gold crowns (11 cents per bushel), the flour duty at 5 (90 cents per barrel). At higher prices both duties are to be reduced and at lower prices raised. The minimum duty on wheat is fixed at 0.25 gold crowns, the maximum at 4.

750,000 bushels of new wheat were exported, with the result that stocks were depleted, prices rose rapidly, and, as flour and bread prices were held down, peasants held their wheat. On January 7 the government prohibited exports of wheat and oats, and their derivatives, and early in March the export of rye and barley also was embargoed. Jugoslavia, estimating the 1924 crops as better than those of 1923, on September 11, 1924, reduced export taxes on wheat and rye by about 20 per cent. Before it was realized that the crop was really below that of 1923 and mediocre in quality, the exportable surplus of bread grains had been largely exported, and some imports took place in the spring. Hungary also exported too heavily in the early part of the crop year, and later found it necessary to import grain. From January onward wheat, rye, and spelt were admitted duty-free, and flour at a duty of  $3\frac{1}{4}$  gold crowns per quintal (59 cents per barrel).

#### CANADIAN-AMERICAN MOVEMENTS

United States imports of Canadian wheat, which had reached 27.3 million bushels in 1923-24, were only 6.2 million bushels in 1924-25, and almost the whole of this was imported to be milled in bond for export as flour. As shown by Table 2, this movement

TABLE 2.—UNITED STATES IMPORTS OF WHEAT AND FLOUR FROM CANADA, 1919-25\*

(Million bushels)					
Crop year July-June	For consumption, duty-paid	For mill- ing in bond, etc.	Total wheat	Flour as wheat	Total wheat and flour <sup>a</sup>
1919-20..	... <sup>b</sup>	... <sup>b</sup>	4.0	0.67	4.6
1920-21..	... <sup>b</sup>	... <sup>b</sup>	50.7	6.39	57.1
1921-22..	8.5 <sup>c</sup>	6.2 <sup>c</sup>	14.5	2.78	17.3
1922-23..	7.4	9.3	18.0 <sup>d</sup>	1.93	19.9
1923-24..	13.7	13.9	27.3 <sup>d</sup>	0.76	28.0
1924-25..	0.27	5.9	6.2	0.03	6.2

\* Data of U.S. Department of Commerce summarized by Department of Agriculture. See especially *Agriculture Year-book, 1924*, pp. 560, 578.

<sup>a</sup> Without deduction for re-exports, which rarely reach 1 million bushels.

<sup>b</sup> Distinction established by emergency tariff law effective May 28, 1921. Before this no duties were enforced in 1920-21 or in 1919-20.

<sup>c</sup> Including June 1921.

<sup>d</sup> Revised totals, differing slightly from the sums of component figures.

was the smallest since 1919-20. The reasons are fairly obvious. Whereas in 1923-24 the United States had a shortage of high-quality

hard milling wheats, in spite of an exportable surplus of other wheats, in 1924-25 the United States crop of hard wheats of high quality was substantially in excess of domestic requirements; while the Canadian crop was so short that Winnipeg prices were often above Minneapolis prices. (See below, p. 42.) Hence there was no stimulus to import Canadian wheat over a high duty, for domestic consumption; and the flour-export demand could be supplied, for the most part, without drawing upon Canadian grain. Imports of Canadian flour, which have declined in recent years under the increasingly high protective duties, were very small in 1924-25.

TABLE 3.—CANADIAN WHEAT AND FLOUR EXPORTS THROUGH UNITED STATES AND CANADIAN PORTS, 1920-21 TO 1924-25\*

(Million bushels)				
Crop year Aug.-July	Total exports	Through U.S. ports	Through Canadian ports	Through Vancouver
1920-21.....	112.3 <sup>a</sup>	63.6 <sup>a</sup>	48.7 <sup>a</sup>	1.1 <sup>a</sup>
1921-22.....	168.0	109.7	58.3	9.4 <sup>a</sup>
1922-23.....	263.3	150.8	112.5	21.5 <sup>a</sup>
1923-24.....	323.6	164.7	158.8	59.1 <sup>a</sup>
1924-25.....	189.5	99.1	90.4	26.0

\* Official data from *Reports on the Grain Trade of Canada and Canadian Grain Statistics*. These figures do not include exports by lake and rail to the United States, hence the totals do not agree with figures for Canada's gross or net exports.

<sup>a</sup> September-August.

As usual, more than half of the Canadian wheat and flour exports were shipped out through United States ports, as shown by Table 3; but Canadian ports handled a larger proportion of the moderate total than in any recent year except 1923-24. Because of the short crop in Alberta in 1924, exports through Vancouver were only 26 million bushels, as compared with the record of 59 million bushels in 1923-24. Even so, nearly 30 per cent of Canada's wheat and flour exports through Canadian ports were shipped via Vancouver in 1924-25. Because of the light Canadian crop and the heavy American exports during the autumn, the volume of American exports through Canadian ports, chiefly Montreal, was much heavier than in any recent year. Receipts of United States wheat by public elevators at St. Lawrence River ports, almost wholly for export, were 51.9 million bushels, three times as

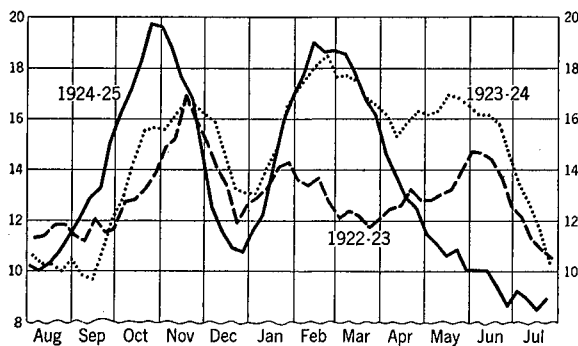
large as in 1923-24, and more than double the four-year average 1920-24.<sup>1</sup>

#### EXPORT MOVEMENT THROUGH THE YEAR

The course of wheat exports in 1924-25 was unusual in three respects: the autumnal movement was extraordinarily heavy, and earlier than usual; from late January until early March, exports were also exceptionally heavy; finally, exports declined sharply from late in March through the rest of the year, and the later peak, which has been common since the war, was conspicuously absent. In the last three months of the crop year the volume of exports was smaller than even in the corresponding period of years of much smaller total exports.

Chart 6 illustrates this movement in comparison with the movements of the two preceding years, by showing Broomhall's weekly figures for world shipments smoothed by a five-weeks moving average.

CHART 6.—WORLD WHEAT SHIPMENTS, WEEKLY, CROP YEARS 1922-23 TO 1924-25\*  
(Million bushels; 5-weeks moving average)



\* Data from Broomhall's *Corn Trade News*

Chart 7 supplements this by showing Broomhall's weekly data for 1924-25, in total and with separate curves for North American and Southern Hemisphere shipments. Appendix Table XV gives monthly figures for net exports from the world's principal exporters, in 1924-25 in comparison with

<sup>1</sup> Data of Dominion Bureau of Statistics: *Reports on the Grain Trade of Canada, 1921-24; Canadian Grain Statistics, 1924-25*. Corresponding data for previous crop years (September-August) are as follows: 1920-21—14.2; 1921-22—33.5; 1922-23—31.5; 1923-24—16.7.

1923-24 and with pre-war and post-war averages.

The international movement was remarkably heavy in the late summer and early autumn. Official figures for the five leading exporters show a total of 165 million bushels for October-November, 1924, including 88 millions for October alone. Both were record figures. In the six weeks ending November 15 Broomhall reported shipments averaging nearly 20 million bushels a week—the largest ever reported for a period of this length.

In exporting and importing countries alike, conditions favored this heavy movement. By midsummer it was clear that the United States would be the principal source of exports. The hard-winter wheat crop, which contained the bulk of the exportable surplus, had been harvested in early summer, and the spring-wheat crop was harvested promptly. American wheat growers, badly in need of money after three lean years, found the higher prices of August and September distinctly attractive. The movement of grain was unhindered by weather conditions or difficulties of transportation and handling, and ocean shipping was abundantly available at moderate rates. In Canada, though a late harvest delayed the movement to market, there was the usual pressure to get the grain through the lakes before navigation closed. Hungary, Roumania, and Jugo-Slavia also exported heavily in the summer and early autumn—so heavily, indeed, that they were forced to import grain during the spring. These movements were the result of attractive export prices, substantial carryovers, and a failure to appraise correctly the relation between domestic supplies and requirements for the year as a whole. In the case of Jugo-Slavia, a material overestimate of the crop was an important factor.

Moreover, as we have already remarked, crops of European importing countries were known to be short; the harvests were late; and rains in the harvest and threshing season caused both shrinkage in quantity and deterioration in milling quality, and delayed the marketing of millable grain. By the end of the summer it was recognized that Russia, which had contracted to export, would

have little or no exportable grain. Consequently, in September many importers became quite panicky in their demands, and placed heavy contracts for immediate shipment from North America, which added to the demand from shrewd merchants who realized that wheat would go much higher. Financial influences were specially favorable to imports at this time. In August crucial decisions were made which brought the Dawes Plan into operation on September 1, and gave a decided boost to European credit. In the next few weeks European loans were floated in America in large amounts, and both in New York and London private credits to European merchants were granted much more readily than before.

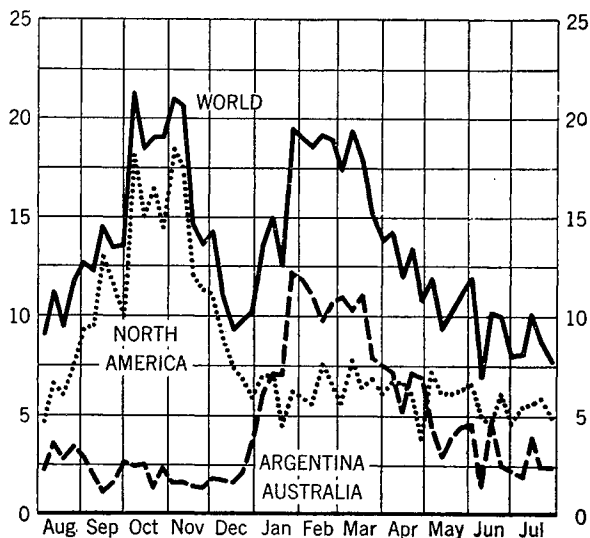
A pronounced reaction occurred after the middle of November. This is apparent in Broomhall's figures, but is somewhat obscured in the export statistics because of exports from Canada through the United States, which did not leave the American seaboard until some weeks later. To this reaction also several factors contributed. European exporting countries had practically exhausted their exportable surpluses. European importing countries found their worst fears concerning domestic crops unconfirmed by threshing returns, and domestic grain came to market in large quantities in October and November. Milling demands for imported grain fell off, grain importers found themselves unable to sell cargoes hastily imported, serious congestion developed in Antwerp, Rotterdam, and German ports, prices sharply declined and caused considerable reselling at a loss, contracts were canceled where possible and new orders declined. The tightness of credit in Germany was a contributing factor. The crisis in Continental grain markets, especially severe in Germany in October–November, was short-lived, but it accounts in large measure for the decline in shipments in November and December.

The great bulk of United States exports of wheat as grain was shipped out by the end of November. Net exports of wheat and flour for August–November were 148 million bushels, more than in the entire crop year preceding. Exports from the Canadian crop supplemented United States exports

late in the year; but the close of navigation (December 12) was a little earlier than usual, and the Canadian pool, which was a dominant factor in the market for the first time, refrained from rushing Canadian wheat abroad.

CHART 7.—WORLD WHEAT SHIPMENTS, WEEKLY, 1924–25\*

(Million bushels)



\* Data from Broomhall's *Corn Trade News*.

After the passing of the autumnal crisis in European markets, the basic shortage in Europe gave rise to renewed demands of European importers in December and January, and Russia entered the market as a large purchaser of flour. In view of the greatly diminished exportable surplus in the United States, large contracts for future delivery were placed in Argentina and Australia before and during the harvest season. As a result, large shipments were made from the Southern Hemisphere as soon as the grain became available there, and for eight weeks, from January 25 to March 21, these shipments averaged 11 million bushels a week. These early heavy shipments were largely responsible for the record totals in this period, for North American shipments, though seldom less than 5 million bushels a week, did not attain such large proportions. The high level of total shipments was reached in the eight weeks from January 25

to March 21—an average of 18½ million bushels a week.

The noteworthy absence of a spring peak in shipments is explained in part by the fact that so large a proportion of the North American and Southern Hemisphere surpluses had been exported earlier in the year. But the important factor was the unexpected persistence of weakness of demand in European importing countries. In the face of excellent prospects for domestic crops, they were content to await the new harvests rather than pay the prevailing prices (though these were lower than in January and February) for customary supplies of imported grain. Their actions were probably somewhat influenced, in certain cases, by depreciation of foreign exchanges (as in France and Italy), by other weaknesses in the financial situation, and by a greater conservatism in extending credits to European lenders as a more sober view of the European outlook supplanted the enthusiasm of the previous autumn. Losses by importers and millers constituted another factor in certain countries. But the dominant influence was the favorable European outlook for the 1925 crops of wheat and rye.

#### THE COURSE OF IMPORTS

The foregoing discussion throws light upon the general course of imports during the crop year. The movement can be studied in more detail with the aid of Appendix Table XVI, which gives monthly data for net imports of wheat and flour by the principal importing countries.

Most countries imported more heavily in the first five months than during the rest of the year. This was especially true of Great Britain, France, Czecho-Slovakia, and Austria. In the case of France, indeed, two-thirds of the crop year's net imports were imported by the end of December. Both Great Britain and France imported more wheat and flour in August 1924, at fairly low prices, than in any subsequent month. The principal exceptions to heavy early importations were Germany and Italy. Germany imported little wheat until October, and November was the month of maximum net imports.<sup>1</sup> For this the credit situation

was principally responsible, but the acute fears concerning the domestic crop in September had a material influence. The subsequent decline in imports was due first to the congestion in ports and the wheat market crisis, and to the high price of wheat in export markets. The rise of imports late in the crop year, to another peak in July, was due in part to laying in stocks before the proposed tariff should come into effect. Italy, on the other hand, drew heavily upon domestic stocks early in the year, for some time counted upon Russian imports which failed to arrive, and did not import largely until December. From then until May 1925, imports were heavy, even at high prices, raised further by the depreciation of the lira. The peak month was April. Undoubtedly the tendency of Italy to rely heavily upon Argentine grain accounts in part for the larger imports after January 1.

Viewing the situation in retrospect, it is clear that Europe over-imported first in the autumn and later in midwinter, in the sense that wheat was imported farther in advance of the date of use than was customary. The heavy shipments in the autumn represented in part the desire to anticipate the rise in price, and in part a distress program of imports based upon an exaggeration of the gravity of the European position. The heavy winter shipments from the Southern Hemisphere included large amounts of wheat purchased on contract in the autumn, and also open consignments, the belated protection of which, by hedging prior to their arrival in Europe, contributed notably to the price decline. For both periods, Europe succeeded in purchasing a considerable portion of her supplies so far in advance of the January rise in price as to effect a substantial economy in the cost of the imports. (See below, p. 46.) European purchases during January and February were relatively light. The progressive decline in imports in the final five months of the year corresponded to the security inspired by the stocks in Europe when interpreted in the light of the favorable outlook for the new crop.

<sup>1</sup> This peak may be in appearance only, for it was in November that Germany resumed control of custom houses in the Ruhr Valley, and imports made earlier may have been recorded as of that month.

If complete information could be assembled, it would probably be found that British grain merchants occupied the position of advantage in the purchase of wheat before prices reached a high level, while Continental merchants twice occupied a position of disadvantage when they were forced to sell, at a loss, wheat bought at high prices.

#### OCEAN FREIGHT RATES

Ocean freight rates continued on a low level in 1924-25, owing to the persisting excess of available tonnage over trade requirements. Large reserves of idle tonnage were always ready to be called into operation, even though much of the reported world merchant fleet, chiefly American war-built tonnage wasting away in American harbors, has long been entirely out of condition.

The heavy autumnal shipments of grain were a decided boon to the shipping trade, and caused substantial increases in freight rates from the low point of July 1924. (See Appendix Table XVIII.) On the Atlantic routes the highest rates of the season were reached, naturally, between late September and early December. In October the New York-Liverpool rate averaged 8.6 cents per bushel as compared with the July average of 4.1 cents. On other North Atlantic routes

the increase was more moderate, from 3 to 4 cents per bushel. Rates from Argentina to Europe reached their maximum around the turn of the year, but because of the availability of liner space and excessive expectations of cargoes, rates in January averaged only 2½ cents higher than in the preceding July, and they declined rapidly to very low levels in the late spring. The large Australian crop and the demand for rapid shipments from that region drove rates to relatively high levels. At their maximum, Australia-United Kingdom rates averaged 31.3 cents in February 1925, as compared with 26.7 cents in February 1924 and 18.8 cents in July 1924—the maximum and minimum, respectively, in the preceding crop year. After February 1925, there was a marked decline in rates on practically all routes, accompanying the decline in shipments, and in the spring of 1925 rates averaged substantially lower on most routes (except the Australian and North Pacific) than in the corresponding period of 1924.

On the whole, the level of ocean freight rates for the crop year was not very different from that of the preceding year, and must be considered abnormally low; but the conditions which make for low rates persist.

#### V. CONSUMPTION OF WHEAT IN 1924-25

In consequence of the world shortage and high prices of bread grains, world consumption of wheat, which had been exceptionally large in 1923-24, was materially reduced in 1924-25. The reduction was almost universal, but was much greater in some countries than in others. Unfortunately it is impossible, in the absence of comprehensive information about carryovers, to appraise actual consumption at all precisely. It is desirable, however, to present a tentative appraisal, together with a consideration of influences bearing upon consumption in different countries.

#### REDUCTION IN STOCKS

Consumption requirements were met in 1924-25, to an indeterminate but quite appreciable extent, by drafts upon stocks. As

we point out below (pp. 29 ff.), the indications are that carryovers into 1924-25 were exceptionally heavy in exporting countries, while carryovers out were only of moderate size; in European importing countries, as well as in Russia and the Danube countries, carryovers in were moderate and carryovers out were generally, in some cases indeed exceptionally, low; in certain ex-European importing markets, carryovers in were exceptionally large, while carryovers out were moderate or low. Conditions varied greatly from country to country, even in Europe, but there is no doubt that the world carryover was relatively large at the beginning of the crop year and abnormally low at the end.

The record of stocks of wheat and flour has always been notoriously incomplete.



Every country possesses a considerable volume of unreported stocks. There are numerous indications that reductions in American "invisible" stocks contributed substantially to consumption requirements in 1924-25. This was doubtless true in Canada and in Europe, where crops were especially short in 1924 and promised to be large in 1925, to an even greater extent than in the United States, where the 1924 crop was large and the 1925 crop of winter wheat promised badly.

These facts must be borne in mind in considering the apparent domestic utilization of wheat in 1924-25, especially in comparison with 1923-24; but for most countries, in the absence of statistics of carryovers, domestic utilization must be measured roughly by taking the crop plus imports less exports. The resulting figures, given in some detail in Appendix Table XIX, furnish a significant basis for discussion, but generally overstate the actual consumption in 1923-24 and understate it for 1924-25.

#### EUROPEAN CONSUMPTION IN 1924-25

The wheat consumption of Europe, as the principal wheat-importing area, deserves special consideration. Table 4 summarizes

TABLE 4.—EUROPEAN WHEAT CROPS, IMPORTS, AND SUPPLIES (EX-RUSSIA), PRE-WAR AND POST-WAR\*  
(Million bushels)

Crop year	Crops	Net imports	Supplies
1920-21.....	948	568	1,516
1921-22.....	1,216	524	1,740
1922-23.....	1,044	556	1,600
1923-24.....	1,261	548 <sup>a</sup>	1,809 <sup>a</sup>
1924-25.....	1,055	586 <sup>a</sup>	1,641 <sup>a</sup>
Average			
1909-14.....	1,348	407	1,755
1920-24.....	1,117	549	1,666

\* See Appendix Tables I and XIII. Net imports are computed by adding the official statistics for countries reporting net imports and subtracting net exports of Danube countries. These figures are only rough approximations, since crop estimates are far from accurate, import figures are imperfect, and pre-war and post-war figures are not altogether comparable because of boundary changes.

<sup>a</sup> Partially estimated.

the crops, net imports, and available supplies (disregarding carryovers) for European countries exclusive of Russia, Turkey, and certain minor countries, for five post-

war years in comparison with a pre-war average for the same territory. Despite their imperfections, these figures afford a fairly safe basis for a broad view. It will be noted that Europe's currently available wheat supplies in 1924-25 were about 40 million bushels larger than in 1922-23, but about 100 million bushels less than in the average pre-war year or in 1921-22, and about 160 million bushels less than in 1923-24.

Table 5 summarizes the statistics for apparent domestic utilization of wheat in most of the European importing countries in

TABLE 5.—APPARENT DOMESTIC UTILIZATION OF WHEAT BY EUROPEAN IMPORTING COUNTRIES SINCE THE WAR\*  
(Million bushels)

Country	1920-24 average	1923-24	1924-25
Great Britain and Ireland	278.6	299.9	280.8
Italy.....	276.8	294.5	258.8
Germany.....	141.6 <sup>a</sup>	137.3 <sup>a</sup>	170.1
France.....	315.9	329.2	311.8
Belgium.....	50.2	53.2	51.5 <sup>b</sup>
Netherlands.....	29.1	32.9	31.7
Scandinavia.....	39.3	48.8	37.0
Switzerland.....	18.2	20.7	17.0
Austria.....	23.4	27.2	24.8 <sup>b</sup>
Czecho-Slovakia.....	49.1	57.4	52.3
Poland.....	45.3 <sup>c</sup>	52.2	43.4
Baltic States.....	11.3	14.3	13.7
Spain and Portugal.....	163.8 <sup>d</sup>	172.8 <sup>d</sup>	136.8 <sup>d</sup>
Greece.....	26.8	33.6	29.5
TOTAL.....	1,469.4	1,574.0	1,459.2

\* See Appendix Table XIX for details.

<sup>a</sup> Figure too low, since post-war crops are known to be underestimated, and net imports are incomplete because of territories occupied by foreign armies.

<sup>b</sup> Net imports partially estimated.

<sup>c</sup> Average for 1921-24.

<sup>d</sup> Net imports for Portugal estimated.

1924-25, in comparison with corresponding figures for 1923-24 and a four-year average 1920-24. The total for 1924-25, about 1,460 million bushels, is practically the same as the four-year average 1920-24, which was abnormally low, but 115 million bushels less than in 1923-24. If full allowance could be made for changes in carryovers, the actual utilization of wheat in 1924-25 would probably be somewhat above the 1920-24 average, and the totals for the past two crop years would not be quite so far apart. If rye also were taken into account, the contrast with 1923-24 would be heightened, but the

bread-grain consumption in 1924-25 would still appear about as large as the 1920-24 average. If carryover data were available, it would probably be found that Europe's actual utilization of bread grains in 1924-25 was substantially less than in 1921-22, 1923-24, or the late pre-war period, but somewhat larger than the average of the four years 1920-24.

That European wheat consumption was as large as it was in 1924-25 must be attributed to the substantial gain in economic and financial strength that has been taking place in the past few years, as well as to the financial improvement which followed the effective adoption of the Dawes Plan in August 1924.

Early in February 1925 we suggested that the domestic utilization of this group of importing countries in 1924-25 would probably be from 1,457 to 1,527 million bushels.<sup>1</sup> According to present information, the apparent domestic utilization was very close to the bottom of the range of our advance estimate. While in Germany and perhaps one or two other countries prospective tariffs led to increased imports late in the crop year, the operation of economies in consumption and the favorable outlook for new crops very generally tended toward reducing to a minimum both imports and apparent domestic utilization. Had it not been for the development of exceptionally favorable European prospects for 1925 crops, apparent domestic utilization would presumably have fallen well within our range of estimate, as actual utilization undoubtedly did. Even so, it was abnormally low.

