



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

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

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

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

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

SURVEY OF THE WHEAT SITUATION

DECEMBER 1929 TO APRIL 1930

INTRODUCTION

Developments in the world wheat situation during December–March 1929–30 were striking principally because of a notably high level of visible wheat supplies in North America, an unprecedentedly small post-war volume of international trade, and a sharp decline of prices from early January until the middle of March. The accumulation of information during the period regarding the size, position, and quality of the wheat, rye, corn, barley, oats, and potato crops suggests that the general supply situation appears at the end of April little different from what it appeared to be in late December. Exporting countries as a group harvested relatively small wheat crops in 1929; but the importing countries of Europe as a group harvested extremely large crops of wheat, of rye, and of the feed grains. The world wheat crop of 1929, excluding Russia, China, and Asia Minor, seems to have fallen far below the line of post-war trend. Nevertheless, largely because the inward carryover in the world was heavy and consumption of wheat apparently rather light, trend considered, the level of wheat prices thus far in 1929–30 has proved to be comparatively low. The low and declining price level stimulated governmental price-raising activities, or discussions of proposed measures, in many countries, both exporters and importers. In the United States, the activities of the Farmers' National Grain Corporation and the Wheat Stabilization Corporation exerted perceptible influence on domestic prices.

The volume of wheat and flour moving in international trade during December–March, as measured by Broomhall's shipments, was only 188 million bushels, the smallest movement recorded in these four

months in post-war years. For the first time in at least nine years, shipments in December–March were smaller than those of August–November; the average seasonal movement of post-war years was profoundly modified. The movement to Europe, not to ex-Europe, was strikingly small; and since export supplies available were large, the causes of the notably small movement must be sought principally in the European situation. The available evidence now suggests that in Europe a combination of circumstances has made for relatively small consumption of wheat both for food and for feed. Wheat consumption for food and feed was probably reduced by an exceptionally mild winter, a severe depression in business activity with accompanying exaggeration of unemployment, and a notable abundance of rye, the

feed grains, and potatoes in relation to wheat. Measures taken (and discussed) by various European governments were apparently effective in reducing wheat imports. Faced with this complex of circumstances, already in possession of ample total wheat stocks, and lacking compelling reasons to anticipate an advance in prices, importers purchased sparingly.

Despite small importations in December–March (relatively larger in contrast with those of earlier years than were shipments, because stocks afloat and in ports of the United Kingdom did not present their usual seasonal increase), total stocks of wheat as of April 1, 1930, were probably of average size or above in the (combined) European importing countries, though possibly smaller than in 1929. In North America stocks were extremely large, in the United States even larger than those of 1929, in

CONTENTS

	PAGE
<i>Changes in Apparent Grain Supplies of 1929–30</i>	290
<i>International Trade and Import Requirements</i>	293
<i>Visible Supplies and Other Stocks</i>	303
<i>Wheat Price Movements</i>	308
<i>Prospects for 1930 Crops</i>	316
<i>Outlook for Trade, Carryovers, and Prices</i>	320
<i>Appendix</i>	329

Canada somewhat smaller. But principally on account of reductions in Argentina and the Danube basin, total wheat stocks in the countries which count heavily in the international trade were smaller on April 1 this year than last, yet probably well above the average in size.

During January–March wheat prices declined on all important markets, though (as regards domestic wheats) less in the European importing countries than in exporting countries or on the international market. On the British import market, Canadian wheats declined more than other types, more closely approaching a competitive basis than at any time since July 1929; and the relationships of futures prices also suggest that Winnipeg was approaching a basis upon which wheat could be exported freely. Of the four great futures markets, Liverpool was apparently very weak during the price decline, and in general the decline itself seems properly to be attributed to much the same complex of circumstances in Europe as caused the volume of international trade to be so small, together with other factors, such as favorable progress of winter wheat, and the appearance of Russia as an exporter of wheat.

Developments in trade, carryovers, and prices in the closing four months of the crop year will inevitably be conditioned by the changing outlook for 1930 wheat crops.

The record of past years and developments in the present suggest, however, certain features that may become prominent during April–July. The volume of international trade during 1929–30, as measured by net exports, now seems likely to reach only around 660 million bushels, the smallest in post-war years, as compared with our December approximation of 720 million. A crop scare might prompt a larger movement. Net exports in April–July may reasonably be expected to exceed those of December–March for the first time in at least nine years. The outward carryover in North America now seems likely to equal or exceed the huge one of 1929; but large reductions in Argentine and Danubian stocks may cause world stocks to stand, as they appear to have done on April 1, appreciably below those of 1929 yet well above average. The movements of wheat prices will presumably respond much more sharply to changes in new-crop prospects than will the movements of stocks or of exports; and these changes seem not to be predictable. Nevertheless, so far as we are able to evaluate these and other price-influencing factors, the present and prospective situation seems to favor firm or rising prices in May–July, unless the growing crops encounter unusually favorable weather conditions. Price movements may well be different in different markets.