High prices led to economies in the use of wheat, both directly through decreased purchases of bread because of its high price and poorer quality, in favor of substitutes, notably potatoes and (in certain countries) maize, and also indirectly through the use of low-grade wheat for milling, higher rates of extraction in milling, and the admixture of diluents in flour. In the autumn of 1924 the potential bread yield of Europe's wheat and rye crops was generally underestimated. Heavy autumnal imports operated to conserve domestic supplies, protected the rural

districts from drainage, and gave governments the opportunity to increase the bread yield of wheat. Large imports in the autumn and late winter raised wheat stocks of city mills to a relatively high level, and placed Europe in a position to adapt imports in the last three months of the crop year to prospects for new domestic crops. With good crop prospects, imports and stocks were allowed to decline to low levels. The economies in consumption were cumulative, reaching their maximum in the second half of the crop year. On the whole, they proved larger than most observers had anticipated.

In 1924-25 Germany alone shows a conspicuous increase in apparent domestic utilization of wheat, to the highest figure since the war except in 1921-22. As we have noted, the contrast with earlier years is exaggerated by the incompleteness of import data in other post-war years; and the opposite contrast with the pre-war average is exaggerated by boundary changes and by the fact that post-war crops were probably underestimated, whereas pre-war crops were overestimated. The enlarged carryovers of imported grain doubtless swelled apparent consumption beyond the actual consumption. Granting all this, it remains that Germany used more wheat than usual, partly in consequence of improvements in economic conditions, but chiefly because wheat was extensively consumed in place of rye. The combined bread-grain consumption was probably well below normal.

Except in Germany, the decline in apparent domestic utilization of wheat from the level of 1923-24 was well-nigh universal in Europe. In certain countries, indeed, apparent consumption was below the average for the four preceding crop years. This was conspicuously true of Spain, and in lesser degree of France, Italy, Scandinavian countries, Switzerland, and Hungary. Austria, Jugo-Slavia, and Greece, however, showed the highest apparent consumption since the war, except in 1923-24; this is to be explained by an upward trend of production and by economic changes making for an upward trend in the use of wheat. In Bulgaria and Roumania the apparent consumption in 1924-25, while perhaps above the 1920-24 average, was notably small in view

<sup>1</sup> WHEAT STUDIES, February 1925, I, 93.

of similar upward trends in those countries. In the Baltic States, as in Germany, wheat utilization was above average because of the deficiency in rye. Great Britain and Holland are the only other countries to show larger apparent domestic utilization in 1924-25 than the average of the four preceding years, and the increase in both instances is slight.

#### PUBLIC POLICIES AFFECTING EUROPEAN CONSUMPTION

The shortage and high prices of bread grains led, especially in Europe, to the adoption of numerous policies affecting trade, consumption, and prices, as well as the conduct of the milling and baking industries. Some of these measures were calculated to restrict consumption, some to restrain increases in flour and bread prices, some to limit fluctuations in prices.

In France such measures were especially numerous. The law required a minimum extraction of 80 per cent for imported wheat and 78 per cent for domestic grain. In view of the light weight and low milling quality of native wheat, millers could not fully comply with the law, and it was imperfectly enforced. Furthermore, it was prescribed that the flour should contain an admixture of 8 per cent of wheat substitutes (from rye, rice, barley, or cassava). These regulations tended to reduce the wheat requirement for a given quantity of flour and bread, and poorer quality probably tended to restrict consumption. The use of millable wheats for animal feed was prohibited, and much low-grade wheat was used by millers to keep down their flour costs, while farmers were able to profit by selling this wheat and buying coarse grain for livestock. The act of December 12, 1924, which provided for the refund of duties on imported wheat converted to flour for domestic use, also abolished the turnover tax on dealings in cereals destined for bread-making. Departmental prefects were authorized to limit the price of flour, and local regulation of bread prices continued. Such restraints upon prices of flour and bread tended to prevent the larger restriction of consumption which still higher prices would have encouraged. The act of December 12, 1924, also

appropriated 150 million francs to be expended by the Ministry of War, if occasion required, for accumulating a reserve of grain and flour to be used in case of urgent need or to check speculative advances in prices. It is not evident that this *masse de manoeuvre* was actually used. In January a decree made provision for reporting stocks of wheat and flour on hand, for subjecting both trade and manufacture to government control, and even for requisitioning wheat and flour. The recession in prices after January rendered unnecessary the enforcement of extreme measures.

The Czecho-Slovakian government in January organized a consortium to purchase supplies of grain and flour in order to regulate the domestic market and prevent speculation; and merchants and millers were required to make reports of stocks on hand. It is not clear how far these measures were carried out and what was their actual significance. The turnover tax on imported wheat and flour was also suspended until late in the crop year.

Italy established regulations designed to secure the maximum extraction of flour, reduce waste in milling, and insure the full utilization of milling by-products. Provision was made for two kinds of bread, the one made from whole-wheat flour to be sold at cost, the other from ordinary flour to be sold at higher prices. Flour prices were subjected to control by provincial authorities.

In Spain the short crop of 1924, even with a fair carryover, was insufficient to cover domestic requirements, especially since bread prices were held down and the feeding of wheat to livestock was not restricted, as in France, and was even encouraged by price considerations. As wheat prices rose and increases in flour and bread prices were restrained, mill operations were at times severely reduced. Early in March 1925 the government undertook to fix maximum prices for wheat at the mills, to secure declarations of wheat stocks as of March 20, and even to commandeer 30 per cent of those stocks. This was a challenge to the agricultural interests, who had argued that stocks were ample and imports unnecessary. Late in April, however, the import prohibition had to be withdrawn, and sub-

stantial imports were made in the next three months.

Germany in October 1924 abolished restrictions upon bread weights and prices, and the rise in flour and bread prices operated to reduce consumption, especially in favor of potatoes, which were abundant. Flour made from imported grain was not subject to the turnover tax on the first sale. Substantial government stocks of grain were held until late in the crop year, but it is not clear how far, if at all, they were employed to moderate price fluctuations.

The city of Amsterdam bought flour and sold it to certain bakers at a loss in exchange for a guarantee of fixed and low bread prices; other bakers had stocked up on cheap flour, and until these stocks were depleted trade remained dull. In Vienna bread prices were restricted by forcing a large bakery, which had bought its flour early at moderate prices, to sell its bread at correspondingly low prices, although this policy forced into bankruptcy its chief competitor, a Socialist bakery.

Roumania, faced by acute shortage after over-exporting early in the crop year, adopted a series of more or less conflicting regulations which were only imperfectly enforced. The manufacture of flour was regulated, and an admixture of diluent flours required. Wheat, flour, and bread prices were fixed, and efforts were made to inventory stocks and subject them to requisition. The undue restriction of wheat prices interfered with the flow of wheat to the mills and made for heavier use on the farms.

#### CONSUMPTION BY EX-EUROPEAN IMPORTERS

Outside of Europe, as we have already noted, carryovers into 1924-25 were high; in the Pacific Orient, unusually high. Imports were apparently far below those of 1923-24, and somewhat lower than in other recent post-war years. Probably actual consumption was much lower than in 1923-24, but not especially low by comparison with less abnormal years.

Such broad conclusions rest, however, on very inadequate information concerning carryovers, crops, and imports. Our information on wheat supplies of ex-European countries is even less definite and verifiable

than our knowledge of European supplies. Even imports, a highly important variable, are not ascertainable. Broomhall's figures of shipments to Europe are invariably somewhat higher than the sum of the reported net imports of the individual countries. In the case of ex-European countries, however, the discrepancy is much more marked, and Broomhall's figures understate the actual imports by considerable amounts. Unfortunately, no serviceable check is possible. Not only are the import figures of the other countries less complete than those of European countries, but their publication is longer deferred. At this time, therefore, comments on the wheat imports of ex-European countries during the past year must be based on Broomhall's figures.

According to Broomhall, 75 million bushels of wheat were shipped during 1924-25 to importing countries outside of Europe. Corresponding shipments during the previous season were nearly twice as large—149 million bushels. In this heterogeneous group of importing countries are some, themselves not wheat producers, with high and relatively constant wheat requirements, such as the West Indies; others whose wheat requirements are relatively constant but whose domestic supplies are erratic and whose imports therefore are irregular, like certain South American countries; and, lastly, the Pacific Orient, which imports wheat and flour almost solely on a price basis. It is the fluctuation in shipments to countries in the third group that accounts for most of the variation in wheat shipments to ex-Europe.

Broomhall originally estimated ex-European requirements at 112 million bushels, and this was then regarded by the trade as conservative. Our original forecast, based partly on advices from the Orient, was 80-90 million bushels. The early autumnal transactions suggested that Oriental purchases of wheat and flour would decline heavily as prices rose. Broomhall reduced his forecast successively on November 18, March 3, and May 19—at last to 72 million bushels—and his final reported figure was 75 million. (See Appendix Table X.) The total net imports were undoubtedly somewhat higher, but probably not over 100 million bushels.

During the season import flour in Chinese coastal cities, though largely of low grade, followed in general the wheat price of the world; domestic flour remained at a lower relative level than imported flour. There are apparently no consistent relations between the prices of millet, rice, domestic wheat flour, and imported wheat flour in China. At the low prices of the previous year, apparently a new market was opened to imported wheat and flour; at the higher price last season, this market was no longer available. This explanation apparently fits the facts better than the assumption of a progressive relationship of substitution between wheat and the other cereals. So far as the West Indies and Central America were concerned, when one compares the prices of rice and maize with the price of wheat, there was little motive for these countries to decrease their consumption of wheat flour and make use of substitute cereals.

Broadly considered, the ex-Oriental fraction of ex-European wheat demand is relatively inelastic, the Oriental fraction is relatively elastic. This resulted in large shipments with the low prices of the season 1923-24 and in small shipments with the high prices of the year 1924-25. It is rather surprising that the trade should have disregarded, for the first half of the season, this natural reaction of the Orient to the rising wheat price of last year. Importers in China, however, were at no time under any misapprehension as to the outcome.

#### CONSUMPTION IN LEADING EXPORTING COUNTRIES

For the four leading exporting nations, it is possible to appraise more closely the domestic utilization of wheat, with some regard to carryovers. Appendix Table XX gives our present analysis covering the past three crop years, with figures still subject to revision.

In the case of Argentina, the exportable surplus as of August 1, 1925, may be calculated by adding to the official estimate of October 1 the exports of August and September. This gives a total of nearly 41 million bushels (29.9 + 10.7).<sup>1</sup> Allowing 18 million bushels for domestic consumption in

the last five months of the calendar year, we have a total carryover on August 1 of about 57 million bushels, a little lower than on August 1, 1924. Deducting reported exports and a seed allowance for the increased acreage sown, one reaches a figure of 47.3 million bushels for consumption, feed, and waste. This figure, somewhat lower than in either of the two preceding years, seems reasonable in view of the price and feed situation.

Australian consumption cannot yet be estimated with as close an approach to precision. Sir James Wilson has suggested a figure of 7 million quarters (56 million bushels) for total domestic use. This would indicate about 45½ million bushels for food, feed, and waste. Since in recent years the corresponding figure has been around 35 million bushels, this figure seems impossibly high. Broomhall estimated Australia's exportable surplus on August 1 as practically nil, and Sir James Wilson apparently accepted this view. Yet Broomhall has reported shipments of over 8 million bushels in the twelve weeks after August 1. Obviously these British experts overestimated Australian consumption and underestimated Australia's exportable surplus. In default of conclusive data, we are disposed to estimate consumption, feed, and waste at 37 million bushels, slightly higher than in the two preceding years in view of the large crop, and to estimate stocks on August 1 as 36 million bushels to provide for exports and consumption August-December, and a carryover on December 31.

In Canada the available statistics point to striking reductions in milling for domestic consumption, and in feed and waste. Neither figure, however, can be accepted at its face value. On the basis of preliminary milling statistics, it appears that wheat grindings less flour exports (in terms of wheat) amounted to only 36 million bushels as compared with final estimates of "milled for consumption" of 40.9 in 1922-23 and 41.5 in 1923-24. Possibly flour and

<sup>1</sup> This substantially agrees with Sir James Wilson's estimate of 5 million quarters. Broomhall's estimate was only 3 million quarters, though the higher figure is more nearly consistent with a July 1 estimate by Broomhall's Argentine correspondent.

bread consumption were somewhat reduced in 1924-25, but one can hardly credit so great a reduction. Rather it is necessary to assume, first that final milling figures will prove, as heretofore, considerably larger than preliminary ones,<sup>1</sup> and, second, that carryovers of flour were heavy in August 1924 and light in August 1925. Unquestionably, actual consumption was much greater than available statistics suggest. For the present we are disposed to consider 39 million bushels a conservative estimate of grindings for consumption.

If one accepts the latest official estimate of the crop of 1924, and even 36 million bushels for domestic milling, the feed and waste item reached by deduction would seem to be less than 12 million bushels, as compared with 47 million in 1922-23 and 34 million in 1923-24. In view of the recognized poor quality of much of the Canadian crop of 1924, as well as other factors, we are loth to accept this conclusion, especially since the Canadian Bureau of Statistics estimated last April 12 million bushels of unmerchantable grain and a loss in cleaning of 8 million bushels.<sup>2</sup> Apparently the crop was underestimated. On no other assumption is it possible to account for the volume of exports during the year and in August 1925 (18 million bushels). Tentatively accepting the Northwest Grain Dealers' Association estimate of the crop of the prairie provinces, 17 million bushels larger than the official, one reaches a figure of 25 million bushels for total feed and waste. This is possibly too high, in view of the small crop, rapid marketing, and high prices, but

<sup>1</sup> Compare the following figures, in thousand bushels, from Canadian official sources:

Wheat ground less flour exports:	1921-22	1922-23	1923-24	1924-25
Preliminary .....	34,077	32,621	38,444	36,067
Final .....	33,831	35,448	39,037	.....
"Milled for consumption" .....	37,000	40,865	41,520	.....

<sup>2</sup> *Monthly Bulletin of Agricultural Statistics*, April 1925, p. 101.

<sup>3</sup> In the year beginning September 1, 1923, dockage assessed on wheat at Minnesota markets had reached a record percentage of 5.3 per cent, over 7 million bushels. *Agriculture Yearbook, 1924*, p. 577.

<sup>4</sup> According to the monthly milling census, a barrel of flour required 4.63 bushels of wheat in 1923-24 and only 4.58 bushels in 1924-25, which meant a saving of 5 or 6 million bushels. This was not due to intentionally higher extraction or to efforts to stretch the wheat supply; rather it reflected the higher milling quality of the crop of 1924.

it seems distinctly more reasonable than the much smaller figure.

#### CONSUMPTION IN THE UNITED STATES

In the United States there was an increase in seed requirements, but a reduction both in milling consumption and in feed and waste. For the latter item, in default of satisfactory direct estimates, we have reached by a process of deduction a tentative figure of 65 million bushels as compared with 78 million in 1923-24. This probably understates the change between the two years. Perhaps as much as 15 million bushels of this consisted of dockage, which is eventually fed to animals; part of the rest was marketed as feed wheat; the bulk of the remainder was fed or lost on the farm harvesting the wheat. All of these fractions were probably reduced in 1924-25,<sup>3</sup> but the greatest reduction probably occurred in feed and waste on farms. There was less low-grade wheat; the crop was marketed early, with less chance for loss on farms; high prices attracted an exceptional proportion of the crop to market; and except for the shortage and high prices of corn, financial considerations dictated restriction in farm feeding of wheat.

Human consumption of wheat also apparently declined in the United States in 1924-25 appreciably, though not heavily. The crude figures suggest a reduction of 20 million bushels, but the actual reduction was probably somewhat less. Table 6 (p. 28) presents a method of calculation. Flour production declined by  $6\frac{1}{4}$  to  $6\frac{1}{2}$  million barrels, some 5 per cent. Net exports plus shipments to outlying possessions declined also, by 3.2 million barrels. Apparent domestic disappearance therefore declined by more than 3 million barrels. Russell's figures for flour stocks, by no means comprehensive, show a decrease of 100,000 barrels in 1923-24 and of 900,000 barrels in 1924-25. Adjusting apparent disappearance accordingly, one reaches the conclusion that flour disappearance declined by  $2\frac{1}{4}$  to  $2\frac{1}{2}$  million barrels, or a little over 2 per cent. In terms of wheat ground, this meant a reduction of 16 or 17 million bushels, partly because the flour yield of the crop of 1924 was higher than for the crop of 1923.<sup>4</sup> If one could

make allowance also for flour stocks not considered by Russell—in the hands of bakers, retailers, institutions, hotels and restaurants, and private households—the reduction in actual disappearance might well prove to be smaller still.

TABLE 6.—UNITED STATES FLOUR PRODUCTION AND DISAPPEARANCE, YEARS ENDING JUNE 30, 1924, 1925

(Million barrels)

	1923-24	1924-25
Production.....	126.4 <sup>a</sup> -130.1 <sup>b</sup>	120.1 <sup>a</sup> -123.6 <sup>b</sup>
Net exports.....	17.1	13.9
Shipments to possessions..	.6	.6
Apparent disappearance...	108.7-112.4	105.6-109.1
Change in flour stocks (Russell).....	-1	-9
Adjusted apparent disappearance.....	108.8-112.5	106.5-110.0
Equivalent in wheat (bushels) <sup>c</sup> .....	503.7-520.9	487.8-503.8

<sup>a</sup> Census figures adjusted upward for non-reporting mills, plus 2 per cent for custom mills and small merchant mills.

<sup>b</sup> Russell's estimates, including a supplement of 5 per cent.

<sup>c</sup> Converted at ratios reported by milling census, namely 4.63 for 1923-24 and 4.58 for 1924-25, although the rate of extraction probably averages lower on domestic flour than on export flour.

In view of the rise in flour and bread prices, some reduction in consumption was to have been expected. The rise in flour prices roughly paralleled the rise in wheat prices. Bread prices, however, rose much more slowly, and did not increase in a corresponding degree. For this there are several explanations. Bread prices are usually less unstable than flour prices, up or down. Among bakers' costs, flour figures to the extent of perhaps one-third to one-half of the total; costs of other materials, and production and delivery costs, as well as retailers' margins, do not vary with the price of flour and have probably not risen during the past year. Furthermore, in the years after 1920, when wheat and flour prices were declining, bread prices declined much less, and remained on a high level as compared with flour prices. This is a commonplace of the trade.<sup>1</sup> As the margin narrowed and profits were cut down, bakers came gradually to feel the desirability, then the necessity, of attempting to raise bread prices. The con-

suming public naturally but mildly resisted these efforts. Bakers with relatively low costs, some of them with large supplies of flour bought at low prices (part of it below costs of production), declined to join in price increases which were regarded as essential by bakers with higher production costs, preferring to reap smaller profits and to gain trade at the expense of their competitors. Though increases eventually became general, these competitive forces retarded and restricted the increases, and led to a great increase in the failures of small bakeries last spring. The tendency was presumably strengthened by the formation of important bakery mergers, which asserted their intention to stabilize bread prices and could ill afford to add to complaints against them by raising bread prices radically in early months of their existence.

A scrutiny of the monthly data on flour production shows that the decline in 1924-25 occurred entirely in the last five months of the crop year. Since the decline in exports of flour was heavier in the first seven months than in the last five, it is fair to say that the decline in milling output in the latter portion of the year was due primarily to reduced domestic purchases. Such a decline was not anticipated by millers. Judging from supposedly direct information as to stocks and current needs, they were generally convinced in January that retailers', bakers', and household stocks were low; they believed that buying was already on a hand-to-mouth basis, and that flour milling would remain for the rest of the year on a level comparable to that of the corresponding period of 1923-24. Contrary to their expectations, flour production declined by nearly 5 million barrels, and 3½ millions of this were not accounted for by reduced exports.

<sup>1</sup> To quote "The American Baker" section of the *Northwestern Miller* for January 28, 1925: "For three full years the baking industry has enjoyed an enormous unearned increment in its profits. In all that period the retail price of bread fluctuated hardly at all, while the cost of materials went steadily down until last summer. No wonder it seemed that commercial baking was an inexhaustible gold mine, to be exploited indefinitely. Now, however, the whole situation has changed, and the margin, once wide, between selling prices and production costs is being wiped out by the extraordinary advance in wheat."

Only two alternative explanations can be seriously considered: reduction of stocks, or reduction of consumption. Is there evidence that the American public reduced its consumption of flour  $3\frac{1}{2}$  million barrels in five months in response to higher prices? There is no evidence that hotels and other public eating-places served smaller or fewer portions of wheaten products. One searches in vain for evidence of a buyers' strike against the price of bread or of flour. Of the widespread agitation against the high price of flour and bread that was observed over Europe last year, nothing was evident in the United States. Even politicians, inclined to seize upon instances of public discontent, paid only casual attention to the prices of flour and bread. There is no evidence of extensive resort to substitute foods. Potatoes, indeed, were unusually cheap; but the prices of corn meal, rye flour, rice, and oatmeal were not relatively low compared with wheat flour during this time, and we have no indications of increased production or distribution of those cereals. There was little in the level of wages or employment during this time to suggest any particular urge to economy.

Two factors, however, chiefly explain the moderate reduction which took place. At

the higher level of flour prices, many bakers reduced somewhat the amount of flour baked into the loaf of bread, the dozen of rolls, the pies and pastries which they sold. In this way consumers ate less without realizing it. Consumption was restricted at the instance of the manufacturer, who sought to economize in the use of a raw material that had become much more expensive.

In the second place, there may have been adaptation in reserves. Stocks may have been higher on February 1 than appraised by the trade; buying was probably not really down to a hand-to-mouth level, as was commonly assumed. If this adaptation in reserves occurred in distributive channels or in the flour bins of consumers, it will presumably be confirmed, to some extent at least, by replacement purchases before the close of 1925. The situation emphasizes the desirability of assembling much more comprehensive data on flour stocks. In a country like the United States, with a high standard of diet and a low intake of bread compared with most Caucasian countries, with widespread prosperity, one must be cautious in attributing to changes in ingestion variations in disappearance that might be due to changes in stocks.

## VI. STOCKS AND CARRYOVERS

### THE GENERAL POSITION

The broad facts concerning inward and outward carryovers have already been mentioned, and require only a brief summary at this point. The crop year opened with exceptionally large carryovers of wheat and flour. This was notably true in exporting countries, in consequence of the huge crops of 1923, the low prices which prevailed in the crop year 1923-24, and easy credit conditions in the leading exporting countries. In Europe carryovers into 1924-25 were probably somewhat above average, chiefly as a result of the large crops of 1923 and heavy imports toward the close of the year 1923-24; but heavy consumption, the general tightness of credit, and the availability of grain in exporting countries com-

bined to prevent the initial carryover from reaching huge proportions. In Oriental markets wheat and flour stocks were exceptionally high in July 1924, as a result of heavy purchases (partly speculative) at the low prices of 1923-24.

At the close of the crop year, however, stocks were unusually, though not, on the whole, dangerously low. In leading exporting countries, except Argentina, they were below average and considerably below the high levels of the preceding year. The cases of the United States and Canada are discussed below. In Argentina, as we have already noted, the exportable surplus on August 1 was around 40 million bushels, and total stocks were probably about 57 million bushels, little lower than on August 1, 1924. Australia's exportable surplus



on August 1 was considerably underestimated by British experts, and total stocks, as we have suggested, were probably around 36 million bushels, as compared with 41 million bushels on August 1, 1924, and 45 million on August 1, 1923. (See above, p. 26, and Appendix Table XX.) In the exporting countries of the Danube basin they were exceptionally depleted. The Russian carryover of cereals is understood to have been exceedingly small. In European importing countries they were generally light, though in Germany, and perhaps in Czecho-Slovakia and Italy as well, heavy imports made in anticipation of tariff duties caused appreciable stocking up of imported grain. In the absence of adequate information it is reasonable to infer that stocks of wheat and flour in importing countries outside of Europe were also low at the close of the year.

The general depletion of stocks was due in part to the shortage of the 1924 crops, which were inadequate to furnish normal supplies for the year. Unquestionably the depletion was greater because, with good crops in prompt prospect in Europe, Russia, and Canada, stocks could safely be permitted to run down, and there were reasonable expectations, at least in Canada, Europe, and Russia, that new crop wheat would generally sell below the prices prevailing even toward the end of the crop year 1924-25. As the event proved, European importers appraised the situation correctly.

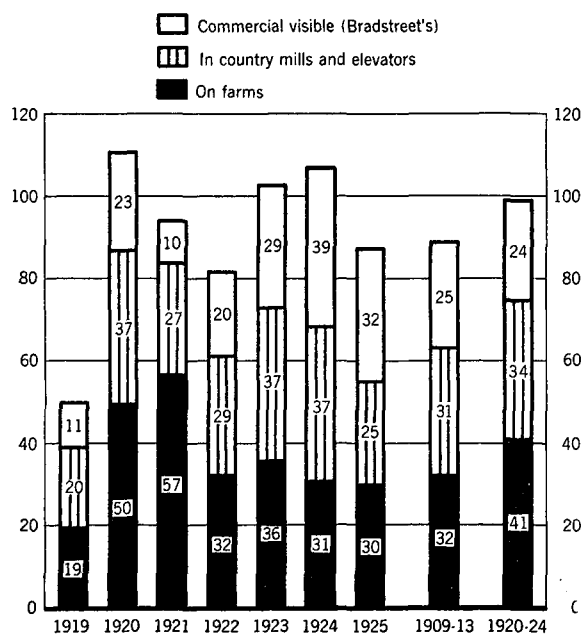
#### NORTH AMERICAN STOCKS

Statistical measures of carryovers are few and imperfect. Apart from statistics of visible supplies and the recent census estimates of stocks of city mills in the United States, the only data of importance are the Department of Agriculture estimates for wheat stocks and Russell's estimates for flour stocks in the United States, and Dominion Bureau of Statistics estimates for Canada.

Chart 8 shows graphically the relative size of wheat stocks in the United States on July 1, for the years 1919 to 1925, compared with pre-war and post-war averages, according to the Department of Agriculture

estimates. It must be emphasized that these give only an incomplete picture of carryovers. The commercial visible item is certainly not comprehensive. Wheat stocks of city mills, which on July 1, 1925, included roughly 30 million bushels of wheat not included in the visible or in country mills

CHART 8.—WHEAT STOCKS IN THE UNITED STATES, JULY 1, 1919-25, WITH PRE-WAR AND POST-WAR AVERAGES\*  
(Million bushels)



\* Data of U.S. Department of Agriculture. For 1909-13, read 1910-14.

and elevators, are not counted. Flour stocks are not included. Those of city mills were estimated on June 30, 1925, as the equivalent of 17½ million bushels of wheat.<sup>1</sup> Russell's incomplete estimate of flour stocks in trade positions—the most comprehensive, but still incomplete—was the equivalent of 27 million bushels on July 1, 1925, as compared with 31 million a year earlier. The aggregate stocks of wheat and flour in all positions on July 1, 1925, may well have been as high as 150 million bushels.

Unquestionably the corresponding figure on July 1, 1924, was much larger, but how much larger it is impossible to suggest, par-

<sup>1</sup> See WHEAT STUDIES, September 1925, I, 341.

ticularly since the large and variable item of city mill stocks has been hitherto an unknown quantity. It cannot be assumed that "invisible" or hitherto uncounted stocks vary directly with the visible, with country mill and elevator holdings, with stocks on farms, or with their aggregate. Indeed it is quite probable that the reduction in "invisible" or unreported stocks in 1924-25 was relatively greater than the reduction in reported stocks. We had not exported wheat heavily during the crop year 1923-24, and that year was the culmination of several years of low prices. At its close the rise in prices already under way had not progressed sufficiently to lead to heavy sales for profit on holdings of cash grain. The position of the futures prices for May and July 1924 was such as to favor holding by mills. The season 1924-25, on the other hand, was one of heavy wheat exports, naturally tending to drain reserves. Prices declined in June, and holders of cash grain could see in the crop outlook no special reason for holding, since poor prospects in the winter-wheat belt were balanced by good prospects in the spring-wheat belt. The relation of the May and July futures did not favor holding by mills in 1925. The reserves reported by mills on July 1, 1925, do not seem large when considered in the light of the volume of business, since they represented in the form of raw material and finished product something like a month's operations.

According to the trade, flour business was on a hand-to-mouth basis in the spring and early summer of 1925. This was not the case the year before, when prices were low and credit especially easy, and gradually advancing prices operated against hand-to-mouth buying. The grindings in the period March-June, 1924, were approximately 30 million bushels more than in the corresponding period of 1925.<sup>1</sup> The flour representing this wheat must have been in mill or distributive channels. A review of trade opinion supports the inference that stocks held by bakers, wholesalers, and retailers were at a notably higher level on July 1, 1924, than on July 1, 1925.

<sup>1</sup> See WHEAT STUDIES, August 1925, I, 325.

<sup>2</sup> *Ibid.*, April 1925, I, 158.

All things considered, it is clear that the reduction in carryover was considerably greater than available comparative figures suggest, certainly in absolute amount and possibly relatively also.

Taking the Department of Agriculture figures as they stand, the recent total of 87 million bushels may be compared with a 1910-14 average of 89 million, a 1920-24 average of 99 million, and a figure for July 1, 1924, of 106 million. Stocks on farms were not much below common figures; the post-war average is raised by the high figures for 1920 and 1921. Stocks in country mills and elevators were exceptionally low, at 25 millions, as compared with 37 millions on July 1, 1924. Visible supplies, however, were relatively high—32 millions as compared with pre-war and post-war averages of 25 and 24, respectively. The divergence among these figures emphasizes the danger of inferring total stocks from statistics of visible supplies.

The figures given, however, reflect a substantially larger carryover than grain trade experts expected during the spring and had estimated as late as July 1. Since December 1, 1924, stocks on farms had been regarded as low, and the Department of Agriculture's estimate as of March 1, 1925, showed country stocks far below the corresponding figures for earlier post-war years, and only 21 per cent of the preceding crop as compared with a 1920-24 average of 31 per cent.<sup>2</sup> The carryover was as high as it was because of the failure of exports to reach a maximum, because the winter-wheat crop promised poorly, and because "invisible" stocks were sufficient to admit of considerable reduction. Possibly also the 1924 crop or country reserves on July 1, 1924, or both, were underestimated. The very large proportion of wheat marketed during the year, amounting to 58 per cent of the estimated crop as compared with a 1920-24 average of 47 per cent, lends color to the view that 1924-25 supplies were larger than official estimates suggest.

The Canadian carryover cannot readily be compared with corresponding figures for earlier years, because this year's estimate is for August 1 instead of September 1. The official estimate for August 1, 1925, is

24.2 million bushels, as compared with a high figure of 41.1 million bushels for August 1, 1924. Since stocks are normally heavier in Canada on August 1 than on September 1, it is not surprising that this year's total for August 1 is higher than September 1 figures for other years than 1924. (See Appendix Table XXI.) It is significant that wheat stocks in transit and in flour mills are estimated as lower on August 1, 1925, than even on September 1 in certain recent years, and that only the stocks in elevators were larger on August 1, 1925, than on September 1, 1924. Yet the exceptionally heavy Canadian exports in August 1925, which are reported as 18 million bushels, a record for this month, indicate clearly that the carryover of old wheat was by no means small.

#### EUROPEAN CARRYOVERS OUT

During June and July, 1925, European stocks were supposed to be near to rock-bottom, and the wheat and flour trade to be operating from hand to mouth. Developments since August 1, however, strongly suggest that stocks of importing countries, at least, were by no means so low as was currently believed. Expectations of an early movement of domestic grain to the mills were disappointed by wet weather at harvest time. For a time, therefore, millers found themselves short of grain, and there was a notable spread between mill prices for immediate and for deferred delivery. Nevertheless, European imports continued on a low level, and wheat afloat for Europe declined to new low levels. As late as September 19 it was only 22 million bushels. Evidently Europe was able to adjust herself to delayed harvests without increase of imports and with little internal disturbance.

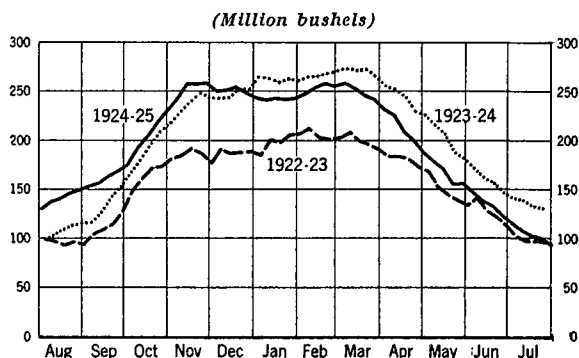
When one considers the situation in individual countries, the general position is clarified. Italy imported heavily in the spring, her large new crop arrived on time and in good condition for milling. French reserves at the close of the year were not especially low, and the early North African crop eased her situation. Germany and Czecho-Slovakia had imported heavily in anticipation of tariff changes. Through the far-flung operations of her grain merchants,

the United Kingdom is always in position to make rapid adjustments in supplies. It is clear that European wheat stocks on the first of August were low, though not dangerously low; in fact, the position was such that, given good prospects and a strong price motive, the importing countries were in a position to prevent repetition of the hurried and exaggerated imports of a year ago. The losses suffered in Europe in the spring in consequence of the decline of prices have had a salutary effect upon the trade, and we may expect imports and mill demands to remain closer together than was the case last year.

#### CHANGES IN VISIBLE SUPPLIES

The reports of visible supplies afford the only data from which to follow, very imperfectly, indeed, the changing course of stocks during the year. The best data for comparison refer to visible supplies in the United States, Canada, Great Britain, and afloat for Europe. The trade uses these data in appraising (among other things) European demands, the exportable supplies of surplus countries, the rate of movement, and the prospective carryover in surplus countries.

CHART 9.—COMBINED VISIBLE WHEAT SUPPLIES IN UNITED STATES, CANADA, AND UNITED KINGDOM AND AFLOAT, WEEKLY, CROP YEARS 1922-25\*



\* Data from *Bradstreet's, Canadian Grain Statistics*, and *Broomhall's Corn Trade News*, respectively.

Chart 9 presents the total of these groups weekly for each of the past three crop years, using *Bradstreet's* data for the United States, Canadian official statistics, and *Broomhall's* compilation for the United

Kingdom and afloat. Chart 10 shows the course of each of these three groups weekly during 1924-25.

Chart 9 illustrates the marked seasonal variation in visible supplies which is characteristic of the three years. They are at a minimum in July or August, rise rapidly from September to November, reach their maximum usually in February or March, and decline fairly steadily from March through July.

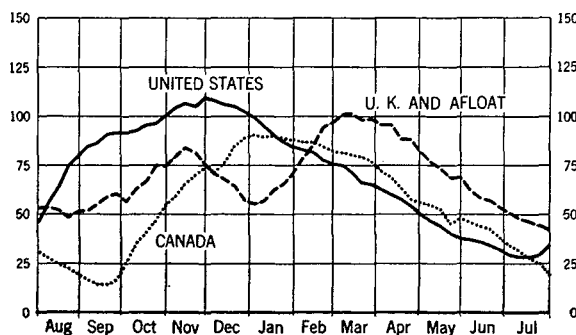
Visible supplies were of fair size in 1922-23, as a comparison over a longer period would show clearly. In 1923-24, especially after the heavy movement of the large Canadian crop, they ran far above the levels of 1922-23. In the fall of 1924-25, because of the rapid marketing of the United States crop, the records of 1923-24 were eclipsed. After mid-December, however, as the rate of marketing declined and exports continued, visibles fell below the corresponding figures in 1923-24, and at the close of the year they had dropped to less than 100 million bushels, a little below the corresponding figures for 1922 and 1923. The rate of decline from March onward was more rapid in 1924-25 than in either of the two preceding years.

The increase in visible supplies in the autumn of 1924, shown in Chart 10, was due first to the rapid increase in the United States, where the maximum was reached about December 1, and second to the increase in Canadian visibles, which reached their maximum about January 1. Thereafter mill consumption and exports exceeded movements from the country, and North American visible supplies continued to decline until new-crop wheat appeared.

As American shipments got under way in the autumn, stocks afloat and in Great Britain rose rapidly, but after mid-November they declined in consequence of the marked reduction in international shipments. When in January, however, Argentine and Australian shipments got under way, stocks afloat and in Great Britain rose rapidly to a high point early in March. Floating stocks were especially heavy during these months because the large Australian shipments required a long ocean haul and remained in the visible afloat much

longer than shipments of other exporters. At one time in March, stocks on ocean passage reached the record figure of 91 million bushels, and for several consecutive weeks they were over 80 million bushels.

CHART 10.—VISIBLE WHEAT SUPPLIES IN UNITED STATES, CANADA, AND UNITED KINGDOM AND AFLOAT, WEEKLY, 1924-25\*  
(Million bushels)



\* Sources as for Chart 9.

Again following the continuous decline in shipments, British and floating stocks shrank rapidly till the close of the crop year. On August 1 they were lower than at any corresponding date since the war. Stocks afloat fell still lower in the next few weeks, down to nearly 22 million bushels on September 19, the lowest point since the war.

Table 7 summarizes the principal items in world visible supplies of wheat and flour

TABLE 7.—SUMMARY OF PRINCIPAL ITEMS IN WORLD VISIBLE SUPPLIES\*  
(Million bushels)

August 1	United States	Canada	U. K. and afloat	Total
1920.....	42.7	8.2	89.0	139.9
1921.....	56.2	8.9	65.5	130.7
1922.....	43.1	19.3	56.0	118.5
1923.....	73.3	14.1	47.2	134.5
1924.....	72.1	31.6	51.7	155.4
1925.....	57.3	23.4	42.5	123.2
Average				
1910-14.....	58.8	10.8	50.6	119.1
1920-24.....	57.5	16.4	61.8	135.7

\* See Appendix Table XXII.

on August 1 given in more detail in Appendix Table XXII. This table, a more comprehensive tabulation than is available

weekly, shows the relative size of various elements in the recent carryover in comparison with corresponding figures for earlier years. It will be observed that the recent total, while 32 million bushels less than on August 1, 1924, and the lowest in the past six years except in 1922, was slightly above the pre-war average and only about 9 per cent below the 1920-24 average. United States visibles were about average. Canadian visibles, though materially lower than in 1924, were distinctly above average—indeed exceedingly high in view of the small crop and relatively large exports. Only visibles in Great Britain and afloat were distinctly smaller than the pre-war and 1920-24 averages. Argentine visibles, always a small item, were much larger this year than in any recent year, in consequence of retarded marketing in the spring months; the reverse was true of Australia, where, in consequence of heavy exporting,

visible supplies were lower than in any recent year except 1922.

At several periods in 1924-25 visible supplies were the subject of great interest, and they undoubtedly exerted a considerable influence on the market. The high figures early in the crop year probably retarded the advance in prices. The sharp cessation of the upward movement in November and the decline in North American visibles from January 1 was a strong bullish influence in the upward surge of prices in December and January. The high level reached by stocks afloat in March was a potent influence in the price reaction of February and March. The severe decline in visible supplies in the late spring strengthened expectations of revived demand from importers and contributed to the price recovery of April-May, and may have prevented a greater decline in prices as crop prospects improved.

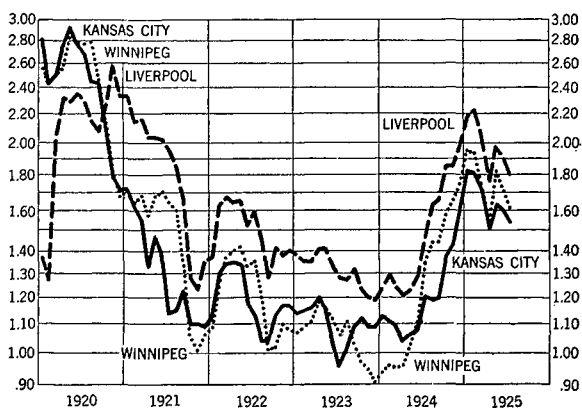
## VII. WHEAT PRICE MOVEMENTS

On the basis of the foregoing discussion, we are in a position to interpret the striking change in the level of prices which took place in 1924-25, and the course of prices during the year.

A broad view of the course of prices since January 1920 is shown graphically in Chart 11, by monthly average cash prices

CHART 11.—AVERAGE CASH PRICES OF REPRESENTATIVE WHEATS, MONTHLY, 1920-25\*

(U.S. cents per bushel; logarithmic vertical scale)



\* For sources, see Appendix Table XXIV.

for three leading grades in as many leading markets. Here the impressive change from

the spring of 1924 to the summer of 1925 is shown against the background of lesser movements in the preceding three years and the very different but equally startling changes of 1920-21. In Appendix Table XXIV monthly average cash prices for a larger number of grades are given from April 1924 through July 1925. Attention may well be concentrated, in the first place, upon the shifts in the level of wheat prices. The course of the movement during the crop year 1924-25 can best be considered in connection with charts of daily and weekly data.

### THE LEVEL OF WHEAT PRICES

The post-war decline reached its lowest point in 1923-24—very early in that crop year in the United States, about December 1923 in other leading wheat markets. As late as April 1924 wheat prices were not far above the low points of the crop year 1923-24. Between April 1924 and the end of January 1925 prices of Canadian wheat in Winnipeg and Liverpool rose by over a dollar a bushel, prices of typical grades in leading American markets rose by more than 80 cents a bushel, and Liverpool prices of

wheats other than Canadian rose by about 90 cents a bushel. Such radical changes in the price level have rarely occurred, except under war conditions or deflation, as for example in 1920-21. Comparable price advances in the past thirty years have occurred only in 1897-98, 1914-15, and 1916-17; and war emergencies were a powerful factor in two of these instances.

The prices late in January 1925 were much above the level characteristic of the crop year. If, however, we compare the ten-months' average from October 1924 to July 1925 with the ten-months' average from August 1923 to May 1924, the contrast between the levels characteristic of the two crop years is sufficiently striking. Table 8 gives this comparison. Broadly speaking,

TABLE 8.—WHEAT PRICES, 1923-24 AND 1924-25\*  
(U.S. dollars per bushel)

	Last week in		Aug.-May average 1923-24	Oct.-July average 1924-25
	April 1924	January 1925		
<i>United States:</i>				
Farm price.....	.97 <sup>a</sup>	1.70 <sup>a</sup>	.93 <sup>b</sup>	1.42 <sup>b</sup>
No. 2 Hard, Kansas City.....	1.06	1.91	1.07 <sup>b</sup>	1.55 <sup>b</sup>
No. 2 Red, St. Louis	1.13	2.19	1.10 <sup>b</sup>	1.69 <sup>b</sup>
No. 1 Dark Northern, Minneapolis	1.28	2.07	1.23 <sup>b</sup>	1.68 <sup>b</sup>
<i>Winnipeg, Canada:</i>				
No. 1 Manitoba....	.98	2.14	.98	1.73
No. 3 Manitoba....	.90	2.02	.91	1.63
<i>Buenos Aires, Argentina:</i>				
Barletta.....	.99	2.02	1.04	1.70
<i>Liverpool, England:</i>				
No. 1 Manitoba....	1.21	2.34	1.24	1.96
Argentine Rosafé..	1.19	2.14	1.19	1.86
Australian.....	1.28	2.13	1.26	1.85

\* For sources, see Appendix Table XXIV.

<sup>a</sup> Fifteenth of month following. <sup>b</sup> Weighted average.

one may say that the characteristic level of wheat prices was roughly 75 per cent higher in Canada, 65 per cent higher in Argentina, 50 per cent higher in the United States, and 50 per cent higher in Liverpool in 1924-25 than in 1923-24. (See also below, pp. 45 f.)

The major explanation for the noteworthy rise is found in the supply situation. For three years prior to 1924-25 supplies of wheat had been increasingly excessive. The margin between world supplies and world requirements had widened; stocks

had tended upward; a buyer's market obtained. The short crops of 1924, notably in Canada and Europe but consequently for the world as a whole, brought a sharp reversal in these conditions. The margin between supplies and requirements was narrow; heavy drafts were made upon stocks; a seller's market obtained. The wheat shortage was reinforced, directly by an even more serious shortage in rye, and indirectly by the shortage in the American corn crop.

A secondary influence in the same direction was the improvement in European purchasing power, which led to an increase in Europe's effective demand for wheat. In 1923-24 Europe imported heavily because prices were low; in 1924-25 Europe imported heavily in spite of high prices. The strength of Europe's demand for wheat is not indicated by the volume of her imports, but by the volume and price of imports. In 1922 European crops were about as large as in 1924, but in 1924-25, chiefly because of her financial and economic advance, Europe's demand for wheat was notably stronger than in 1922-23; her imports were larger, and they were purchased at materially higher prices.

The shift in Canadian prices was greatest, chiefly because the huge crop of 1923 had caused Canadian wheat to fall to exceptional discounts, quality considered, while the short crop of 1924 forced it to a premium. In the former year the quantity was far more than sufficient to supply millers who prefer that wheat, and it had to compete with other wheats on a price basis. In 1924-25, however, the exportable supplies were inadequate to meet the requirements of millers who prefer Canadian wheat; hence it commonly sold in Europe at substantial premiums (grade for grade) over other wheats. This difference was reflected back to Canada. (See also below, pp. 45 ff.)

The rise was least in American hard wheats because, during much of 1923-24, as a result of a shortage of millable grades of these wheats, they had sold on a domestic basis, i.e., at prices above Liverpool prices less cost of transportation. The soft red winter wheat crop, however, was much smaller in 1924 than in 1923, and sold at

substantial premiums over hard winter and hard spring wheats. Much the same was true of Pacific white wheats, so far as they were competitive. Indeed, exports of soft wheats were the smallest in many years. (See Appendix Table XVII.) Table 9 emphasizes this contrast. No. 2 Red Winter in St. Louis averaged 52 cents higher than in 1923-24, but No. 2 Hard in Kansas City only 30 cents, and No. 1 Dark Northern in Minneapolis only 34 cents, higher than in 1923-24. The weighted average farm price reached in 1923-24 the low figure of 93.2 cents per bushel, not far above the pre-war average; in 1924-25 the corresponding average was about \$1.31.

TABLE 9.—WEIGHTED AVERAGE WHEAT PRICES IN THE UNITED STATES\*  
(Dollars per bushel)

Crop year July-June	Farm price	No. 2 Red St. Louis	No. 2 Hard Kansas City	No. 1 Dark Northern Minneapolis
1919-20.....	2.22	2.30	2.42	3.00
1920-21.....	1.82	2.13	1.83	2.01
1921-22.....	1.03	1.27	1.20	1.48
1922-23.....	.99	1.21	1.13	1.26
1923-24.....	.93	1.07	1.05	1.24
1924-25.....	1.31 <sup>a</sup>	1.59	1.35	1.58
Average 1909-14.....	.89	1.00	.95	.99 <sup>b</sup>

\* *Agriculture Yearbook, 1924*, pp. 581 ff., and *Crops and Markets, Monthly Supplement*, August 1925, p. 276.

<sup>a</sup> Provisional approximation by Food Research Institute.  
<sup>b</sup> No. 1 Northern, which commonly sells from 3 to 5 per cent under No. 1 Dark Northern. The latter was not quoted prior to August 1, 1917.

The purchasing power of wheat over commodities in general, which in 1923-24 in most countries had fallen to 70 per cent (or less) of its pre-war purchasing power, rose in 1924-25 to something like the five-year pre-war average.<sup>1</sup> The recovery in purchasing power is striking; but on reflection it is quite as impressive to observe that in a year of notable shortage of bread grains the purchasing power of wheat should have risen no higher. While averages for the entire year somewhat understate the change from 1923-24 and the level characteristic of

1924-25, the deficiency in wheat supplies did not cause its purchasing power to exceed the pre-war average to any large degree. The assumption, so frequently made, that the normal purchasing power of wheat today is the same as its average purchasing power before the war, is not supported by this evidence; rather it suggests the possibility that the post-war "normal" may be lower than the pre-war.

#### THE COURSE OF PRICES

The course of wheat prices during the year is best shown by charts of daily prices of representative cash wheats and by daily prices of wheat futures in the principal futures markets. Four examples are given here. Charts 12 and 13, which furnish the principal basis for the following discussion, show daily cash prices of No. 2 Hard Winter in Kansas City and of No. 1 Northern Manitoba in Winnipeg, for the two years ending July 31, 1925. Charts 14 and 15, showing daily quotations for wheat futures in Liverpool and Buenos Aires in 1924-25, afford supplementary information.