I. CHANGES IN APPARENT GRAIN SUPPLIES OF 1929–30

The period under review witnessed official revisions of the estimates of 1929 wheat, rye, potato, and coarse grain crops in several countries; some first estimates appeared; and some evidence accumulated bearing on the probable accuracy of estimates as yet unrevised. It is desirable to review briefly the accumulated evidence on supplies of wheat and substitutable commodities, in order to form an opinion regarding the direct or indirect influence of any changes upon the strikingly small volume of international trade in December–March and upon the striking decline of wheat prices in January–March. In general the changes in crop estimates during the past four months have altered the appearance of the supply situation of 1929–30 only a little.

WHEAT

The latest available data on wheat production are summarized in Table 1. The Northern Hemisphere crop of 1929 still appears to have approximated 3,000 million bushels, the smallest crop since that of 1922; revisions of estimates during the past four months have not affected the total. Upward revisions appeared of the crops of Canada, Germany, and Spain (5.6, 7.5, and 4.9 million bushels respectively); but the estimates for Roumania, Greece, Morocco, Algeria, and the British Isles were reduced by a total of 22.7 million bushels, the reduction for Roumania alone being 15.3 million. Thus North America now appears to have harvested a trifle more wheat than was indicated by estimates current in De-

ember, and the same is true of the importing countries of Europe. But the Danubian and the northern African countries appear to have harvested slightly less. The French trade journals (and French millers) continue to suggest that the official estimate of the French crop, 320 million bushels, is over 10 per cent too low. Some observers now seem to believe that the Italian crop was underestimated, whereas four months ago it was regarded by some as overestimated.¹

smaller than any of these five crops except that of 1924. The rye crop, officially estimated as 796 million bushels, was larger than those of 1924 and 1928, but fell more than 60 million below the 1924-28 average. These returns on the whole confirm unofficial advices current in December. Russian exports of wheat in January-March 1930 are not to be ascribed to an abundant harvest, and seem to have little relation to supply, costs, or prices.

TABLE 1.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING AREAS, PRE-WAR AND POST-WAR*

(Million bushels)

Year	United States	Canada	Soviet Russia	Lower Danube ^a	Other Europe	Northern Africa	India	Japan, Chosen	Northern Hemisphere ex-Russia ^b	Argentina	Australia	Southern Hemisphere	World ex-Russia ^b
1922.....	868	400	...	224	819	71	367	40	2,805	196	109	354	3,160
1923.....	797	474	419	260	996	106	372	35	3,060	248	125	427	3,485
1924.....	864	275	472	204	853	85	361	35	2,690	191	165	407	3,095
1925.....	700	430	782	296	1,100	105	331	40	3,015	191	115	359	3,375
1926.....	870	415	914	294	915	90	325	40	2,960	221	161	434	3,395
1927.....	878	480	776	272	995	106	335	40	3,120	290	118	470	3,590
1928.....	930	567	793	369	1,039	104	291	39	3,355	340	160	560 ^c	3,915 ^c
1929.....	807	300	739	286	1,119	117	318	39	3,000	175	125	360 ^d	3,360 ^d
Average													
1909-13.....	690	197	757 ^e	330	1,017	92	352	32	2,725	147	90	280	3,004
1924-28.....	848	433	748	287	980	98	329	39	3,030	247	144	446	3,475

* Summarized from most recent official data for individual countries (see Appendix Table I), as reported by the U.S. Department of Agriculture and International Institute of Agriculture; but figures in italics represent our adjustments for apparent underestimates of crops, as shown in Appendix Table XI, for years prior to 1929. Italicized figures for 1929 represent our approximations. Totals exclude China, Asia Minor, Brazil, and a number of small producers. All estimates are for areas within post-war boundaries.

^a Hungary, Bulgaria, Roumania, Jugo-Slavia.

^b Rounded figures.

^c Includes our estimate for Peru and Chile.

^d Includes our estimates for Peru, Chile, and Uruguay.

^e Regarded as too low by some Soviet officials, whose estimate is 908 million bushels.