One observes at the outset the much higher level and much greater fluctuations in 1924-25 than in 1923-24. Closer observation shows that the Winnipeg price was lower than the Kansas City price through most of 1923-24, except at the beginning and end; in 1924-25 the Winnipeg price was distinctly higher than the Kansas City price. The impressive rise in the Winnipeg price in June and July 1924, much greater than in Kansas City, represents chiefly the special readjustment in the Winnipeg price necessitated by the shift from a huge crop to a short crop. These points, however, have already been sufficiently discussed. Here attention should be directed to the short-time movements of two or more weeks in duration.

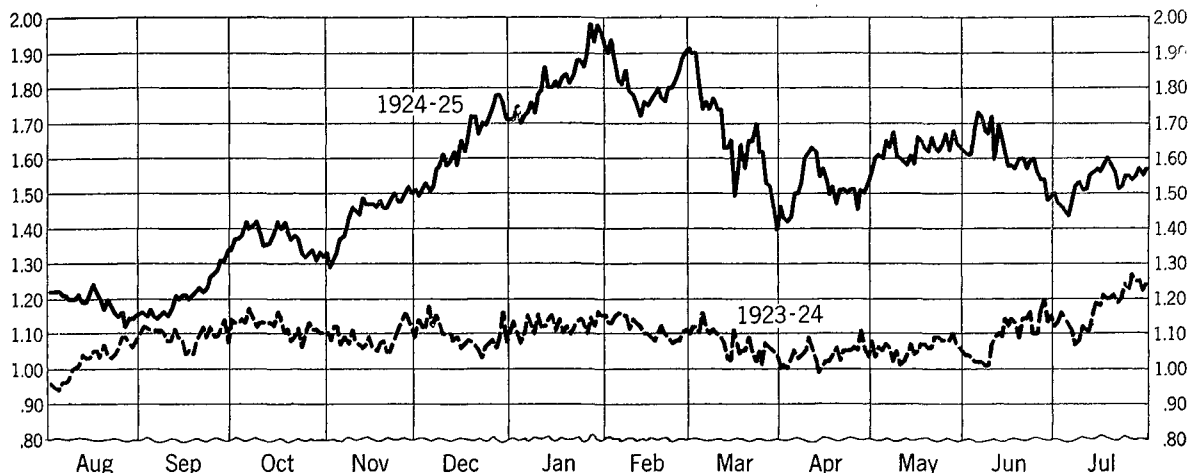
It will be noted that in general the two curves run parallel in 1924-25. They show the same trends, simultaneous peaks and troughs. Throughout the period both wheats were selling for export as well as for domestic use, and their prices were related through their competition in export markets, notably Liverpool. The only signifi-

<sup>1</sup> See WHEAT STUDIES, December 1924, I, 4, Table 2. Corresponding figures for 1924-25 are as follows: United States, 100; Canada, 108; England, 96; Germany, 85; France, 74; Italy, 99. The low figures in England, Germany, and France are due in part to the low quality of their domestic wheats in 1924-25.

cant exception occurred in the second half of May 1925, when Winnipeg prices rose abruptly, to decline even more abruptly at the close of the month, while Kansas City

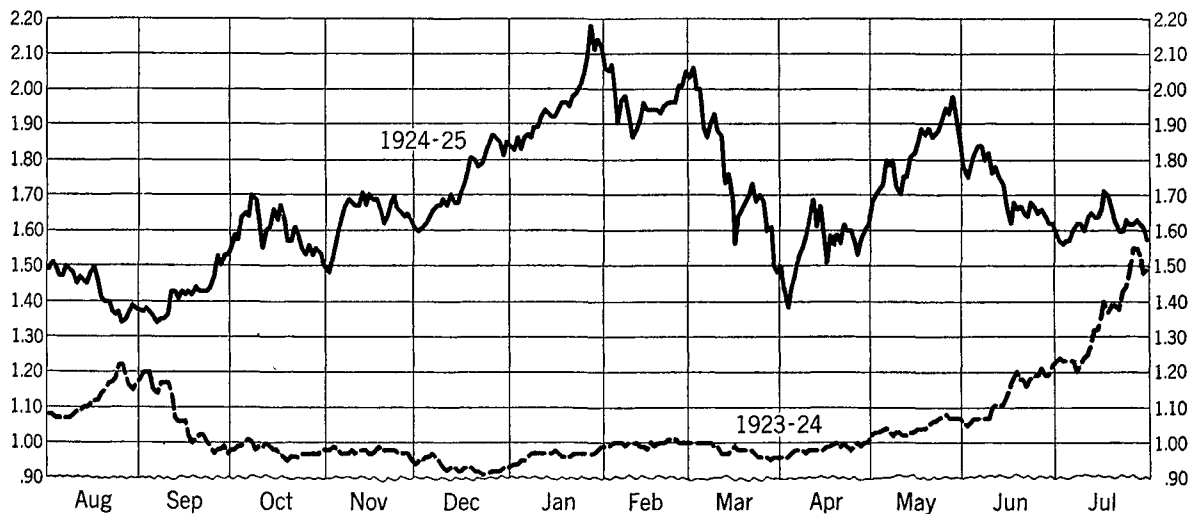
two cash prices was relatively wide in the autumn of 1924, when American grain was moving to market in huge quantities. The margin was somewhat less during the pe-

CHART 12.—AVERAGE DAILY CASH PRICES OF NO. 2 HARD WINTER AT KANSAS CITY 1923-24, 1924-25\*  
(Dollars per bushel)



\* Data of U.S. Department of Agriculture.

CHART 13.—AVERAGE DAILY CASH PRICES OF NO. 1 NORTHERN MANITOBA AT WINNIPEG, 1923-24, 1924-25\*  
(Dollars per bushel)



\* Compiled from *Grain Trade News*, Winnipeg.

prices changed but little. This divergence was due to speculative operations in Winnipeg, where an extensive short interest was evidently "squeezed," i.e., forced to pay high prices for cash wheat to deliver on maturing options. The margin between the

riod when navigation on the Great Lakes was closed, for this seasonal influence normally tends to depress prices in Winnipeg as compared with other markets. The margin was narrowest at the close of this period, in late March and early April, when

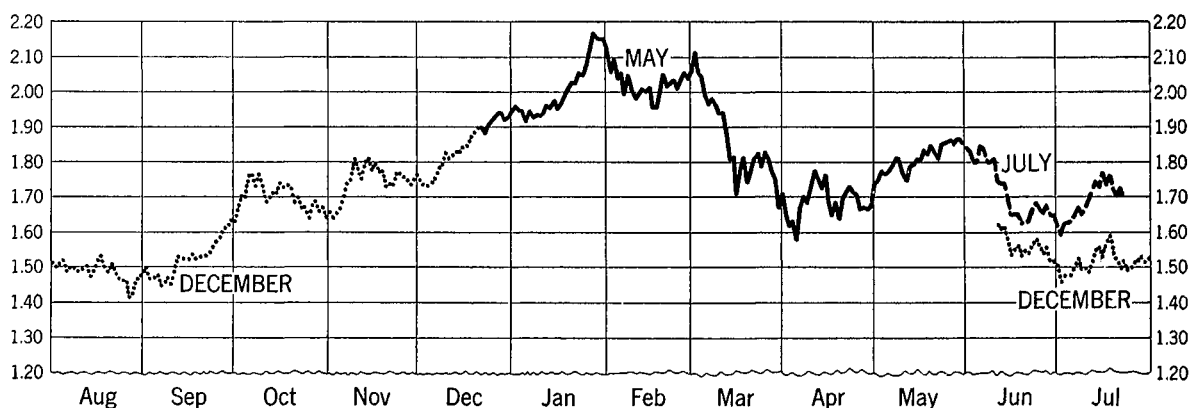


occasionally Winnipeg prices fell below Kansas City prices. At this time both cash markets were profoundly influenced by the bear speculation and the liquidation of speculative holdings. The special decline in Winnipeg prices reflects extreme speculative pressure, which was so great in Canada as to lead (by inference) to a conviction in certain quarters that a drive was being made to kill the wheat pools. Disregarding these divergences, the two curves may be considered together as reflecting the course of wheat prices during the year.

January, so large a proportion of the crop had already been marketed that comparatively small amounts remained, and even these were underestimated by those who accepted the low estimate of the Canadian crop and failed to anticipate the unusual proportion that was actually shipped to market in both countries.

Two significant interruptions in the advance will be remarked. In August 1924 prices receded. Two factors chiefly account for this. First, the American official crop estimate as of August 1 raised the figure 74

CHART 14.—DAILY CLOSING PRICES OF WHEAT FUTURES AT LIVERPOOL, 1924-25\*  
(Expressed in dollars per bushel)



\* Compiled from Russell's Market News, Minneapolis Daily Market Record, and Chicago Daily Trade Bulletin.

The movement falls into three major phases—a rise to the end of January, a decline until early in April, and a succession of less significant fluctuations in the last four months of the crop year.

The long advance, really initiated as early as May and June 1924, represents chiefly the slow adjustment of price levels from a period of surplus to a year of shortage. But, toward the end, an exaggerated view of the extent and significance of the shortage gave rise to rampant speculation affecting cash prices as well as futures. Had the situation been correctly appraised by farmers, grain dealers, millers, and speculators, the rise would have been much more rapid, but prices might not have risen nearly as far. The unusually rapid marketing by American farmers, and to a lesser degree by the Canadian also, probably retarded considerably the inevitable advance in prices. Later, in December and

million bushels above the July 1 forecast. Secondly, August was the month of heaviest marketings in the United States, with a record volume of 93 million bushels. Only the strength of underlying bullish forces, evidenced by heavy export and domestic buying, prevented drastic price recessions. From early in September until early October, despite further substantial increases in estimates of the American crop, prices rose rapidly. At this time some European buyers became panicky in their purchases, for a wet harvest delayed the movement of domestic grain to the mills and caused both reduction in quantity and deterioration in quality.

The October recession in prices, while by no means severe in North America, was a notable interruption in the course of upward readjustment. It was chiefly a consequence of temporary reductions in European purchases, and a partial reflection of

price recessions in European importing markets. The weather improved; as threshing progressed, the outturns failed to confirm the worst fears as to quality and quantity; and native grain came to market in large quantities. Meanwhile, heavy shipments from America reached Europe, milling demands for imported wheat fell off, ports were congested, and there was considerable reselling of imported cargoes at a loss.

Even before this crisis was over, prices in export markets resumed their advance. In the first few days of November prices rose by some 20 cents a bushel. One factor in this rise was the reduction by 20 million bushels in the estimate of the Canadian crop. Another was the sharp decline in American receipts at primary markets. Another was the entry of Italy as a substantial import purchaser, following the cancellation of contracts for Russian grain. This advance in wheat prices accompanied a boom on the stock market following the November election, and psychological factors promoted speculation by the public in every field. Predominantly, however, the recovery reflected due and proper recognition of the local and temporary nature of the October reaction, and the persistence of influences which seemed to justify higher wheat prices.

The sustained advance in December and January was due to a combination of forces. One was the strong European demand. As late as February 3 Broomhall wrote: "It is hardly necessary to say that the demand of importers has been the chief factor in putting high prices still higher—it is true there has been renewed speculative buying in America and Canada, but we doubt if this would have had much force unless it was backed up by needy countries taking actual Wheat." In retrospect it seems evident that these purchases had their major importance in strengthening the conviction that the wheat shortage was more acute than had been generally supposed, and than it actually proved.

The slight upward revision of the American crop, as of December 1, had been fully discounted in advance. The Canadian revision of December 31 was slightly down-

ward. Receipts at primary markets, both in the United States and Canada, fell off rapidly. Visible supplies, which in the two preceding years had risen in December and January, declined. Russia entered the market as an importer, and her effective demand was exaggerated. The Danube countries were believed to have over-exported, and were counted upon to add to world-import requirements. European importers were known to be contracting heavily for early deliveries from Argentina and Australia. The large European imports of the first four or five months of the crop year were regarded as indicating a level of demand which would be maintained, perhaps increased. The public measures for restricting consumption in Europe hardly got under way until January, and were not taken very seriously until later. Large loans to European countries strengthened Europe's immediate purchasing power, and were floated in an atmosphere calculated to create optimism about Europe's ability to finance imports. Recognized leaders in the grain trade and among professional speculators were outspoken in their convictions that much higher prices were warranted by the statistical position, though a few prophesied decline. Wide currency was given to statements published by the Department of Agriculture or attributed to one of its leading officials, near the middle of January, which lent official support to the view that underlying conditions fully warranted the prices then prevailing.<sup>1</sup> Credit was so easy as to favor extensive speculation in grain as well as in stocks, and many amateur speculators were attracted to the wheat market.

The culmination of the long advance was due to active bull speculation, chiefly in

<sup>1</sup> On January 14 the *Northwestern Miller* quoted a statement of the Department of Agriculture, under the caption, "Is the Wheat Price too High?" in which is the following sentence: "The sum of the whole matter was that the slight but progressive improvement in the United States crop gave us, alone of all of the producing and consuming countries, a good crop, while generally throughout the rest of the world there was a shortage of bread grains."

On January 22 the *Chicago Journal of Commerce* quoted the head of the Grain Futures Administration Office at Chicago to the effect that, "If statistical information so far at hand is to be depended upon, and we have nothing on which to base more dependence, the world conditions warrant present prices."

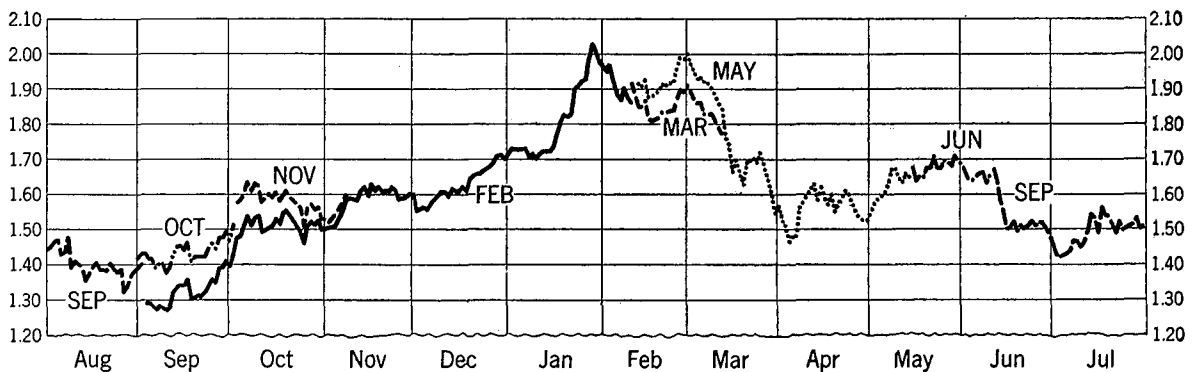
North American markets. Financial and psychological conditions favored this movement, and the statistical situation clearly warranted high prices, but afforded no secure basis for judging how high prices should or would go. The event proved that expectations were excessive.

The extreme decline in February and March was in part a forced realization of this fact. But the major force behind it was not so much new evidence as new speculation, short-selling for the decline. Indeed, new evidence was conflicting. Receipts at

requirements, and Chicago banks pressed for reduction in loans on wheat futures regardless of the character of supplementary collateral offered. As bear operations continued, weaker holders were forced to sell, stop-loss levels were progressively uncovered, and even stronger holders found it prudent, if not necessary, to liquidate their positions.

The collapse was interrupted by advances in the second half of February and the third week of March. Both were due in part to covering purchases by bear operators, but

CHART 15.—DAILY CLOSING PRICES OF WHEAT FUTURES AT BUENOS AIRES, 1924-25\*  
(Expressed in dollars per bushel)



\* Compiled from Russell's Market News and New York Journal of Commerce.

primary markets, especially in Canada, increased somewhat under the stimulus of mounting prices, but the March 1 census of country stocks in the United States was somewhat less than the trade had expected. There were indications that the Canadian crop was underestimated. The new Indian crop, however, suffered deterioration. Visible supplies increased in February, as a result of heavy shipments from the Southern Hemisphere, but they declined in March. There was a reversal of the optimism concerning the European financial outlook. European inquiries and purchases, for both immediate and deferred delivery, declined as the reaction progressed. This, however, was generally regarded as merely temporary.

But the extensive speculation for the rise had created a vulnerable market position and set the stage for a bear raid. Money rates rose. In the later stages of the advance, exchange houses raised their margin

chiefly to a renewal of export buying—in February, especially for Italy, Russia, and ex-Europe. There arose also in February a belief that the Australian crop was overestimated, and the Australian government was reported to be considering measures for putting some restriction on exports to ensure home requirements. Leading American grain exporters predicted that the United States would be on a domestic basis in May, June, and July. But continued heavy shipments from the Southern Hemisphere encouraged the belief that exports from that quarter would be made very freely, and favorable prospects for new crops began to exert some depressing influence early in March, as rains improved American winter-wheat prospects and furnished good conditions for spring seeding.

From April onward the market was influenced chiefly by two related factors, the changing outlook for new crops and the failure of European import demand (as well

as American milling demand) to materialize on the scale which had been anticipated. The latter accounts for the absence of any pronounced advances. The moderate upward trend in April and May was due mainly to unfavorable prospects for the United States winter-wheat crop. Condition reports as of April 1 were extremely low, and caused a sharp rise; but later in the month there was a reaction when the drought was broken in important producing areas. Abandonment of fall-sown acreage was correctly estimated to be very heavy, but the official condition report as of May 1, while essentially bullish, was higher than the trade had anticipated. Favorable prospects in Europe and the spring-wheat belt of North America, however, gave reason to expect that supplies of old wheat could be safely depleted as the harvests approached.

In June a considerable decline occurred. The official forecast of the American winter-wheat crop was reduced by nearly 40 million bushels; but the deterioration in condition, as suggested by the official percentages, was less than the trade had expected. There was cumulative evidence of good prospects for spring-wheat crops and for European crops. Reassured by this outlook, and affected by reduced consumption, European buyers failed to make their anticipated purchases in exporting markets. The rise early in July is attributable to unseasonably hot weather which affected chiefly the spring-wheat belt of North America, and the subsequent decline was due mainly to weather improvement.

Viewing the year as a whole, it is evident that the heavy autumnal marketing in North America delayed the adjustment of prices to a level appropriate for the year, that prolonged bullish speculation drove them above this level, that the large crops and heavy shipments from the Southern Hemisphere checked the rise, and that the favorable outlook for new crops, especially in Europe, was the major influence in restricting European demands and preventing large price advances from April onward. The price swings and short-time fluctuations were especially wide because of pronounced speculative activity in a situation quite unprecedented and exceedingly diffi-

cult to appraise, because of the irregular course of European purchases, and because of changing weather conditions affecting new crops when supplies of old wheat were known to be short.

#### PRICE COMPARISONS

In the world's markets wheat is not simply wheat. While certain influences are common to all wheats, the price divergences among different wheats are often marked. Price movements are by no means uniform from market to market. These statements find numerous illustrations in the crop year 1924-25. In discussing them, reference will be made to Chart 16 (p. 42) which shows weekly cash prices of leading grades of wheat in export markets and in Liverpool. Monthly averages for these and a few additional grades are given in Appendix Table XXIV. In considering these data attention will be concentrated on the major dissimilarities; the common features have already been discussed, and minor divergences, due in part to accidental or temporary circumstances, will be ignored.

First it will be observed that No. 1 Manitoba in Winnipeg sold above No. 1 Dark Northern in Minneapolis throughout most of the crop year.<sup>1</sup> This is basically attributable to intrinsically superior quality,<sup>2</sup> and to the fact that, while the American spring-wheat crop was large, the Canadian was short, and less than the usual proportion graded No. 1. In March and most of April, however, Winnipeg prices were below Minneapolis prices, chiefly because of the dominance of seasonal influences, which usually force Winnipeg prices down while navigation on the Great Lakes is closed. The exceptional divergence in May and early June is associated with the "squeeze" in Winnipeg toward the closing of the May option—a squeeze in which the power and policy of the Canadian pool are supposed to have figured heavily. After these influences ceased to operate, the two prices ran close together for several weeks, until late in

<sup>1</sup> Throughout 1923-24 the opposite was true. See *WHEAT STUDIES*, December 1924, I, 41.

<sup>2</sup> The flour-making quality of No. 1 Manitoba is usually appreciably higher than that of No. 1 Dark Northern.

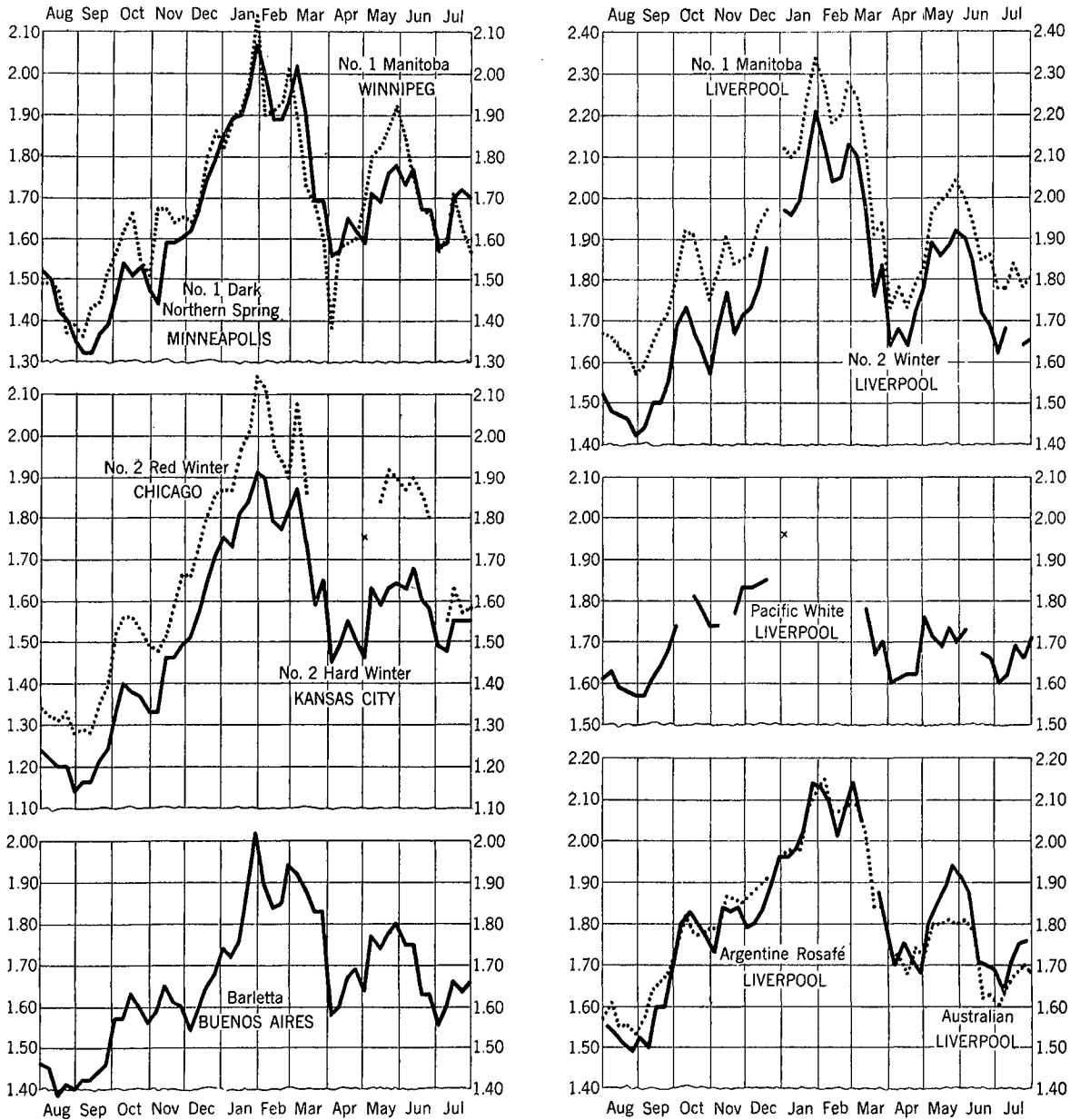
July, when the good prospects for the new crop in Canada exerted a depressing influence in Winnipeg, while adverse conditions

representative wheats in 1925-26 tended to widen the margin.

In the next place, it will be observed that,

CHART 16.—WEEKLY CASH PRICES OF REPRESENTATIVE WHEATS IN PRINCIPAL EXPORTING AND IMPORTING MARKETS, AUGUST 1924 TO JULY 1925\*

(Dollars per bushel)



\* For sources, see Appendix Table XXIV.

in the American northwest raised prices in Minneapolis. Expectations that the United States would be on a "domestic basis" for

both in North America and in Liverpool, No. 1 Manitoba sold consistently at a considerable premium over No. 2 Hard Win-

ter.<sup>1</sup> This is partly to be explained by the usual preference of the British trade for No. 1 Manitoba, but it was due chiefly to the special abundance of the American hard winter crop and the relative shortage of Canadian wheat. Indeed in Liverpool No. 3 Manitoba usually commanded a premium over No. 2 Hard Winter, both deliverable on future contracts.

In the third place, the high premium of soft red winter wheat over hard winter wheat stands out clearly. The divergence chiefly reflects the fact that hard winter wheat was abundant and sold on an export basis until July 1925, while the soft red winter crop was short. The premium on No. 2 Red was especially large after the middle of January, as supplies became increasingly small. The narrow margin in July reflects the different position in the new crop year, when both winter crops are short.

No good American price series for Pacific white wheat is available. The crop was unusually short. Hence in Liverpool, when this wheat was quoted, it sold usually well above hard winter in the autumn. With but limited supplies available, this wheat was not substitutable for other wheats, and its price was determined largely by the demand peculiar to it.

Argentine and Australian wheat prices differ from the prices of North American wheats in having different seasonal tendencies. Barletta wheat in Buenos Aires sold above American red winter until December, and above hard winter throughout the year. Indeed its course paralleled most closely the curve of No. 1 Dark Northern at Minneapolis, though it sold much higher in October and November, and it declined less abruptly in March. In Liverpool it sold slightly higher than No. 2 Winter until March; but it did not reach so high a peak in January or fall to so low a point in April.

Australian wheat in Liverpool sold slightly above Argentine until March, when new Australian grain reached Liverpool, and rather below it from April onward, pre-

sumably as a result of heavy shipments of Australian wheat from the huge crop. On the whole, Australian wheat fluctuated much less than Argentine. The absence of the late May peak can be especially remarked.

Durum wheat rose more than other American wheats from the low points of 1923-24 to the peak of 1924-25. In July and August 1923, No. 2 Amber Durum at Minneapolis averaged 96 cents a bushel. While it rose in later months, it averaged only \$1.14 in April 1924. In January 1925 it averaged \$2.15. From October 1924 to May 1925 it sold at higher prices than our premier bread wheat, No. 1 Dark Northern Spring at Minneapolis, and in part of this period above No. 2 Red Winter at St. Louis.<sup>2</sup> (See Appendix Table XXIV.) This was not due to a shortage in the American crop, for the 1924 crop was the largest ever harvested except that of 1922. (See Appendix Table VIII.) It was due rather to the large European demand for American durum in consequence of the very limited exportable supplies of macaroni wheats from North Africa and Russia. A marked change in the new crop year, when large crops of durum are available both in the United States and in competing countries, was reflected in the pronounced decline of durum prices in June 1925.

#### CONTINENTAL PRICES

European prices of domestic wheats, when converted to American currency, reveal many peculiarities, even if one considers merely the monthly averages such as are shown, for certain countries, in Appendix Table XXV. In general, the highest point was reached in February, as in other markets. In Germany, however, the February average was substantially exceeded in May. Prices of native wheat in England and France fluctuated little in domestic currency, and in dollars the range was relatively small—from \$1.45 to \$1.74 per bushel in England, from \$1.50 to \$1.89 per bushel in France. In Germany, as in 1923-24, the price of domestic wheat, like that of most other commodities, was consistently low in terms of gold values, and even at the high

<sup>1</sup> The opposite had been true throughout most of 1923-24, though No. 2 Hard was seldom quoted in Liverpool. See *WHEAT STUDIES*, December 1924, I, 41.

<sup>2</sup> See table in *Foreign Crops and Markets*, July 13, 1925, p. 56.

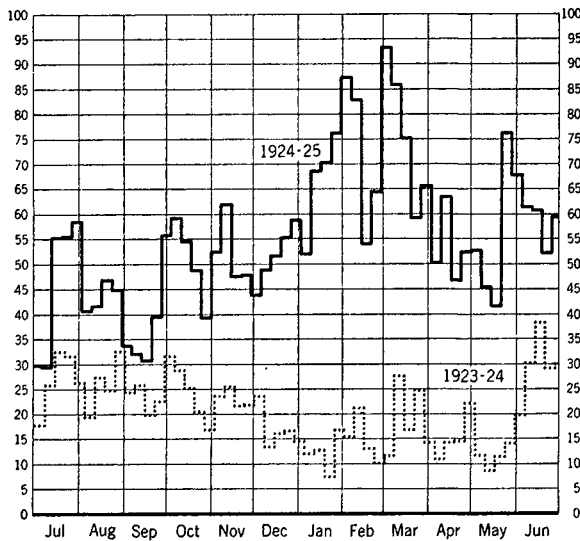
average in May it was only \$1.70 a bushel. In Great Britain, France, and Germany domestic wheat rose relatively less than imported wheats in 1924-25, chiefly because of the poor quality of the 1924 crops. The most striking increase occurred in Italy, where Milan prices of native soft wheat rose from an average of \$1.25 per bushel in July 1924 to \$2.31 in February 1925. An adequate discussion of these price movements, however, would take us too far afield. Enough has been said to show that the so-called world price of wheat does not control prices of domestic wheats in individual countries.

#### THE INFLUENCE OF SPECULATION

Speculative activity was exceedingly heavy in 1924-25. In American futures markets the average daily volume of trading in the crop year July-June was 63 million bushels as compared with 24 million in 1923-24 and 37 million in 1922-23. (See Appendix Table XXIII. Chart 17 shows the course of specu-

CHART 17.—AVERAGE DAILY VOLUME OF TRADING AT CHICAGO, WEEKLY, 1924-25\*

(Million bushels)



\* Data of Grain Futures Administration.

lative activity by weekly data over the past two crop years.) In the last three months of 1924 the average daily trading, around 60 million bushels, was greater than in any previous month since the war. The turn-

over increased in the next three months to a maximum of 87.4 million bushels in March, when liquidation was extremely heavy. Even after the collapse was over, the volume of trading continued large to the end of the crop year.

For the large activity in 1924-25 three factors were chiefly responsible: the uncertainties in the situation; the certainty of high prices and the possibility of even higher prices; and the ease in the money markets, which at the same time favored bull speculation in stocks. The peak of speculative activity in March was caused by extensive short selling and heavy liquidation of holdings built up during several months previous.

It is impossible to say whether, on the whole, the speculative activity in 1924-25 moderated or intensified the broad swings in prices. At certain periods, however, it unquestionably intensified short-time fluctuations. These were so violent as to destroy, for a time, the usefulness of the futures market for hedging purposes. In Chicago, on several days in the first three months of 1925, the range of fluctuations was as high as 10 cents, and the maximum on March 23 and 30 was over 13 cents. Even convinced believers in speculation as a beneficent economic force—notably in the grain trade and milling industry—were led to consider that some moderation of its uncontrolled influence might be desirable, indeed imperative.

On March 18 the Secretary of Agriculture ordered an investigation by the Grain Futures Administration to determine whether prices had been manipulated. The investigation, according to a preliminary official report, brought to light evidence of manipulation. Accordingly, the Secretary of Agriculture urged the Chicago Board of Trade to promulgate rules calculated to prevent over-speculation, made several constructive suggestions, and warned that failure to act would lead him to urge additional legislation. After early adverse action by its directors, the Board eventually adopted, by referendum, in September and October, 1925, several sweeping changes proposed by a special committee. These include the establishment of daily clearings for trades,

the grant of a right to vote by mail, a provision for placing limits upon daily price fluctuations under certain emergencies, and the appointment of a business-conduct committee to prevent manipulation and supervise the conduct of members in their relations with outsiders, the public, and the government.

The Chicago Board of Trade is a private organization. Under pressure of public opinion, focused by the Secretary of Agriculture, it has recognized that its position, as a kind of public utility, requires it to accept a degree of responsibility to the public for preventing the use of its machinery in ways

injurious to the trade and the public. This recognition is the significant fact in the new regulations. The actual outcome cannot be forecast, for it will depend more on administration than on the new rules themselves. There is reason to expect a more favorable result than if the change had been forced upon a hostile trade by legislation. But it must be recognized that wheat speculation is international in scope, and it is uncertain how far it will be possible to prevent abuses by regulation of American futures markets, so long as Canadian and European term markets are open to both resident and American speculators.

## VIII. CONCLUDING OBSERVATIONS

### DISTRIBUTION OF GAINS FROM RISING PRICES

In a year of such pronounced changes in wheat and flour prices, the different exporting and importing countries fared better or worse according to their foresight or fortune in selling or buying in particular periods. If one could assemble comparable weighted-average export and import prices for a large number of countries, it would be possible to compare the success with which the international merchandising was accomplished. Appendix Table XXVI contributes to such an analysis monthly average export prices of the United States, Canada, and Australia, and similar average import prices for Great Britain, both for wheat and for flour in the past two crop years. For wheat, the yearly weighted averages are as follows, in dollars per bushel:

Year	United States	Canada	Australia	United Kingdom
1923-24.....	1.11	.99	1.03	1.22
1924-25.....	1.58	1.54	1.65	1.77

The increase in average export prices was relatively least in the United States—47 cents per bushel, or 42 per cent. The heaviest exports took place before prices had approached their peak. The month of largest exports was October, and more than half of the total was exported before prices reached the level characteristic of the year as a whole. This was the consequence of the large early marketing. Hungary, Rou-

mania, and Jugo-Slavia similarly lost by unduly heavy exports in the summer and autumn of 1924.

Canada gained relatively more per bushel than the United States. The increase in average export prices was 55 cents, about 55 per cent. This was partly because Canada's harvest is normally later and was later than usual in 1924, and partly because the pools resisted the tendency toward rapid export. But the closing of lake navigation impelled heavy exports before the middle of December, and left less for export at the higher level of prices. That Canadian average export prices rose more than the United States is the more impressive because quality considerations tended to raise American wheat prices more than Canadian. American exports in 1923-24 included much mediocre wheat, while in 1924-25 they were of high average quality. Canada's exports, on the other hand, were of high quality in 1923-24, but in 1924-25, because of the low quality of the crop, they included unusually large quantities of lower grades.<sup>1</sup> In view of this fact, and the heavy exports from the United

<sup>1</sup> Quality considerations largely explain the fact that the average export price of Canadian wheat in 1924-25—\$1.54—was considerably lower than the pool price of No. 1 Manitoba at the head of the Lakes—\$1.66 (see p. 12). Lower grades sold at considerable discounts under No. 1. No. 4 Manitoba, however, frequently brought as high a price in Liverpool as No. 2 Hard Winter, since these lower grades were high quality for European mills from the standpoint of protein content.



States early in the season, it is still somewhat surprising to find that the average declared value per bushel of Canada's exports was lower in both years than that of American exports. It is possible that the export declarations are not entirely comparable for various reasons, such as trans-shipments from each country to export ports of the other country, and different bases of exporters' valuations.

Australia profited most from the peculiar concurrence of circumstances. The increase in her average export prices was about 62 cents, or 60 per cent. The bulk of Australia's exports was probably contracted for in December and January at prices rather above than below the level characteristic of the year. Because of her remoteness, her export prices month by month were generally lower than those of her competitors, yet the weighted average price of her exports was appreciably higher. Argentina, which exported relatively more than Australia in the autumn and relatively less in the winter and spring, probably gained somewhat less than Australia, but more than her North American competitors. The retention of a heavier exportable surplus on August 1 has proved financially unwise.

Among the importers, Great Britain gained by a policy of early buying. Her heaviest monthly imports, partly for resale, were in August 1924, when prices were at their lowest point. Her weighted average import price was appreciably below the level of prices characteristic of the year. It was only 55 cents, or 45 per cent, higher than in 1923-24. Unquestionably her merchants, and probably the British public, profited by the prevision of the British grain trade, and as a result of early American marketing. In all probability an even greater advantage was reaped by France, where also August 1924 was the month of maximum imports, and two-thirds of the net imports were received by the end of November. The delayed harvest was a blessing in disguise. Italy, on the other hand, conspicuously lost by importing lightly in the autumn and much more heavily later. Her average import price was probably at least 70 per cent higher than in 1923-24.

This discussion strongly emphasizes the

importance, to both exporting and importing countries, of arriving at a correct appraisal of the international wheat situation and prospects. It also shows, however, that fortune, especially with reference to the size of crops and the price prevailing when harvests become available, plays a large part in determining the distribution of gains or losses incident to price swings.

#### IMPROVEMENT IN FARMERS' POSITION

An important consequence of the rise in wheat prices during 1924-25 was a marked improvement in the financial position of the wheat farmer. The change was especially marked in the United States. In 1923-24 the American farmer, already injured by three years of unremunerative prices, suffered further reverses because, in a year when world wheat supplies were abundant and international wheat prices were exceptionally low, he harvested a moderate crop of low average quality. In 1924-25, on the contrary, American wheat farmers generally harvested large crops of good average quality in a year when most other countries of the Northern Hemisphere had small crops of a quality below average. Only twice before in the past thirty years, in 1897-98 and 1914-15, had the American wheat grower experienced equally good fortune. Because of excessively rapid marketing in the autumn of 1924, he failed to reap the maximum profit which this fortunate concurrence made possible; even so, he marketed an exceptionally large fraction of his crop, at prices averaging over 40 per cent higher than in 1923-24, and made substantial cash profits for the first time in five years. Psychologically, and in a measure financially as well, he emerged from the slough of depression. He made great progress in repaying accumulated indebtedness (especially short-time debts), replenished his depleted cash reserves, and regained his confidence. So sudden and substantial a transformation seldom occurs in American agriculture.

In Canada the crop shortage prevented an equally favorable outcome. But the increase in prices was even greater than in the case of the United States. The average farm price for the crop of 1924 is officially estimated (probably too conservatively) at

\$1.22 per bushel as compared with 67 cents for the crop of 1923. The estimated farm value of the crop of 1924, even on the basis of the official estimate of 262 million bushels, was about the same as that of the 474 million bushel crop of 1923; and revised figures may show it substantially higher. Since costs of planting and harvesting were undoubtedly lower for the 1924 crop, this short crop was distinctly more profitable to the grower than any other in recent years. In Canada, as well as in the United States, the prolonged depression of the wheat farmer came to a close, but the small size of his crop prevented him from securing the financial gains which his American competitor enjoyed.

The Australian wheat grower profited most of all. Harvesting almost a record crop of good quality, he was able to market the bulk of his exportable surplus in the period of the year when prices were near their maximum. In these respects he was doubly fortunate. Moreover, the abundance of ocean shipping available at low rates kept down the margin between importers' prices and export prices. While no comparable data on the returns and profits of the Australian wheat grower are at hand, it is not an exaggeration to say that he enjoyed almost unparalleled good fortune.

The Argentine crop was of fair size, though by no means a record, but unusually heavy abandonment of acreage and moderate yields per acre harvested raised production costs per bushel. The Argentine wheat grower also enjoyed the advantage of marketing in a period of specially favorable prices, though a more conservative marketing policy restricted his profits. There is small doubt that the Argentine crop was more profitable to the grower than any other in recent years, but the Argentine wheat grower's position was not nearly as favorable as that of his Australian counterpart.

In British India the harvest of a good crop and the higher level of prices insured favorable returns, but the farmers profited less because of their early harvest; the crop was largely marketed before the price level characteristic of the year 1924-25 had been attained.

In Europe generally, as in Canada, the higher prices of 1924-25 were partially neutralized by the shortness and low average quality of the crop. Even so, it may be safely inferred that European wheat farmers generally reaped larger profits from their reduced crops than from the large crops of 1923, or indeed than from the crops of any other year since the war. The gain was greatest in France, Jugo-Slavia, and Russia, where the wheat crops of 1924 were of fair size, and especially pronounced in Russia, where the price advance was most notable.

#### OTHER EFFECTS OF PRICE INCREASES

In North America, indeed in exporting countries generally, the rise in wheat prices was commonly regarded as a most welcome event, long-deferred, and the effect upon consumers received little consideration. Not so in Europe. The rise in the price of bread was there a social problem of major importance. In England it gave rise to an extensive investigation by a Royal Commission. On the Continent it precipitated inquiries, public control, and regulation, in a great variety of forms. In several countries it called forth a return to something like war bread; indeed, what the people had learned during the war by way of adaptation, substitution, and acceptance of inferior bread stood them in good stead during the past season.

Moreover, the coincidence of small European crops of bread grains with a shortage in Canada and Russia was exceedingly costly to Europe. Europe's imports of bread grains probably cost between 300 and 400 million dollars more than in 1923-24 and between 200 and 300 million dollars more than Europe may expect to pay for her average imports of bread grains at an average level of wheat prices. Happily for Europe, the misfortune of a crop shortage came at a time when her economic condition had improved, and when her international financial standing enabled her to supplement her exports by substantial foreign loans. Indeed, only thus was it possible for her to have translated her needs into effective demands. But the burden of financing these imports was exceedingly

heavy. It unquestionably affected the position of the Italian lira and the Polish zloty, and rendered more difficult the return of sterling to parity and its maintenance there. It seriously affected the international balance of payments of these and several other countries. The recovery of Russia and the Danube states was given a serious setback. A different story will be told of 1925-26.

On the whole, however, the recovery of wheat prices from the abnormally low levels of 1923-24 is to be welcomed. They were far below normal, and quite out of adjustment with prices of other commodities. Just what the normal post-war level may be it is too early to assert; but there seems no question that it will be closer to the level characteristic of 1924-25 (see Table 8, p. 35) than to that of 1923-24.

#### MISJUDGMENTS DURING THE YEAR

The course of wheat movements and prices is deeply influenced not merely by changing conditions, but by the opinions, interpretations, judgments, and previsions of traders. The experiences of the past year strikingly illustrate how greatly even trained observers are liable to misconstrue positions and trends when convenient precedents are lacking. It is instructive to pass in review certain of these misjudgments, as well as a few errors in fact which accounted for certain of the mistaken opinions.

The basic statistical data were brought to light without noteworthy delay and, in the main, with reasonable accuracy. A few notable instances of changes in reported facts, already mentioned, deserve notice here. The American wheat crop of 1924 was notably underestimated early in the season. From June 1 to December 1 each forecast or estimate was larger than the one before, and the net increase over the six months was 180 million bushels. Doubtless the early forecasts were unjustifiably small, but unusually favorable conditions after June 1 resulted in steady improvement and brought unexpectedly high yields per acre. Contrariwise, the crops of Canada, Russia, Jugo-Slavia, and certain other European countries promised better than they turned out; but the aggregate shrinkage during the summer

and autumn of 1924 was less than the increase in the American wheat crop, and at present the Canadian crop forecast of July 31, 1924, seems nearer the truth than the final estimate of December 31. The transformation of Russia from a probable exporter to an actual importer had unquestioned weight in changing the statistical position in favor of higher prices. The progressive development of European crops in the spring and early summer of 1925 was a factor of great importance. These were the major developments in facts which had large price significance.

The most important error of judgment, on the basis of known facts of supply, lay in the estimates of importers' demands; and this caused extreme uncertainty as to the price which would equate available supplies and effective requirements. All agreed that prices should rule substantially higher than in 1923-24, but it was anybody's guess as to how high prices were warranted by the evidence. It would be difficult to find a year of peace in which the divergence of professional opinion was so striking as in 1923-24. A sounder appraisal in the summer of 1924 would have profoundly altered the course of prices and trade.

Broomhall conspicuously overestimated ex-European requirements, through failure to give sufficient weight to initial stocks and the restrictive influence of high prices; and he lowered his estimates, with evident reluctance, from 112 million bushels on August 26 to 96 million on November 18, to 88 million on March 3, and to 72 million on May 19. His estimates of European requirements were much nearer the truth. Until March 3 he underestimated actual shipments, but his revision of that date considerably overshot the mark. Broadly speaking, both in Europe and outside, traders overestimated European demands, inferring too much from the heavy imports early in the year, underestimating bread-grain reserves and the economies which high prices reinforced by official measures would bring, and failing to give due weight to European crop prospects in the latter part of the crop year. The appreciation of the shift of Russia and Danubian countries from exporters to importers was delayed

by the confusion existing in those countries; but when confirmed, its significance was exaggerated. These overestimates of the strength of effective demand (not desire or need) in importing countries were the major influence in raising prices higher than they could be maintained.

In the autumn of 1924 Western European countries were slow in appraising the flour value of the bread-grain crops; they lacked trustworthy estimates of stocks; and they suffered from exaggerated apprehensions regarding both domestic and foreign supplies. These forces led to the frantic buying of September 1924. The crisis in the German and neighboring markets in October–November, 1924, was directly due to misapprehensions concerning the German crop and milling position.

The past year was one in which countless statements were issued by members of the trade, giving what purported to be unbiased appraisals of the situation or “accurate” news items affecting the position of the commodity. Near the height of the bull movement, as we have noted, even Department of Agriculture officials made statements which were interpreted as justification for the price position. At that time no one was in a position objectively to state that the current price of wheat was warranted or justified by the statistical position, or that it was unwarranted or unjustified. The influence of such statements is impossible to measure, but it was probably considerable in a year of such wide public interest in the market as last year. The Grain Futures Act penalizes manipulation, but obviously it is difficult to distinguish legitimate from illegitimate publicity material of this sort.

In the United States, as well as in Europe, there were important misjudgments resting upon the lack of information about “invisible” reserves, and upon false assumptions regarding them. We are only beginning to recognize the extent of hitherto uncounted and “invisible” stocks of wheat and flour, of their possible variation within a season and from year to year. Traders’ expectations of serious depletion of reserves were based largely upon figures for reported stocks, without allowance for hidden scattered reserves. Millers who in February believed that flour stocks were small and that flour buying was already from hand to mouth, were therefore unprepared for substantial reduction in flour purchases in later months.

The experiences of the past year have made it clear, for both exporting and importing countries, that we possess no dependable means of determining, especially in abnormal periods, what the stocks of wheat and flour really are, the times when purchasing is really from hand to mouth, and the extent and direction of adaptation and substitution. No technique has yet been developed for forecasting the quantities that will be demanded at various levels of price, taking into account the complicating factors, or for asserting what prices are or are not warranted by a particular set of conditions.<sup>1</sup> The outcome of the year’s experience should lead growers, traders, and governments alike to realize their need for ampler statistical material and improved methods of analysis.

<sup>1</sup> Mention should be made, however, of the formula recently worked out by the Department of Agriculture for forecasting the price of May wheat, several months in advance. See *Foreign Crops and Markets*, May 11, 1925, p. 549.