Some observers regard the latest official German estimate as too low. All told, the evidence now available suggests that the domestic wheat supplies of European importing countries in 1929-30 appear a little larger than they did in December, whereas the supplies available in Northern Hemisphere exporting countries (excluding Russia, where in recent months unexpected supplies have proved to be available for export) appear a little smaller. The first official estimate of the Russian wheat crop was issued during the period under review; at 739 million bushels, the crop of 1929 was about equal to the 1924-28 average, but

¹ Possibly the exceptionally small imports into Italy thus far in the crop year have given rise to this change of opinion, if, indeed, the change of opinion is real.

Little information has accumulated with regard to the quality of the Northern Hemisphere wheat crops of 1929. The proportion of the Canadian marketings grading above No. 3 Northern has remained extraordinarily high; and the United States crop still seems somewhat above average in quality, the European crop exceptionally good.

The official Australian crop estimate was revised upward fairly sharply, from 112 to 125 million bushels. The standing estimate lies about at the middle of the range of the United States Department of Agriculture's forecast from weather conditions (115 to 135 million bushels) issued as early as October 21, 1929. The official estimate of the Argentine crop stood at 144 million bushels on December 23, 1929; and on January 29,

1930, a revised estimate of 140 million bushels appeared. The earlier estimate was thought to be unduly pessimistic by many, perhaps most, observers; and the later estimate seems to be viewed similarly. Nevertheless reputable European and Argentine trade journals apparently are inclined at present to regard the official estimate as less incorrect than they did four months ago. A satisfactory quantitative test of the accuracy of the official estimate cannot be devised until export statistics are available for most or all of the calendar year 1930. Meanwhile we employ tentatively a rounded figure of 175 million bushels for the Argentine crop of 1929. Such a figure, 25 million bushels lower than one employed by us last December, seems to conform with the present views of qualified observers. It characterizes the Argentine crop as the smallest since 1920. Nevertheless total wheat supplies available in Argentina on January 1, 1930, seem not to have been so small as this crop figure would indicate, for there was apparently a rather heavy carry-over of old-crop wheat.¹

Crop estimates for several other countries of the Southern Hemisphere—Uruguay, Chile, and Peru—are not yet available. The estimate of New Zealand's crop is 7.1 million bushels, an outturn below the average in 1924-28. All told, the Southern Hemisphere crop of 1929 now seems to have approximated 360 million bushels, or around 20 million bushels less than the available data suggested in December. The Australian crop is said to be about of average quality. The Argentine seems clearly to be somewhat below average, and decidedly poorer than the good crop of 1928, especially in weight per measured bushel; but thus far no evidence has appeared suggesting that the crop of 1929 is poor enough

¹ In our survey written last December, we estimated Argentine stocks as of August 1, 1929, at 120 million bushels, the estimate being based largely upon official statistics of exports and the assumption of a total carryover of 10 million bushels on December 31, 1929. According to direct estimates of stocks published in the *Times of Argentina* of December 30, 1929, the carryover was more than 20 million bushels. Hence we increase our estimate of stocks on August 1, 1929, by 10 million bushels, so that, with the smaller crop figure we are now using, total available supplies in Argentina for the August-July 1929-30 period approximate 305 rather than 320 million bushels, our estimate published last December. See Appendix Table XI. On the basis of official crop estimates the figure would be roughly 270 million.

to give rise to serious price discounting by European millers, as did the crop of 1925.

The world wheat crop of 1929 (excluding Russia, China, and Asia Minor) thus appears in April to be only some 20 million bushels smaller than it appeared to be in December. The changes in official crop estimates (so far as one can ascertain), in unofficial measurements of outturn, and in the evidence respecting quality, have been too small appreciably to affect the opinions that traders must have formed four months ago respecting the size, the geographical distribution, and the general quality of the crop of 1929. There has been little reason to suppose that, Russia excluded from consideration, the accumulation of evidence during December-March has served any further than to suggest slightly greater abundance of wheat supplies in European importing countries, and slightly less in the exporting countries. The sharp decline of wheat prices in January-March can hardly be ascribed to accumulating evidence of unexpectedly large wheat supplies available outside of Russia. The appearance of Russia as an exporter, however, exerted considerable market influence.

The world wheat crop of 1929 ranks, as it seemed to do in December, as one falling well below the line of post-war trend, much like those of 1920 and 1924. The significant feature of its geographical distribution remains the plentiful supply of wheat in European importing countries, and the relatively small outturns in the major exporting countries. The relatively low level of wheat prices reached in November 1929 was from some points of view striking in the face of a small wheat crop; the lower level of prices reached in March 1930 is still more striking.