*This issue has been written by Joseph S. Davis and Alonzo E. Taylor, with substantial assistance from E. Gail Benjamin and Margaret Milliken*

# APPENDIX

TABLE I.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING AREAS, PRE-WAR AND POST-WAR\*  
(Million bushels)

Year	United States	Canada	British India	Australia	Argentina	Ohlle	Uruguay	Hungary	Bulgaria	Jugoslavia	Romania	Soviet Russia
1919.....	968.0	193.3	280.3	46.0	217.0	19.9	5.9	... <sup>a</sup>	29.8	51.0	66.0	.... <sup>a</sup>
1920.....	833.0	263.2	377.9	145.9	156.1	23.2	7.8	38.3	30.0	43.0	61.3	318.2 <sup>b</sup>
1921.....	814.9	300.9	250.4	129.1	191.0	23.6	9.9	52.7	29.2	51.8	78.6	204.7 <sup>b</sup>
1922.....	867.6	399.8	367.0	109.5	195.8	25.9	5.2	54.7	37.7	44.5	92.0	242.5 <sup>b</sup>
1923.....	797.4	474.2	372.7	125.5	247.8	27.5	13.3	67.7	36.2	61.1	102.3	330.5 <sup>b</sup>
1924.....	872.7	262.1	360.6	164.0	191.1	24.9	11.3	51.6	28.3	57.8	70.4	381.7 <sup>c</sup>
1925.....	697.3	422.3	324.7	.....	.....	.....	.....	67.6	49.6	82.3	106.4	661.1 <sup>c</sup>
Average												
1909-13 <sup>d</sup> .....	690.1	197.1	351.8	90.5	147.1	20.1	6.5	71.5	37.8	62.0	158.7	758.9
1920-24.....	837.1	340.0	345.7	134.8	196.4	25.0	9.5	53.0	32.3	51.6	80.9	295.5 <sup>b</sup>

Year	Morocco	Algeria	Tunis	Egypt	United Kingdom	France	Germany	Italy	Belgium	Netherlands	Denmark	Norway
1919.....	16.4	21.0	7.0	30.1	69.3	187.1 <sup>e</sup>	79.7	169.8 <sup>f</sup>	10.6	5.9	5.9 <sup>f</sup>	1.07
1920.....	17.9	8.4	5.2	31.7	56.8	236.9	82.6	141.3	10.3	6.0	7.4	1.00
1921.....	23.2	28.2	10.6	37.0	73.8	323.5	107.8	194.1	14.5	8.6	11.1	.97
1922.....	12.9	17.0	3.7	36.6	65.2	243.3	71.9	161.6	10.6	6.2	9.2	.64
1923.....	20.0	36.4	9.9	40.7	58.5	275.6	106.4	224.8	13.4	6.2	8.9	.59
1924.....	23.9	17.2	5.2	34.2	52.6	281.2	89.2	170.1	13.0	4.6	5.9	.49
1925.....	21.1	40.3	9.9	36.5	50.8 <sup>g</sup>	329.1	106.7	240.7	14.1	5.1	...	.55
Average												
1909-13 <sup>d</sup> .....	17.0	35.2	6.2	33.7	59.6	325.6	131.3	184.3	15.2	5.0	6.3	.31
1920-24.....	19.6	21.4	6.9	36.0	61.4	272.3	91.6	178.4	12.4	6.3	8.5	.74

Year	Sweden	Spain	Portugal	Switzerland	Austria	Czecho-Slovakia	Poland	Finland	Latvia	Estonia and Lithuania	Greece	Japanese Empire
1919.....	9.4	129.2	8.2	3.9	5.1	15.4 <sup>h</sup>	22.2 <sup>i</sup>	.26	... <sup>a</sup>	3.07	9.8	41.3
1920.....	10.3	138.6	10.4	3.6	5.4	26.4	22.7	.27	.39	2.60	11.2	41.3
1921.....	12.3	145.2	9.4	3.6	6.5	38.7	37.4	.45	.78	3.27	11.2	39.9
1922.....	9.4	125.5	9.8	2.3	7.4	33.6	42.5	.71	.96	4.03	9.6	40.0
1923.....	11.1	157.1	13.0	3.6	8.9	36.2	49.7	.69	1.64	3.70	13.4	35.3
1924.....	6.9	121.8	8.6	3.1	8.5	32.2	32.5	.79	1.58	3.86	9.7	35.9
1925.....	14.1	162.6	....	3.5	12.0	36.6	58.6	.75	2.02	5.91	11.4	40.5 <sup>j</sup>
Average												
1909-13 <sup>d</sup> .....	8.1	130.4	11.8	3.3	12.8	37.9	63.7	.14	1.47	3.63	16.3	32.2
1920-24.....	10.0	137.6	10.2	3.2	7.3	33.4	37.0	.58	1.07	3.49	11.0	38.5

\* Data of U.S. Department of Agriculture.  
<sup>a</sup> Data not available.  
<sup>b</sup> Including Siberia and Kirghisia, but not complete for Asiatic Russia.  
<sup>c</sup> From *International Crop Report and Agricultural Statistics*, September 1925.  
<sup>d</sup> Including U.S. Department of Agriculture estimates for area within post-war boundaries. Russian figures include most Asiatic territory.  
<sup>e</sup> Includes only part of Alsace-Lorraine.  
<sup>f</sup> Old boundaries.  
<sup>g</sup> England and Wales only; corresponding figure in 1924 was 49.8.  
<sup>h</sup> Bohemia and Moravia only.  
<sup>i</sup> Excluding Formosa.

TABLE II.—WHEAT ACREAGE IN PRINCIPAL PRODUCING AREAS, PRE-WAR AND POST-WAR\*

(Million acres)

Year	United States	Canada	British India	Australia	Argentina	Chile	Uruguay	Hungary	Bulgaria	Jugoslavia	Roumania	Soviet Russia
1919.....	75.69	19.13	23.80 <sup>a</sup>	6.42	16.90	1.20	.68	.... <sup>b</sup>	2.08	3.38	4.27 <sup>c</sup>	.... <sup>b</sup>
1920.....	61.14	18.23	29.95	9.07	13.22	1.26	.70	2.66	2.18	3.56	5.00	47.56
1921.....	63.70	23.26	25.78	9.72	14.10	1.35	.81	2.89	2.23	3.70	6.15	28.31
1922.....	62.32	22.42	28.21	9.96	16.06	1.47	.66	3.52	2.23	3.72	6.55	23.18
1923.....	59.66	22.67	30.84	9.50	17.04	1.38	1.06	3.32	2.30	3.84	6.65	28.12
1924.....	54.21	21.68	31.20	10.78	15.98	1.40	1.05	3.50	2.46	4.24	7.84	41.73 <sup>d</sup>
1925.....	53.99	22.20	31.57	10.75	19.02 <sup>e</sup>	1.50	....	3.60	2.51	4.10	7.81	13.19 <sup>f</sup>
Average												
1909-13 <sup>g</sup> .....	47.10	9.94	29.22	7.60	14.88	1.00	.79 <sup>h</sup>	3.71	2.41	3.98	9.51 <sup>h</sup>	74.21
1920-24.....	60.21	21.65	29.20	9.81	15.28	1.37	.86	3.18	2.28	3.81	6.44	35.78 <sup>d</sup>

Year	Morocco	Algeria	Tunis	Egypt	United Kingdom	France	Germany	Italy	Belgium	Netherlands	Denmark	Norway
1919.....	1.55	2.80	1.41	1.32	2.37	11.63	3.21	10.59	.34	.17	.13	.04
1920.....	2.00	3.13	1.32	1.19	1.98	12.59	3.40	11.29	.31	.15	.18	.04
1921.....	1.96	2.78	1.49	1.46	2.08	13.30	3.56	11.78	.34	.18	.22	.04
1922.....	2.07	3.10	.88	1.52	2.07	13.07	3.40	11.49	.30	.15	.24	.03
1923.....	2.25	3.17	1.56	1.54	1.84	13.67	3.65	11.55	.34	.15	.21	.03
1924.....	2.33	3.48	1.11	1.50	1.80	13.41	3.62	11.28	.34	.12	.20	.03
1925.....	2.52	3.41	1.43	....	1.38	13.77	....	11.66	.38	.13	...	...
Average												
1909-13 <sup>g</sup> .....	1.70	3.52	1.31	1.31	1.89	16.50	4.03	11.79	.40	.14	.15	.01
1920-24.....	2.12	3.13	1.27	1.44	1.95	13.21	3.53	11.48	.33	.15	.21	.03

Year	Sweden	Spain	Portugal	Switzerland	Austria	Czechoslovakia	Poland	Finland	Latvia	Esthonia and Lithuania	Greece	Japanese Empire
1919.....	.35	10.38	1.00	.13	.37	.84 <sup>i</sup>	1.06 <sup>j</sup>	.02	.... <sup>b</sup>	.03 <sup>k</sup>	.94	.... <sup>b</sup>
1920.....	.36	10.25	1.10	.12	.37	1.57	1.79	.02	.04	.19	1.08	2.20
1921.....	.36	10.39	1.27	.12	.38	1.56	2.09	.02	.05	.21	.99	2.15
1922.....	.36	10.31	1.12	.10	.46	1.53	2.57	.02	.07	.25	.89	2.13
1923.....	.36	10.49	1.12	.10	.48	1.51	2.51	.04	.10	.26	1.07	2.10
1924.....	.35	10.16	1.12	.10	.48	1.50	2.66	.04	.07	.23	.90	2.10
1925.....	...	9.87	....	...	...	1.51	2.51	.04	.05	.21	....	....
Average												
1909-13 <sup>g</sup> .....	.26	9.55	1.21	.10	.63	1.72	3.35	.01	.08	.23	1.13 <sup>l</sup>	1.77
1920-24.....	.36	10.32	1.15	.11	.43	1.53	2.32	.03	.07	.23	.99	2.14

\* Data of U.S. Department of Agriculture.

<sup>a</sup> Includes some native states.<sup>b</sup> Data not available.<sup>c</sup> Former kingdom, Bessarabia, and Bukowina.<sup>d</sup> 1924 figure is for Union of Soviet Republics excluding Far Eastern territories and the Turkestan Republics.<sup>e</sup> Estimate for area sown, not harvested.<sup>f</sup> Winter wheat only.<sup>g</sup> Estimated for present territory where boundary changes have occurred. Russian figures include Asiatic Russia.<sup>h</sup> Four-year average.<sup>i</sup> Bohemia and Moravia only.<sup>j</sup> Former Russian Poland, Eastern and Western Galicia, and Posen.<sup>k</sup> Esthonia only.<sup>l</sup> One year only.

## THE WORLD WHEAT SITUATION, 1924-25

TABLE III.—WHEAT YIELD PER ACRE IN PRINCIPAL PRODUCING AREAS, PRE-WAR AND POST-WAR\*  
(Bushels per acre)

Year	United States	Canada	British India	Australia	Argentina	Chile	Uruguay	Hungary	Bulgaria	Jugoslavia	Romania	Soviet Russia
1919	12.8	10.1	11.8	7.2	12.8	16.6	8.7	.... <sup>a</sup>	14.3	15.1	15.5	... <sup>a</sup>
1920	13.6	14.4	12.6	16.1	11.8	18.4	11.1	14.4	13.7	12.1	12.3	6.7
1921	12.8	12.9	9.7	13.3	13.5	17.5	12.2	18.3	13.1	14.0	12.8	7.2
1922	13.9	17.8	13.0	11.0	12.2	17.6	7.9	15.5	16.9	11.9	14.1	10.5
1923	13.4	20.9	12.1	13.2	14.5	19.9	12.6	20.4	15.7	15.9	15.4	11.8
1924	16.1	12.1	11.6	15.2	12.0	17.8	10.8	14.7	11.5	13.6	9.0	9.1
1925	12.9	19.0	10.3	....	....	....	....	18.8	19.8	20.1	13.6	...
Average												
1909-13	14.7	19.8	12.0	11.9	9.9	20.1	8.2	19.3	15.7	15.6	16.7	10.2
1920-24	13.9	15.7	11.8	13.7	12.9	18.2	11.1	16.7	14.2	13.5	12.6	8.7

Year	Morocco	Algeria	Tunisia	Egypt	United Kingdom	France	Germany	Italy	Belgium	Netherlands	Denmark	Norway
1919	10.6	7.5	5.0	22.8	29.2	16.1	24.8	16.0	31.2	34.7	45.4	26.8
1920	9.0	2.7	4.0	26.6	28.7	18.8	24.3	12.5	33.6	39.4	41.1	25.0
1921	11.9	10.1	7.1	25.4	35.4	24.3	30.3	16.5	42.3	47.6	50.7	23.7
1922	6.2	5.5	4.2	24.1	31.5	18.6	21.2	14.1	35.4	41.1	39.0	25.7
1923	8.9	11.5	6.4	26.5	31.8	20.2	29.1	19.5	38.8	40.6	43.2	22.6
1924	10.2	4.9	4.7	22.8	29.3	21.0	24.6	15.1	37.9	38.9	29.4	19.7
1925	8.4	11.8	6.9	....	....	23.9	....	20.6	37.5	40.2	....	....
Average												
1909-13	10.0	10.0	4.8	25.6	31.6	19.7	32.6	15.6	38.4	36.1	42.0	24.2
1920-24	9.2	6.8	5.4	25.0	31.4	20.6	26.0	15.5	37.7	42.0	40.5	21.7

Year	Sweden	Spain	Portugal	Switzerland	Austria	Czechoslovakia	Poland	Finland	Latvia	Esthonia and Lithuania	Greece	Japanese Empire
1919	26.9	12.4	8.2	30.0	13.8	18.4	20.9	13.0	.... <sup>a</sup>	15.7 <sup>b</sup>	10.4	18.7
1920	28.8	13.5	9.4	30.1	14.6	16.8	12.7	12.1	10.0	13.5	10.4	18.8
1921	34.3	14.0	7.4	30.5	17.3	24.9	17.9	22.4	17.0	15.6	11.3	18.5
1922	26.4	12.2	8.7	22.8	16.1	22.0	16.5	32.3	13.7	16.4	10.7	18.8
1923	30.5	15.0	11.5	34.2	18.7	24.0	19.8	17.2	15.8	14.3	12.5	16.8
1924	19.6	12.0	7.7	30.2	17.6	21.5	12.2	21.4	21.4	16.8	10.7	17.1
1925	....	16.5	....	....	....	24.2	23.3	21.3	39.5	28.4	....	....
Average												
1909-13	31.8	13.7	9.8	31.6	20.3	22.0	19.0	17.1	17.8	15.6	14.4	18.2
1920-24	27.8	13.3	8.9	30.0	16.9	21.8	15.9	20.8	16.2	15.4	11.2	18.0

\* Computed from acreage and production figures in Appendix Tables I and II.

<sup>a</sup> Data not available.<sup>b</sup> Esthonia only.

TABLE IV.—RYE PRODUCTION IN PRINCIPAL PRODUCING AREAS, PRE-WAR AND POST-WAR\*  
(Million bushels)

Year	United States	Canada	Hungary	Bulgaria	Jugoslavia	Romania	Soviet Russia	France	Germany	Italy	Belgium	Netherlands
1919.....	75.5	10.2	.... <sup>a</sup>	6.1	9.8	10.0	.... <sup>a</sup>	30.6 <sup>b</sup>	240.2	4.6 <sup>c</sup>	14.5	14.7
1920.....	60.5	11.3	20.6	6.3	6.1	9.4	368.9	34.5	194.3	4.5	18.2	14.8
1921.....	61.7	21.5	23.2	6.1	6.2	9.1	403.1	44.4	267.6	6.5	21.3	15.0
1922.....	103.4	32.4	25.1	7.5	4.5	9.2	569.3	38.4	206.0	5.6	18.4	17.1
1923.....	63.1	23.2	31.3	6.9	5.9	9.4	749.9	36.5	263.0	6.5	20.8	14.6
1924.....	63.4	13.8	22.1	4.4	5.5	6.0	673.5	40.2	225.6	6.1	20.7	15.6
1925 <sup>d</sup> .....	52.0	14.4	31.3	8.9	8.4	8.4	819.0	44.8	301.9	6.7	21.7	15.4
Average												
1909-13 <sup>e</sup> .....	36.1	2.1	31.4	7.5	9.0	20.6	743.5	52.5	368.3	6.3	23.6	16.4
1920-24.....	70.4	20.4	24.5	6.2	5.6	8.6	552.9	38.8	231.3	5.8	19.9	15.4

Year	Denmark and Norway	Sweden	Spain	Portugal	Switzerland	Austria	Czecho-Slovakia	Poland	Finland	Latvia	Estonia	Lithuania
1919.....	15.9 <sup>o</sup>	22.6	23.3	3.9	1.6	9.0	32.7	103.0 <sup>f</sup>	8.7	... <sup>c</sup>	5.1	17.3
1920.....	14.2	22.4	27.8	5.2	1.6	10.1	32.9	73.7	7.1	4.7	6.2	16.7
1921.....	13.3	26.6	28.1	4.6	1.6	13.2	53.7	167.6	11.7	9.8	5.9	21.0
1922.....	15.1	22.7	26.3	5.3	1.5	13.6	51.1	197.4	10.5	6.8	5.8	24.2
1923.....	15.9	24.4	28.1	5.4	1.6	15.8	53.4	234.7	9.4	10.8	6.6	25.6
1924.....	10.9	11.1	26.3	5.0	1.4	16.2	44.7	143.9	11.3	7.8	5.5	18.3
1925 <sup>d</sup> .....	....	29.4	29.9	...	1.6	24.6	53.4	266.8	11.8	13.0	7.2	28.2
Average												
1909-13 <sup>e</sup> .....	20.1	24.9	27.6	3.0	1.8	23.8	63.5	218.9	10.5	13.1	8.1	24.3
1920-24.....	13.9	21.4	27.3	5.1	1.5	13.6	47.2	163.5	10.0	8.0	6.0	21.2

\* Data of U.S. Department of Agriculture.

<sup>a</sup> Data not available.

<sup>b</sup> Includes only part of Alsace-Lorraine.

<sup>c</sup> Old boundaries.

<sup>d</sup> Forecast or early estimate.

<sup>e</sup> Including U.S. Department of Agriculture estimates for area within post-war boundaries. Russian figures include Asiatic territory.

<sup>f</sup> Former Russian Poland, Western Galicia, and Posen.



TABLE V.—UNITED STATES WHEAT ACREAGE  
PLANTED, ABANDONED, AND HARVESTED\*  
(Million acres)

Crop of	Winter wheat			Spring wheat harvested	Total harvested
	Planted	Abandoned	Harvested		
1920.....	44.9	4.84	40.0	21.1	61.1
1921.....	45.6	2.21	43.4	20.3	63.7
1922.....	47.9	5.57	42.4	20.0	62.4
1923.....	46.1	6.58	39.5	21.1	59.6
1924.....	39.7	3.31	36.4	17.8	54.2
1925.....	42.3	9.50	32.8	21.2	54.0
Average 1909-13.....	32.0	3.60	28.4	18.7	47.1

\* Official data of U.S. Department of Agriculture. See especially *Agriculture Yearbook, 1924*, p. 560, and crop reports.

TABLE VI.—UNITED STATES WHEAT CROP CONDITION ESTIMATES, PRE-WAR AND POST-WAR\*  
(Percentages of normal)

Date	1909-13 average	1921	1922	1923	1924	1925
	a) WINTER WHEAT					
December 1..	88.7	87.9	76.0	79.5	88.0	81.0
April 1.....	83.7	91.0	78.4	75.2	83.0	68.7
May 1.....	84.7	88.8	83.5	80.1	84.8	77.0
June 1.....	79.8	77.9	81.9	76.3	74.0	66.5
Harvest.....	79.1	77.2	77.0	76.8	77.9	65.9
Yield per acre (bu.).....	15.6	13.8	13.8	14.5	16.2	12.7
b) SPRING WHEAT						
June 1.....	94.4	93.4	90.7	90.2	82.3	87.1
July 1.....	78.2	80.8	83.7	82.4	81.9	88.1
August 1.....	75.4	66.6	80.4	69.6	79.7	73.9
Harvest.....	74.9	62.5	80.1	65.1	82.3	75.0 <sup>a</sup>
Yield per acre (bu.).....	13.3	10.6	14.1	11.2	15.9	13.3 <sup>b</sup>

\* Data of U.S. Department of Agriculture. See especially *Agriculture Yearbook, 1923*, p. 606; *Crops and Markets*; and press releases.

<sup>a</sup> September 1 estimate.

<sup>b</sup> October 1 estimate.

TABLE VII.—UNITED STATES WHEAT CROP FORECASTS AND ESTIMATES, 1924, 1925\*  
(Million bushels)

Date	Winter		Spring		Total	
	1924	1925	1924	1925	1924	1925
April 1.....	549	474	...	...	...	...
May 1.....	553	445	...	...	...	...
June 1.....	509	407	184	254	693	661
July 1.....	543	404	197	276	740	680
August 1.....	589	416	225	263	814	679
September 1..	589	416	247	284	837	700
October 1....	589	416	266	281	856	697
December 1..	590	...	283	...	873	...

\* Data of U.S. Department of Agriculture.

TABLE VIII.—UNITED STATES WHEAT PRODUCTION BY CLASSES\*  
(Million bushels)

Year	Hard red spring	Durum	Hard red winter	Soft red winter	Pacific white	Total
1920.....	138.9	52.2	302.4	247.3	91.2	832.0
1921.....	131.1	57.0	290.0	237.4	99.4	814.9
1922.....	169.6	90.8	280.0	247.9	79.3	867.6
1923.....	126.9	55.3	241.8	271.6	101.8	797.4
1924.....	191.4	73.6	313.5	236.8	57.4	872.7
Average 1920-24.....	151.6	65.8	285.5	248.2	85.8	836.9

\* Classification by U.S. Department of Agriculture. *Agriculture Yearbook, 1924*, p. 579.

TABLE IX.—CANADIAN WHEAT PRODUCTION FORECASTS AND ESTIMATES, 1921-25\*  
(Million bushels)

Date	1921	1922	1923	1924	1925
June 30.....	309	339	366	319	365
July 31.....	288	321	383	282	375
August 31.....	294	389	470	292	392
October 31.....	330	391	470 <sup>a</sup>	272	422
December 31.....	301	400	474	262	...

\* Canadian Dominion Bureau of Statistics, *Monthly Bulletin of Agricultural Statistics*, and press releases.

<sup>a</sup> September 30.

TABLE X.—BROOMHALL'S SUCCESSIVE ESTIMATES OF EXPORT SURPLUSES AND IMPORTERS' REQUIREMENTS, 1924-25\*  
(Million bushels)

Date of report	Available for export	Margin over requirements	Probable shipments	European requirements	ex-European requirements
August 26....	796	52	744	632	112
September 16	804	60	744	632	112
October 14...	820	76	744	632	112
October 21...	808	64	744	632	112
November 11	788	44	744	632	112
November 18.	760	40	720	624	96
December 23.	800	80	720	624	96
January 6....	796	76	720	624	96
January 13...	812	92	720	624	96
January 27...	804	84	720	624	96
March 3.....	816	64	752	664	88
May 19.....	812	76	736	664	72
Actual shipments.....	...	..	715	640	75

\* Compiled from Broomhall's *Corn Trade News*. For corresponding data for two preceding crop years, see *WHEAT STUDIES*, December 1924, I, 54.

TABLE XI.—WHEAT RECEIPTS AT PRIMARY MARKETS IN THE UNITED STATES AND AT FORT WILLIAM AND PORT ARTHUR, CANADA, MONTHLY, CROP YEARS 1920-25\*

(Million bushels)

Month	United States primary markets					Fort William and Port Arthur				
	1920-21	1921-22	1922-23	1923-24	1924-25	1920-21	1921-22	1922-23	1923-24	1924-25
August .....	39.6	68.6	60.6	65.3	93.0	4.9	3.2	3.7	2.0	1.3
September.....	42.7	61.4	57.7	45.3	82.1	12.6	27.5	37.0	28.3	7.1
October.....	44.6	41.6	48.3	40.5	88.0	32.0	46.2	65.1	67.0	40.9
November.....	37.2	25.6	42.5	37.2	60.5	33.4	40.8	56.8	72.5	42.7
December.....	31.6	24.0	45.3	28.4	36.3	27.9	23.0	32.0	51.9	20.3
January.....	29.0	17.5	37.6	15.9	24.7	7.8	7.7	11.6	12.7	4.1
February.....	21.2	22.7	21.6	19.8	19.9	4.5	4.2	3.2	3.9	6.2
March.....	22.6	20.2	21.7	18.0	17.3	4.4	9.0	6.0	2.5	8.5
April.....	23.3	15.6	21.9	10.1	10.4	3.7	6.1	7.6	6.4	8.1
May.....	27.0	29.1	16.7	15.4	17.7	4.4	11.7	10.6	15.8	7.1
June.....	30.2	21.0	18.2	16.4	21.9	3.6	5.6	6.9	21.2	4.1
July.....	62.0	39.5	33.8	35.1	41.8	4.2	5.4	6.0	13.1	6.7
TOTAL.....	411.0	386.8	425.9	347.4	513.6	143.4	190.4	246.5	297.3	157.1

\* United States data based upon unofficial weekly statistics from *Survey of Current Business*; Canadian official data from *Canadian Grain Statistics*, which gives also receipts at Vancouver.

TABLE XII.—BROOMHAL'S ESTIMATES OF INTERNATIONAL SHIPMENTS OF WHEAT AND RYE, PRE-WAR AND POST-WAR, FOR CROP YEARS ENDING APPROXIMATELY AUGUST 1\*

(Million bushels)

Export area	1919-20	1920-21	1921-22	1922-23	1923-24 <sup>a</sup>	1924-25	1909-14 average
a) WHEAT, INCLUDING FLOUR							
North America.....	291.6	432.2	404.0	455.1	454.4	422.6	206.2
Argentina and Uruguay.....	259.2	63.8	118.3	138.3	174.4	121.4	82.1
Australia.....	85.9	82.1	110.8	47.8	77.9	117.1	54.5
Russia, Danube, and Black Sea.....	....	1.6	5.6	6.9	36.0	13.5	224.7
British India.....	....	11.2	0.2	26.1	17.4	31.7	46.9
Other countries.....	....	....	8.1	2.1	15.1	8.9	8.0
TOTAL.....	636.7	591.0	647.1	676.4	775.2 <sup>a</sup>	715.2	622.5
To Europe.....	587.5	541.5	546.7	585.9	626.5 <sup>a</sup>	639.7	540.8
Ex-Europe.....	49.0	49.5	100.4	90.5	148.7 <sup>a</sup>	75.5	81.7
b) RYE, INCLUDING RYE FLOUR							
Russia and Danube.....	.03	1.3	.02	2.7	41.3	.4	24.3
North America.....	41.7	40.0	34.9	58.7	26.8	61.9	.9
Miscellaneous.....	1.3	1.7	1.3	1.5	....	.1	28.8 <sup>b</sup>
TOTAL.....	43.0	43.0	36.2	62.9	68.1 <sup>a</sup>	62.4	54.0

\* Data from Broomhall's *Corn Trade News*.

<sup>a</sup> For 53 weeks.

<sup>b</sup> Chiefly Germany, which since the war has ceased to be a rye exporter.

## THE WORLD WHEAT SITUATION, 1924-25

TABLE XIII.—INTERNATIONAL TRADE IN WHEAT, INCLUDING FLOUR, PRE-WAR AND POST-WAR\*

(Million bushels)

## A.—NET EXPORTS

Crop year August-July	United States	Canada	India	Aus- tralia	Argen- tina	Chile	Hun- gary	Bul- garia	Jugo- Slavia	Rou- mania	Russia	Morocco
1919-20.....	235.6	92.8	2.5	101.0	266.0	1.3 <sup>a</sup>	(.54) <sup>b</sup>	.05	.... <sup>c</sup>	(.71) <sup>b</sup>	.... <sup>c</sup>	... <sup>d</sup>
1920-21.....	304.9	165.8	15.1	88.9	63.6	2.2 <sup>a</sup>	(.01) <sup>b</sup>	1.77	3.76	1.41	.... <sup>c</sup>	0.3 <sup>a</sup>
1921-22.....	248.6	185.4	(13.8) <sup>b</sup>	114.6	118.1	(.04) <sup>a b</sup>	9.40	4.52	3.90	3.51	.... <sup>c</sup>	0.7 <sup>a</sup>
1922-23.....	197.2	279.3	28.6	50.3	139.4	1.4 <sup>a</sup>	5.16	3.40 <sup>a</sup>	1.01	1.65	.... <sup>c</sup>	0.15 <sup>a</sup>
1923-24.....	123.9	346.1	20.1	85.6	172.2	7.0 <sup>a</sup>	16.82	.... <sup>c</sup>	5.84	8.97	23.2 <sup>c</sup>	... <sup>c</sup>
1924-25.....	253.7	192.1	38.2	123.6	123.0	7.7	13.55	.... <sup>c</sup>	9.55	.... <sup>c</sup>	(9.4) <sup>b c</sup>	... <sup>c</sup>
Average												
1909-14.....	108.5	95.6	49.8	55.1	84.7	2.4 <sup>f</sup>	43.14 <sup>g</sup>	11.27 <sup>g</sup>	.... <sup>c</sup>	54.62 <sup>g</sup>	164.5 <sup>g</sup>	0.3 <sup>f</sup>
1920-24.....	218.6	244.1	12.5	84.8	123.3	2.6 <sup>f</sup>	7.84	3.23 <sup>h</sup>	3.63	3.88	.... <sup>c</sup>	0.4 <sup>h</sup>

## B.—NET IMPORTS

Crop year August-July	Algeria	Tunis	Egypt	United Kingdom (incl. I. F. S.)	France	Germany	Italy	Belgium	Nether- lands	Denmark	Norway	Sweden
1919-20.....	(1.99) <sup>i</sup>	(0.6) <sup>i</sup>	9.12	212.9	88.1	.... <sup>c</sup>	79.8	29.8	18.7	1.61	6.48	7.39
1920-21.....	5.6	1.3	11.21	200.1	68.3	59.8	99.4	32.2	18.9	0.35	3.85	6.61
1921-22.....	(4.2) <sup>i</sup>	(1.3) <sup>i</sup>	6.84	208.2	17.1	69.5	100.5	40.5	19.8	4.01	5.17	3.85
1922-23.....	2.3	0.7	7.68	210.2	45.6	37.5	115.7	39.5	23.9	6.28	6.90	8.78
1923-24.....	(7.3) <sup>i</sup>	(2.9) <sup>i</sup>	8.52	241.4	53.6	30.9	69.7	39.8	26.7	9.41	6.10	12.66
1924-25.....	0.5	(0.1) <sup>i</sup>	9.91	228.2 <sup>j</sup>	30.6 <sup>b</sup>	80.9	88.7	35.3 <sup>i</sup>	27.1	7.46	5.59	10.70
Average												
1909-14.....	(5.3) <sup>i</sup>	0.8	0.02	217.7	43.6 <sup>g</sup>	67.8 <sup>g</sup>	53.0 <sup>g</sup>	50.2	22.6	6.65 <sup>g</sup>	3.78	7.07
1920-24.....	(0.9) <sup>i</sup>	(0.5) <sup>i</sup>	8.56	215.0	46.1	49.4	96.3	38.0	22.3	5.01	5.50	7.97

## B.—NET IMPORTS (concluded)

Crop year August-July	Spain	Portugal	Switzer- land	Austria	Czecho- Slovakia	Poland	Finland	Latvia	Esthonia and Lithuania	Greece	Japan
1919-20.....	17.16	4.5 <sup>a</sup>	11.9	13.6	.... <sup>c</sup>	.... <sup>c</sup>	2.99	.... <sup>c</sup>	.... <sup>c</sup>	13.5	12.8
1920-21.....	19.83	6.6 <sup>a</sup>	12.9	14.6	18.3	.... <sup>c</sup>	2.46	.58	(.03) <sup>a i</sup>	10.6	5.8
1921-22.....	8.02	... <sup>c</sup>	13.2	19.0	11.6	1.20	3.39	.74	0.50 <sup>a m</sup>	13.7	24.9
1922-23.....	(0.19) <sup>i</sup>	... <sup>c</sup>	16.6	13.4	10.3	2.52	5.12	1.11	0.76 <sup>a m</sup>	17.3	14.5
1923-24.....	(0.32) <sup>i</sup>	... <sup>c</sup>	17.1	18.3	21.2	2.49 <sup>n</sup>	5.54	1.78	0.97 <sup>m</sup>	20.2	29.1
1924-25.....	1.37	... <sup>c</sup>	13.9	14.9 <sup>i</sup>	22.0	10.88 <sup>n</sup>	4.58	1.96	0.86 <sup>m</sup>	19.8	12.2
Average											
1909-14.....	6.19	3.0 <sup>f</sup>	16.9	10.5 <sup>g</sup>	.... <sup>c</sup>	.... <sup>c</sup>	.... <sup>c</sup>	.... <sup>c</sup>	.... <sup>c</sup>	6.9 <sup>f</sup>	4.1
1920-24.....	6.83	5.5 <sup>g</sup>	14.9	16.3	15.3	2.07 <sup>h</sup>	4.13	1.05	... <sup>c</sup>	15.4	18.6

\* Data from official sources and International Institute of Agriculture.

<sup>a</sup> Calendar year.<sup>b</sup> Net imports.<sup>c</sup> Data not available.<sup>d</sup> Net imports for calendar year 1920 were 1,047 bushels.<sup>e</sup> Broomhall's shipments, probably incomplete.<sup>f</sup> Calendar year average.<sup>g</sup> Data not comparable with those of post-war years because of boundary changes.<sup>h</sup> Average of three calendar years.<sup>i</sup> Net exports.<sup>j</sup> Includes for Irish Free State for July a rough estimate from Broomhall of about 1.4 million bushels.<sup>k</sup> From January 11, 1925, French shipments to the Saar region are no longer counted as exports from France. These, consisting largely of flour, were as follows (in thousand bushels) in the last three calendar years: 1922—1,502; 1923—1,992; 1924—3,200.<sup>l</sup> Eleven months.<sup>m</sup> Esthonia only.<sup>n</sup> Flour only.<sup>o</sup> Average of two calendar years.<sup>p</sup> Three-year average.

TABLE XIV.—INTERNATIONAL TRADE IN WHEAT FLOUR, PRE-WAR AND POST-WAR\*

(Thousand barrels of 196 pounds)

## A.—NET EXPORTS

Crop year August-July	United States	Canada	India	Aus- tralia	Argen- tina	Chile	Hun- gary	Bul- garia	Jugo- Slavia	Rou- mania	France	Italy
1919-20.....	22,153	6,445	620	5,872	3,254	107 <sup>a</sup>	(105) <sup>b</sup>	10	... <sup>c</sup>	(93) <sup>b</sup>	(3,136) <sup>b</sup>	(1,458) <sup>b</sup>
1920-21.....	13,665	6,688	835	2,281	353	138 <sup>a</sup>	(2) <sup>b</sup>	83	426	150	66	(123) <sup>b</sup>
1921-22.....	14,899	7,702	496	3,677	949	78 <sup>a</sup>	1,864	243	393	115	372	91
1922-23.....	14,458	10,990	538	4,081	842	132 <sup>a</sup>	1,137	... <sup>c</sup>	164	294	478	394
1923-24.....	17,019	11,932	716	5,222	1,772	181	2,338	... <sup>c</sup>	417	936	252	1,508
1924-25.....	13,881	10,108	894	4,626	1,625	243	2,027	... <sup>c</sup>	697	... <sup>c</sup>	468 <sup>d</sup>	1,248
Average												
1909-14.....	10,639	3,897	613	1,802	1,307	67 <sup>a</sup>	7,443 <sup>e</sup>	502 <sup>a</sup>	80 <sup>a</sup>	1,091 <sup>e</sup>	133 <sup>a</sup>	793 <sup>e</sup>
1920-24.....	15,010	9,327	646	3,815	979	148 <sup>f</sup>	1,334	163 <sup>g</sup>	350	374	292	468

## B.—NET IMPORTS

Crop year August-July	Belgium	Spain	Algeria	Tunis	Egypt	United Kingdom	Germany	Nether- lands	Den- mark
1919-20.....	206	(106) <sup>h</sup>	(175) <sup>h</sup>	(24) <sup>h</sup>	1,297	7,226	... <sup>c</sup>	110	252
1920-21.....	(2) <sup>h</sup>	163	205	(4) <sup>h</sup>	2,046	6,552	306 <sup>i</sup>	592	45
1921-22.....	(236) <sup>h</sup>	(53) <sup>h</sup>	(36) <sup>h</sup>	20	1,478	7,560	62 <sup>i</sup>	560	555
1922-23.....	24	(41) <sup>h</sup>	80	79	1,636	5,579 <sup>j</sup>	567 <sup>i</sup>	659	555
1923-24.....	(481) <sup>h</sup>	(66) <sup>h</sup>	(81) <sup>h</sup>	19	1,789	2,951 <sup>j</sup>	4,189 <sup>i</sup>	1,287	453
1924-25.....	(726) <sup>h</sup>	(59) <sup>h</sup>	55	107	1,907	3,271 <sup>j</sup>	5,384	698	341
Average									
1909-14.....	(704) <sup>h</sup>	(12) <sup>h</sup>	(126) <sup>h</sup>	189	1,760 <sup>f</sup>	5,193	(1,827) <sup>e</sup>	2,028	586 <sup>e</sup>
1920-24.....	(174) <sup>h</sup>	1	42	28	1,737	..... <sup>i</sup>	1,281	774	402

## B.—NET IMPORTS (concluded)

Crop year August-July	Norway	Sweden	Austria	Czecho- Slovakia	Poland	Finland	Latvia	Greece	Japan
1919-20.....	385	72	1,914	... <sup>c</sup>	... <sup>c</sup>	470	... <sup>c</sup>	661	356
1920-21.....	241	272	1,361	3,135	... <sup>c</sup>	434	92	229	157
1921-22.....	457	34	1,811	2,130	115	724	103	148	559
1922-23.....	603	75	2,016	1,997	534	1,091	72	1,094	147
1923-24.....	619	275	2,616	3,583	533	1,187	32	1,433	36
1924-25.....	563	170	1,604 <sup>k</sup>	3,289	2,332 <sup>m</sup>	981	6	1,257 <sup>k</sup>	(519) <sup>h</sup>
Average									
1909-14.....	639	87	(115) <sup>o</sup>	... <sup>c</sup>	... <sup>c</sup>	... <sup>c</sup>	... <sup>c</sup>	92 <sup>e</sup>	181
1920-24.....	480	164	1,951	2,711	394 <sup>n</sup>	859	75	726	225

\* Data from official sources and International Institute of Agriculture.

<sup>a</sup> Calendar year.<sup>b</sup> Net imports.<sup>c</sup> Data not available.<sup>d</sup> From January 11, 1925, shipments to Saar are not counted as exports from France.<sup>e</sup> Data not comparable with those of post-war years because of boundary changes.<sup>f</sup> Calendar year average. Net exports of Chile for the calendar year 1924 were 243.<sup>g</sup> Two-year average.<sup>h</sup> Net exports.<sup>i</sup> Data incomplete because of territories occupied by foreign armies.<sup>j</sup> Irish Free State excluded.<sup>k</sup> Eleven months.<sup>l</sup> Comparable average cannot be computed.<sup>m</sup> Ten months.<sup>n</sup> Three-year average.

TABLE XV.—MONTHLY NET EXPORTS OF WHEAT AND FLOUR BY PRINCIPAL EXPORTERS\*

(Million bushels)

Years	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July
1920-21.....	47.4	44.5	55.7	51.4	59.0	50.2	49.7	49.7	56.2	65.3	61.1	48.6
1921-22.....	80.7	55.0	59.1	59.3	57.3	40.3	51.6	56.8	41.3	54.7	50.8	46.3
1922-23.....	63.7	50.3	71.1	85.7	71.0	49.9	48.2	52.1	42.4	52.7	64.6	44.9
1923-24.....	49.7	46.7	61.5	86.1	80.7	51.7	60.5	62.8	51.9	80.2	67.7	48.4
1924-25.....	49.7	63.9	88.2	77.1	72.1	60.6	67.5	66.6	52.6	52.5	43.3	36.5
Average												
1909-14.....	59.6	61.8	67.0	62.9	56.1	43.4	47.3	59.6	55.8	56.6	48.5	49.3
1920-24.....	60.4	49.1	61.8	70.6	67.0	48.0	52.5	55.4	48.0	63.2	61.0	47.0

\* Official data for United States, Canada, India, Argentina, Australia, and, for pre-war years, Russia and the Danube basin. The addition of the Danube basin in 1924-25 would swell the autumn figures most.

## THE WORLD WHEAT SITUATION, 1924-25

TABLE XVI.—INTERNATIONAL TRADE IN WHEAT AND FLOUR, MONTHLY, 1924-25\*

(Million bushels)

A.—NET EXPORTS

Month	United States	Canada	India	Australia	Argentina	Chile	Hungary	Jugo-Slavia
1924 August.....	21.0	11.0	3.0	5.6	9.1	.75	1.45	1.36
September.....	38.9	14.6	1.6	3.4	5.4	.54	2.16	2.29
October.....	53.1	19.4	4.9	3.7	7.2	.30	2.46	1.99
November.....	34.8	31.0	4.7	2.0	4.6	.56	1.28	1.37
December.....	23.6	33.5	3.6	3.7	7.7	.21	1.20	1.31
1925 January.....	12.6	10.0	4.4	14.3	19.3	.17	.67	.57
February.....	10.1	7.8	6.3	21.7	21.6	.36	.65	.38
March.....	16.1	10.6	3.1	20.3	16.4	1.93	.75	.13
April.....	12.4	8.1	0.7	19.8	11.6	1.82	.62	.05
May.....	12.3	17.0	1.2	15.4	6.6	.77	.89	.03
June.....	10.7	12.2	3.7	9.9	6.8	.25	.77	.02
July.....	8.1	16.7	1.0	3.9	6.8	.08	.66	.05

B.—NET IMPORTS

Month	Egypt	United Kingdom	Irish Free State	France	Germany	Italy	Belgium	Netherlands	Denmark
1924 August.....	.42	23.42	2.27	6.00	1.36	5.45	3.38	1.87	.44
September.....	.54	17.94	1.09	4.23	3.29	2.59	3.92	1.87	.40
October.....	.80	20.01	1.59	4.08	8.33	2.71	4.20	3.88	.71
November.....	.81	21.03	2.13	4.01	12.00	5.03	2.85	2.77	.95
December.....	.68	20.38	2.28	2.88	9.38	8.66	3.52	3.23	1.07
1925 January.....	1.12	14.47	1.53	.75	7.13	10.02	3.35	1.80	.54
February.....	1.04	11.62	1.28	1.41	4.57	9.23	2.46	1.68	.32
March.....	.90	15.89	1.45 <sup>a</sup>	1.17	3.86	10.63	2.63	1.36	.43
April.....	.96	15.12	1.30 <sup>a</sup>	1.20	5.24	13.24	2.49	1.70	.69
May.....	.77	16.05	1.57 <sup>a</sup>	.66	6.58	10.91	3.83	2.27	.69
June.....	.88	15.38	1.43	1.86	8.09	6.16	2.70	2.12	.72
July.....	.99	17.49	....	2.36	11.06	4.03	....	2.57	.51

B.—NET IMPORTS (concluded)

Month	Norway	Sweden	Switzerland	Austria	Czecho-Slovakia	Finland	Latvia	Estonia	Greece
1924 August.....	.13	.91	1.12	1.56	2.21	.33	.21	.03	2.08
September.....	.35	.91	.67	1.52	2.61	.30	.16	.02	2.01
October.....	.92	.77	.70	2.02	2.73	.51	.23	.06	1.91
November.....	.92	1.06	1.57	1.06	3.20	.44	.20	.08	2.06
December.....	.53	.97	2.29	3.32	2.11	.48	.08	.14	1.54
1925 January.....	.35	.63	2.72	} 1.47 {	1.65	.43	.14	.12	1.93
February.....	.70	.99	.80		1.47	.29	.14	.08	1.79
March.....	.64	1.14	.97	.89	1.52	.29	.19	.10	1.55
April.....	.15	1.16	.93	} 3.02 {	1.30	.26	.15	.06	1.52
May.....	.31	.86	.57		1.30	.31	.14	.06	1.92
June.....	.45	.77	.59		1.21	.37	.13	.07	1.51
July.....	.15	.56	.96	....	.65	.57	.18	.06	....

\* Data from official sources and International Institute of Agriculture.

<sup>a</sup> Broomhall's *Corn Trade News*.<sup>b</sup> Data not available.

TABLE XVII.—UNITED STATES WHEAT AND FLOUR EXPORTS, CROP YEARS 1920-21 TO 1924-25\*  
(Thousand bushels)

Crop year July-June	Wheat inspected for export						Unclass- ified wheat	Total wheat exports	Flour as wheat	Total exports	Total imports (less re- exports)	Net exports
	Hard red spring	Durum <sup>a</sup>	Hard red winter	Soft red winter	White (Pacific)	Mixed <sup>b</sup>						
1920-21.....	10,081	4,872	132,701	34,281	27,729	68,615	14,989	293,268	72,809	366,077	56,413	309,664
1921-22.....	20,145	8,697	78,477	18,998	43,652	18,963	19,389	208,321	71,086	279,407	16,869	262,538
1922-23.....	8,718	12,271	51,654	20,846	13,602	25,047	22,813	154,951	66,972	221,923	19,737	202,186
1923-24.....	1,022	4,908	19,640	9,810	18,653	5,435	19,325	78,793	77,637	156,430	27,957	128,473
1924-25.....	16,760	5,945	90,840	6,944	10,063	9,386	55,552	195,490 <sup>c</sup>	62,533	258,023	6,107	251,916

\* Data of U.S. Departments of Agriculture and Commerce. See especially *Agriculture Yearbook, 1924*, p. 579, and *Crops and Markets Supplement, July 1925*, p. 232.

<sup>a</sup> Understates durum exports. See note b.

<sup>b</sup> It was estimated that 20,030,000 bushels of durum were mixed with spring wheat in 1920-21. Other mixed wheat exports in 1920-21 were largely soft and hard winter wheat shipped through Gulf ports; in 1921-22 and 1922-23, 70 per cent of the exports of mixed wheat is estimated as durum. See *Agriculture Yearbook, 1924*, p. 578. Probably at least

70 per cent of mixed wheat in 1923-24 and 1924-25 was durum. Because reported inspections of classes for export are limited to Atlantic, Gulf, and Pacific ports, considerable quantities of durum wheat passing from lake ports via Montreal escape classification.

<sup>c</sup> This is the total as given in *Monthly Summary of Foreign Commerce, June 1925*.

TABLE XVIII.—OCEAN FREIGHT RATES ON WHEAT AND CORN, CALENDAR YEAR 1913, CROP YEARS 1921-25\*  
(Cents per bushel)

Period	Canada to United Kingdom	New York to Liverpool	Northern Range to United Kingdom	Northern Range to Genoa	Northern Pacific to United Kingdom	La Plata down river to United Kingdom	Karachi to United Kingdom	Australia to United Kingdom
1913 (January-December)....	8.3	5.8	8.0	11.9	25.7	10.6	12.2	20.4
1921-22 (August-July).....	10.7	8.5	10.3	12.5	25.3	14.6	12.8	28.6
1922-23 (August-July).....	9.2	5.5	8.0	11.0	22.2	14.3	15.4	23.6
1923-24 (August-July).....	9.4	6.8	8.6	10.4	21.2	13.7	15.0	21.8
1924-25 (August-July).....	9.4	6.3	8.8	10.5	21.3	12.0	14.7	25.2
1924 July.....	7.7	4.1	7.0	8.9	18.8	12.4	13.4	18.8
August.....	8.9	4.6	7.6	9.6	18.4	13.9	13.3	19.5
September.....	11.0	6.3	9.3	11.3	19.6	13.8	15.4	25.4
October.....	10.9	8.6	9.5	11.9	22.3	13.7	15.9	27.3
November.....	10.8	8.7	9.8	11.1	22.0	12.7	16.0	28.8
December.....	9.7	8.3	9.4	10.5	22.0	14.8	15.8	28.3
1925 January.....	9.4	7.9	9.4	10.5	22.4	14.9	17.4	30.1
February.....	10.1	7.1	9.7	11.6	23.2	12.8	17.0	31.3
March.....	9.0	5.5	8.8	10.5	21.6	10.5	15.5	26.3
April.....	9.0	4.9	8.6	10.2	21.6	9.6	14.6	22.9
May.....	9.1	4.6	8.6	10.1	22.3	9.7	12.9	22.7
June.....	7.0	4.6	7.2	9.4	20.8	8.1	11.9	19.6
July.....	8.5	4.6	7.4	9.8	20.2	9.1	11.5	17.9

\* Averages computed from weekly rates published in *International Crop Report and Agricultural Statistics*.

## THE WORLD WHEAT SITUATION, 1924-25

TABLE XIX.—APPARENT DOMESTIC UTILIZATION OF WHEAT (DISREGARDING CARRYOVERS)  
IN VARIOUS COUNTRIES, PRE-WAR AND POST-WAR\*

(Million bushels)

Crop year August-July	United States	Canada	British India	Aus- tralia <sup>a</sup>	Argen- tina <sup>a</sup>	Chile <sup>a</sup>	Hun- gary	Bul- garia	Jugo- Slavia	Rou- mania	Morocco
1919-20.....	732.4	100.5	277.8	-17.6 <sup>b</sup>	17.8 <sup>b</sup>	18.6	.... <sup>c</sup>	29.7	.... <sup>d</sup>	66.7	.... <sup>d</sup>
1920-21.....	528.1	97.4	362.8	29.4	93.6	21.0	38.3	28.2	39.2	59.9	17.9
1921-22.....	566.3	115.5	264.2	44.0	48.8	24.0	43.3	24.7	47.9	75.1	22.9
1922-23.....	670.4	120.5	338.4	46.5	53.8	24.5	49.5	33.6 <sup>e</sup>	43.5	90.4	12.2
1923-24.....	673.5	128.1	352.6	43.5	75.3	20.5	50.9	35.7 <sup>e</sup>	55.3	93.3	19.9
1924-25.....	619.0	70.0	322.4	.... <sup>d</sup>	.... <sup>d</sup>	.... <sup>d</sup>	38.0	30.3 <sup>e</sup>	48.2	67.4 <sup>e</sup>	23.6
Average											
1909-14.....	581.6	101.5	302.0	40.6	51.6	17.7	.... <sup>f</sup>	.... <sup>f</sup>	.... <sup>f</sup>	.... <sup>f</sup>	16.7
1920-24.....	609.6	115.4	329.5	40.8	67.9	22.5	45.5	30.5 <sup>e</sup>	46.5	79.7	18.2

Crop year August-July	Algeria	Tunis	Egypt	United Kingdom	France	Ger- many	Italy	Belgium	Nether- lands	Den- mark	Norway	Sweden
1919-20.....	19.0	6.4	39.2	282.2	275.2	.... <sup>d</sup>	.... <sup>o</sup>	40.4	24.6	.... <sup>o</sup>	7.6	16.8
1920-21.....	14.0	6.5	42.9	256.9	305.2	142.4 <sup>o</sup>	240.7	42.5	24.9	7.8	4.8	16.9
1921-22.....	24.0	6.3	43.8	282.0	340.6	177.3 <sup>o</sup>	294.6	55.0	28.4	15.2	6.1	16.2
1922-23.....	19.3	5.4	44.3	275.4	288.9	109.4 <sup>o</sup>	277.3	50.1	30.1	15.5	7.5	18.2
1923-24.....	29.1	7.0	49.2	299.9	329.2	137.3 <sup>o</sup>	294.5	53.2	32.9	18.3	6.7	23.8
1924-25.....	17.7	5.1	44.1	280.8	311.8	170.1	258.8	51.5 <sup>o</sup>	31.7	13.3	6.1	17.6
Average												
1909-14.....	29.9	7.0	33.7	277.3	361.2 <sup>b</sup>	219.9 <sup>b</sup>	236.3	65.4	27.6	11.8 <sup>b</sup>	4.1	15.2
1920-24.....	23.3	6.3	45.1	278.6	315.9	141.6 <sup>o</sup>	276.8	50.2	29.1	14.2	6.3	18.8

Crop year August-July	Spain	Portu- gal <sup>o</sup>	Switzer- land	Austria	Czecho- Slovakia	Poland	Finland	Latvia	Esthonia	Greece	Japan
1919-20.....	146.4	12.7	15.8	18.7	.... <sup>d</sup>	.... <sup>d</sup>	3.3	.... <sup>o</sup>	.... <sup>d</sup>	23.3	54.1
1920-21.....	158.4	15.2	16.5	20.0	44.7	.... <sup>d</sup>	2.7	.97	.... <sup>f</sup>	21.8	36.0
1921-22.....	153.2	14.9	16.8	25.5	50.3	38.6	3.8	1.52	.... <sup>f</sup>	24.9	53.5
1922-23.....	125.3	15.3	18.9	20.8	43.9	45.0	5.8	2.07	.... <sup>f</sup>	26.9	42.1
1923-24.....	156.8	16.0	20.7	27.2	57.4	52.2	6.2	3.42	1.71	33.6	55.7
1924-25.....	123.2	13.6	17.0	24.8 <sup>e</sup>	52.3	43.4	5.4	3.54	1.40	29.5	37.6
Average											
1909-14.....	136.6	14.3	20.2	71.6 <sup>b</sup>	.... <sup>d</sup>	.... <sup>d</sup>	... <sup>d</sup>	.... <sup>d</sup>	.... <sup>d</sup>	.... <sup>f</sup>	29.2
1920-24.....	148.4	15.4	18.2	23.4	49.1	45.3 <sup>t</sup>	4.6	2.00	.... <sup>f</sup>	26.8	46.8

\* Data are rough approximations based on U.S. Department of Agriculture production figures, and International Institute of Agriculture trade figures.

<sup>a</sup> Estimates for Southern Hemisphere are for calendar years 1920 and following, instead of crop years.

<sup>b</sup> Figures much too low, since carryovers had been abnormally large because of war conditions.

<sup>c</sup> Comparable production figures not available.

<sup>d</sup> Trade figures not available.

<sup>e</sup> Trade figures estimated.

<sup>f</sup> Comparable trade figures not available.

<sup>o</sup> These figures are too low, as the official crop figures for post-war years are known to be underestimated and net imports are incomplete because of territories occupied by foreign armies.

<sup>b</sup> Pre-war boundaries.

<sup>t</sup> Three-year average.

TABLE XX.—WHEAT SUPPLIES AND THEIR APPROXIMATE DISPOSITION IN LEADING EXPORTING COUNTRIES, 1922-25\*

(Million bushels)

A.—UNITED STATES: CROP YEARS ENDING JUNE 30				B.—CANADA: CROP YEARS ENDING AUG. 31 (JULY 31)			
	1922-23	1923-24	1924-25		1922-23 Sept.-Aug.	1923-24 Sept.-Aug.	1924-25 Aug.-July
Wheat stocks, July 1.....	81.5	102.4	106.2	Wheat stocks, Sept. 1 (Aug. 1).....	16.0	8.9	39.1
New crop.....	867.6	797.4	872.7	New crop.....	399.8	474.2	279.0 <sup>c</sup>
Total supplies.....	949.1	899.8	978.9	Total supplies.....	415.8	483.1	318.1
Exports:				Exports:			
Grain.....	154.9	78.8	195.5	Grain.....	229.7	289.2	147.0
Flour.....	67.0	77.6	62.5	Flour.....	49.8	53.9	45.8
Imports (less re-exports), of wheat and flour.....	19.7	28.0	6.1	Imports (chiefly flour).....	.4	.4	.7
Net exports.....	202.2	128.4	251.9	Net exports.....	279.1	342.7	192.1
Shipments to possessions..	2.8	2.9	2.8	Seed requirements.....	39.8	38.6	38.8
Seed requirements.....	91.4	79.4	87.6	Milled for consumption..	40.9	41.5	39.0 <sup>d</sup>
Milled for consumption....	} 550.3 <sup>b</sup> }	504.9 <sup>a</sup>	484.6 <sup>a</sup>	Loss in cleaning.....	12.0	11.9	7.9 <sup>e</sup>
Feed and waste.....		78.0 <sup>b</sup>	65.2 <sup>b</sup>	Unmerchantable grain..	9.8	19.4	12.0 <sup>e</sup>
Total domestic use.....	641.7	662.3	637.4	Other feed, loss, etc.....	25.4	2.7	4.7 <sup>e</sup>
Wheat stocks, June 30.....	102.4	106.2	86.8	Total domestic use... ..	127.8	114.1	103.4
				Wheat stocks Aug. 31 (July 31).....	8.9	26.3	22.6
C.—ARGENTINA: YEARS ENDING JULY 31				D.—AUSTRALIA: YEARS ENDING JULY 31			
	1922-23	1923-24	1924-25		1922-23	1923-24	1924-25
Wheat stocks, August 1....	66.6	54.2	59.6	Wheat stocks, August 1....	29.8	45.4	41.2
New crop.....	195.8	247.8	191.1	New crop.....	109.3	125.5	164.0
Total supplies.....	262.4	302.0	250.7	Total supplies.....	139.1	170.9	205.2
Exports:				Net exports:			
Grain.....	135.5	164.0	115.5	Grain.....	31.3	61.3	102.0
Flour.....	3.9	8.2	7.6	Flour.....	19.0	24.3	21.6
Total exports.....	139.4	172.2	123.1	Total net exports.....	50.3	85.6	123.6
Seed requirements.....	18.7	20.6	23.1	Seed requirements.....	8.9	9.4	9.4 <sup>e</sup>
Consumption, feed and waste.....	50.1 <sup>b</sup>	49.6 <sup>b</sup>	47.3 <sup>b</sup>	Consumption.....	30.4	31.2	} 36.6 <sup>e</sup>
Total domestic use.....	68.8	70.2	70.4	Feed and waste.....	4.1	3.5	
Wheat stocks, July 31.....	54.2	59.6	57.2 <sup>c</sup>	Total domestic use.....	43.4	44.1	46.0
				Wheat stocks, July 31.....	45.4	41.2	35.6 <sup>b</sup>

\* For the United States and Canada, official figures except as noted. See especially (U.S.) *Agriculture Yearbook, 1924*, pp. 569 f., and (Canada) *Monthly Bulletin of Agricultural Statistics*, April 1925, p. 101. For Argentina and Australia, adapted from estimates for calendar years published in *Foreign Crops and Markets*, March 19 and September 24, 1924, and *Review of the River Plate*; using official data for crops and trade, and official estimates of Argentine exportable surplus when available, otherwise Sir James Wilson's.

<sup>a</sup> Mill grindings reported by Census Bureau, raised to allow for non-reporting mills, plus 2 per cent for small merchant mills and custom mills; less net exports and shipments of flour.

<sup>b</sup> Derived by deduction.

<sup>c</sup> Accepting Northwest Grain Dealers Association estimate for the prairie provinces.

<sup>d</sup> Our conservative estimate, based upon preliminary statistics of mill grindings less flour exports (36 million bushels) and a study of previous official estimates in comparison with such preliminary figures.

<sup>e</sup> Estimate.



## THE WORLD WHEAT SITUATION, 1924-25

TABLE XXI.—UNITED STATES AND CANADIAN CARRYOVERS OF WHEAT, 1919-25\*

(Thousand bushels)

Year	United States (July 1)				Canada (September 1, 1919-24; August 1, 1925)				
	Total	On farms	In country mills and elevators	Commercial visible (Bradstreet's)	Total	On farms	In elevators	In transit	In flour mills
1919.....	49,806	19,261	19,672	10,873	..... <sup>a</sup>	2,149	3,305	..... <sup>a</sup>	..... <sup>a</sup>
1920.....	110,254	49,546	37,304	23,404	..... <sup>a</sup>	2,122	6,930	..... <sup>a</sup>	238
1921.....	93,840	56,707	27,167	9,966	13,727	2,144	4,831	6,032	720
1922.....	81,457	32,359	28,756	20,342	20,590	2,360	11,024	4,578	2,628
1923.....	102,414	35,894	37,117	29,403	11,690	1,441	5,051	2,758	2,440
1924.....	106,293	30,980	36,626	38,597	28,083	5,035	17,507	1,816	3,725
1925.....	86,795	29,705	25,287	31,803	24,224 <sup>b</sup>	2,709 <sup>b</sup>	17,939 <sup>b</sup>	1,576 <sup>b</sup>	2,000 <sup>b</sup>
Average									
1910-14.....	89,411	32,485	31,600	25,326	..... <sup>a</sup>	..... <sup>a</sup>	..... <sup>a</sup>	..... <sup>a</sup>	..... <sup>a</sup>
1920-24.....	98,834	41,097	33,394	24,342	16,676 <sup>c</sup>	2,620	9,069	3,796 <sup>c</sup>	1,950

\* Data of U.S. Department of Agriculture and Dominion Bureau of Statistics. See especially *Agriculture Yearbooks*, *Canada Yearbooks*, and press releases.

<sup>a</sup> Not available. <sup>b</sup> August 1. Total for August 1, 1924, estimated at 41,119. <sup>c</sup> Average for wheat in transit 1921-24.

TABLE XXII.—VISIBLE WHEAT SUPPLIES ON AUGUST 1, 1920-25, WITH PRE-WAR AND POST-WAR AVERAGES\*

(Million bushels)

	1920	1921	1922	1923	1924	1925	1910-14 average	1920-24 average
U.S., East of Rockies—wheat.....	31.0	46.3	34.1	58.7	58.4	47.5	48.5	45.7
U.S., West of Rockies—wheat.....	3.0	2.2	1.6	3.9	4.1	1.4	1.8	3.0
Canada—wheat.....	7.6	8.7	19.1	13.9	31.3	23.2	10.2	16.1
U.S.—flour as wheat.....	8.7	7.7	7.4	10.7	9.6	8.4	8.5	8.8
Canada—flour as wheat.....	.6	.2	.2	.2	.3	.2	.6	.3
Argentina.....	3.7	3.7	2.2	4.4	6.8	7.7	1.3	4.2
Australia.....	27.5	30.0	3.0	18.0	30.0	8.4	.... <sup>a</sup>	21.7
United Kingdom—wheat.....	10.0	6.4	5.2	7.0	8.4	7.3	12.4	7.4
United Kingdom—flour as wheat.....	2.8	1.2	1.9	1.2	1.5	1.9	3.0	1.7
Afloat for United Kingdom.....	24.9	18.5	12.3	14.1	14.4	9.3	13.9	16.8
Afloat for Continent.....	39.9	28.8	22.3	18.2	15.2	14.0	12.3	24.9
Afloat for orders.....	11.4	10.6	14.3	6.7	12.2	10.0	9.0	11.0
TOTAL NORTH AMERICA.....	50.9	65.1	62.4	87.4	103.7	80.7	69.6	73.9
TOTAL ARGENTINA AND AUSTRALIA.....	31.2	33.7	5.2	22.4	36.8	16.1	.... <sup>a</sup>	25.9
TOTAL UNITED KINGDOM AND AFLOAT.....	89.0	65.5	56.0	47.2	51.7	42.5	50.6	61.8
GRAND TOTAL.....	171.1	164.3	123.6	157.0	192.2	139.3	.... <sup>a</sup>	161.6
Excluding Australia.....	143.6	134.3	120.6	139.0	162.2	130.9	120.4	139.9

\* A joint compilation by Broomhall, the Minneapolis *Daily Market Record*, and the Chicago *Daily Trade Bulletin*; here compiled from Broomhall's *Corn Trade News*.

<sup>a</sup> Data incomplete.

TABLE XXIII.—AVERAGE DAILY VOLUME OF TRADING IN WHEAT FUTURES IN UNITED STATES MARKETS\*

(Million bushels)

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	Year
1920-21.....	....	....	....	....	....	....	39.1	44.1	39.5	52.5	46.1	49.8	45.2 <sup>a</sup>
1921-22.....	45.5	39.6	57.1	54.0	53.7	43.3	36.5	67.9	61.3	48.9	37.4	41.8	48.5
1922-23.....	34.4	36.2	33.5	32.5	37.6	42.1	36.6	37.0	27.9	48.0	41.0	40.9	37.0
1923-24.....	32.3	31.4	28.3	30.2	27.1	21.1	14.3	18.1	22.8	18.0	14.4	34.0	24.2
1924-25.....	53.3	50.0	42.7	61.4	60.9	58.8	73.4	81.0	87.4	59.3	60.3	67.6	62.9

\* Data of Grain Futures Administration, U.S. Department of Agriculture. No data compiled for period prior to January 1921.

<sup>a</sup> Six months' average.

TABLE XXIV.—AVERAGE CASH PRICES OF REPRESENTATIVE WHEATS IN LEADING EXPORTING AND IMPORTING MARKETS\*  
(U.S. dollars per bushel)

Month	United States				Canada	Liverpool	Argentina	Liverpool		
	Average farm price	No. 2 Red Winter (St. Louis)	No. 2 Hard Winter (Kansas City)	No. 1 Dark Northern (Minneapolis)	No. 1 Manitoba (Winnipeg)	No. 1 Manitoba	Barletta (Buenos Aires)	Argentine Rosafé	Australian	Pacific White
1924 April.....	.96	1.13	1.04	1.26	.96	1.21	.99	1.18	1.25	1.24
May.....	.97	1.12	1.06	1.30	1.03	1.23	1.03	1.21	1.29	1.28
June.....	.98	1.16	1.08	1.37	1.12	1.29	1.12	1.23	1.31	1.36
July.....	1.06	1.35	1.20	1.47	1.35	1.46	1.27	1.42	1.43	1.48
August.....	1.17	1.38	1.19	1.38	1.44	1.63	1.42	1.52	1.56	1.60
September....	1.14	1.40	1.20	1.35	1.44	1.66	1.44	1.58	1.64	1.63
October.....	1.30	1.56	1.37	1.51	1.58	1.85	1.59	1.80	1.78	1.77
November.....	1.34	1.63	1.43	1.54	1.66	1.85	1.61	1.81	1.84	1.78
December.....	1.41	1.79	1.62	1.71	1.75	1.97	1.61	1.86	1.89 <sup>a</sup>	1.84 <sup>a</sup>
1925 January.....	1.62	2.10	1.82	1.98	1.95	2.18	1.83	2.02	2.03	1.96 <sup>b</sup>
February.....	1.70	2.02	1.81	1.94	1.94	2.23	1.88	2.08	2.09	....
March.....	1.64	1.86	1.71	1.80	1.73	2.05	1.82	1.95	1.95	1.72
April.....	1.40	1.77	1.51	1.60	1.54	1.76	1.64	1.71	1.72	1.61
May.....	1.49	1.86	1.63	1.73	1.82	1.97	1.74	1.87	1.79	1.72
June.....	1.53	1.89	1.60	1.69	1.73	1.91	1.69	1.78	1.71	1.69
July.....	1.40	1.71	1.54	1.66	1.61	1.80	1.62	1.71	1.66	1.65

\* U.S. prices from *Crops and Markets*; foreign prices from *International Crop Report and Agricultural Statistics*, except Rosafé, No. 1 Northern Duluth, and No. 3 Manitoba, which are from *Broomhall's Corn Trade News*. Foreign prices are converted to U.S. dollars on a weekly basis for a certain day of each week and then reduced to monthly averages.

<sup>a</sup> Average of three weeks.

<sup>b</sup> One week only.

TABLE XXV.—AVERAGE PRICES OF DOMESTIC WHEAT IN EUROPEAN MARKETS\*

Month	Great Britain	France (Chartres)	Italy (Milan)	Germany (Berlin)	U.S. dollars per bushel <sup>a</sup>			
	s. d. per quarter	francs per quintal	lire per quintal	gold mks. per quintal	Great Britain	France (Chartres)	Italy (Milan)	Germany (Berlin)
1924 April.....	45-3	92.25	112.88	17.36	1.23	1.55	1.37	1.12
May.....	46-11	92.50	112.90	16.20	1.28	1.46	1.36	1.05
June.....	48-5	97.65	111.62	14.49	1.31	1.40	1.32	.94
July.....	51-11	97.25	106.88	16.51	1.42	1.36	1.25	1.07
August.....	54-9	101.00	116.00	19.88	1.54	1.50	1.40	1.29
September.....	51-10	106.70	125.25	22.51	1.45	1.54	1.49	1.46
October.....	54-0	113.45	149.20	22.65	1.52	1.62	1.77	1.47
November.....	54-3	119.05	155.50	21.20	1.56	1.71	1.83	1.37
December.....	52-6	120.31	166.12	22.22	1.54	1.77	1.94	1.44
1925 January.....	55-5	127.75	194.80	25.38	1.66	1.87	2.21	1.64
February.....	58-4	131.25	206.00	25.22	1.74	1.89	2.31	1.63
March.....	56-11	132.60	188.62	25.21	1.70	1.87	2.09	1.63
April.....	52-7	125.00	166.25	24.72	1.58	1.77	1.86	1.60
May.....	54-2	131.50	174.40	26.26	1.64	1.85	1.93	1.70
June.....	55-1	135.00	172.88	26.68	1.67	1.75	1.80	1.73
July.....	51-1	128.60	163.80	.... <sup>b</sup>	1.55	1.64	1.63	.... <sup>b</sup>

\* Data for Great Britain from *London Economist*; France, U.S. Federal Reserve Board; Italy, *International Crop Report and Agricultural Statistics*; Germany, *Wirtschaft und Statistik*.

<sup>a</sup> Conversions made at average exchange rates for the month.

<sup>b</sup> Data not available.

## THE WORLD WHEAT SITUATION, 1924-25

TABLE XXVI.—AVERAGE EXPORT AND IMPORT PRICES OF WHEAT AND FLOUR IN CERTAIN COUNTRIES, MONTHLY, AUGUST 1923 TO JULY 1925\*

(U.S. dollars)

Year and month	Wheat (per bushel)				Flour (per barrel)			
	United States exports	Canada exports	Australia exports	United Kingdom imports	United States exports	Canada exports	Australia exports	United Kingdom imports
1923 August.....	1.09	1.17	1.12	1.27	5.16	5.28	4.57	5.28
September.....	1.12	1.08	1.09	1.21	5.02	5.25	4.56	5.16
October.....	1.11	1.00	1.09	1.20	5.17	5.24	4.63	5.10
November.....	1.10	.97	1.06	1.18	5.17	5.14	4.65	4.99
December.....	1.12	.92	.99	1.18	5.08	5.06	4.63	5.04
1924 January.....	1.08	.95	.98	1.16	5.05	4.93	4.43	5.01
February.....	1.08	.97	.99	1.21	5.00	4.84	4.61	5.06
March.....	1.06	.98	.99	1.23	5.12	4.94	4.44	5.02
April.....	1.08	.97	1.04	1.23	5.13	5.00	4.51	5.26
May.....	1.10	.97	1.06	1.21	5.10	4.92	4.52	5.09
June.....	1.16	1.06	1.09	1.21	5.00	5.00	4.57	5.15
July.....	1.28	1.19	1.16	1.27	5.31	5.19	4.71	5.29
August.....	1.36	1.39	1.29	1.43	5.84	5.95	5.61	6.07
September.....	1.36	1.32	1.29	1.49	6.13	6.00	5.79	6.38
October.....	1.51	1.50	1.46	1.62	6.32	6.54	6.02	6.60
November.....	1.57	1.53	1.54	1.75	6.67	6.63	6.22	7.03
December.....	1.61	1.52	1.64	1.82	6.97	7.05	6.83	7.45
1925 January.....	1.76	1.74	1.72	1.93	7.55	7.40	7.19	7.74
February.....	1.98	1.88	1.71	2.03	8.20	8.11	7.35	8.22
March.....	1.91	1.75	1.69	2.03	8.39	7.91	7.56	8.53
April.....	1.80	1.58	1.64	1.94	8.23	7.76	7.18	8.72
May.....	1.77	1.54	1.64	1.88	7.83	7.53	6.61	8.04
June.....	1.75	1.69	....	1.88	7.69	7.65	....	7.81
July.....	1.66	1.55	....	1.78	7.62	7.31	....	7.43
1923-24 average.....	1.11	.99	1.03	1.22	5.10	5.05	4.55	5.12
1924-25 average.....	1.58	1.54	1.65 <sup>a</sup>	1.77	7.17	7.15	6.63 <sup>a</sup>	7.48

\* Based upon official trade statistics of quantities and values; figures in foreign currencies converted at average monthly rates of exchange in New York, for Australia first converting into pounds sterling at the rate for the middle week of the month.

<sup>a</sup> Export prices estimated for June and July, 1925.

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- G 12. "The Coming Hard Wheat Deficiency," C. L. Alsberg. *Baking Technology*, February 1924
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