EUROPEAN CROPS OF RYE, FEED GRAINS, AND POTATOES

Table 2 summarizes the latest available data on European crops of rye, potatoes, corn, barley, and oats. During the period under review, no change has occurred in the official estimates of rye production, though many commentators incline to the opinion that the important German rye crop was appreciably underestimated. Estimates of the potato crop were increased by 154 million bushels; of barley, by 9 million;

TABLE 2.—EUROPEAN (EX-RUSSIAN) GRAIN AND POTATO CROPS, 1920-29*

(Million bushels)

Year	Wheat	Rye	Pota- toes	Corn	Barley	Oats
1920.....	947	533	3,351	520	551	1,478
1921.....	1,218	765	2,988	393	566	1,509
1922.....	1,043	720	4,531	423	599	1,544
1923.....	1,256	831	3,715	468	649	1,666
1924.....	1,057	656	4,045	590	565	1,628
1925.....	1,396	933	4,584	626	672	1,792
1926.....	1,209	752	3,714	655	673	1,845
1927.....	1,267	802	4,605	480	659	1,752
1928.....	1,408	899	4,538	382	742	1,881
1929.....	1,405	901	4,498	642	809	2,040
Average						
1909-13.....	1,347	977	4,162	581	701	1,931
1924-28.....	1,267	808	4,297	547	662	1,780

* Summarized from most recent official data for individual countries, as reported by the U.S. Department of Agriculture. Excludes a few minor European producers. Pre-war averages are estimates for territory within present boundaries, and includes 2-year or 4-year averages for a few countries.

of oats, by 50 million. On the other hand, estimates of the corn crop were reduced by 48 million, the principal reduction occur-

II. INTERNATIONAL TRADE AND IMPORT REQUIREMENTS

VOLUME AND COURSE OF TRADE

One of the most striking features of the period under review was the extraordinarily small movement of wheat and flour from exporting to importing countries. According to Broomhall's data, summarized with comparisons in Table 3, overseas shipments during December-March 1929-30 reached only 188.4 million bushels, the smallest quantity since 1920-21 and nearly 100 million bushels below the average shipments of the preceding five years. The reduction as compared with the same period in 1928-29 was nearly 160 million bushels, not far from half. No reduction comparable to this has occurred between any other two consecutive years since the war.

Somewhat similar comments apply to the volume of August-March shipments. These totaled 407.6 million bushels, the smallest since 1920-21, nearly 125 million smaller than the average of the preceding five years and nearly 225 million smaller than the extremely heavy shipments recorded during August-March 1928-29. But it is clear that

ring in Roumania. Developments have therefore served to confirm the earlier evidence of relatively great abundance of the supplies of wheat complements and substitutes, and perhaps to accentuate this abundance a little.

All told, the European wheat-importing countries now seem to occupy in 1929-30 a position with respect to wheat import requirements even more favorable than was suggested by information available four months ago. Their inward carryovers of wheat and rye were exceptionally large; their wheat crops were of record size for post-war years and of decidedly good quality; and their crops of wheat substitutes and complements were uncommonly large. So much was apparent in December; and recent developments, in so far as they have altered the picture, have altered it in the direction of slightly greater abundance of available domestic supplies. Yet the alteration seems too trifling to warrant the inference that the sharp decline in wheat prices during January-March is attributable to this factor in a significant degree.

August-March shipments in 1929-30 were less strikingly small by comparison with

TABLE 3.—INTERNATIONAL WHEAT AND FLOUR SHIPMENTS (BROOMHALL) BY DESTINATIONS*

(Million bushels)

Year	December-March (17 weeks)			August-March (34 weeks)		
	Total	To Europe	To ex-Europe	Total	To Europe	To ex-Europe
1920-21..	181.4	164.9	16.5	355.6	326.9	28.7
1921-22..	223.6	180.8	42.8	441.0	365.4	75.6
1922-23..	225.9	196.0	29.9	444.7	385.2	59.5
1923-24..	270.1	203.0	67.1	492.0	380.5	111.5
1924-25..	272.0	242.1	29.9	527.0	470.5	56.5
1925-26..	234.7	175.6	59.1	442.2	342.3	99.9
1926-27..	299.1	252.8	46.3	531.9	449.1	82.8
1927-28..	272.7	222.9	49.8	524.6	443.8	80.8
1928-29..	346.1	245.3	100.8	631.2	477.3	153.9
1929-30..	188.4	140.0	48.4	407.6	312.0	95.6
Average						
1909-14..	189.9	161.9	28.0	406.5	353.0	53.5
1924-29..	284.9	227.7	57.2	531.4	436.6	94.8

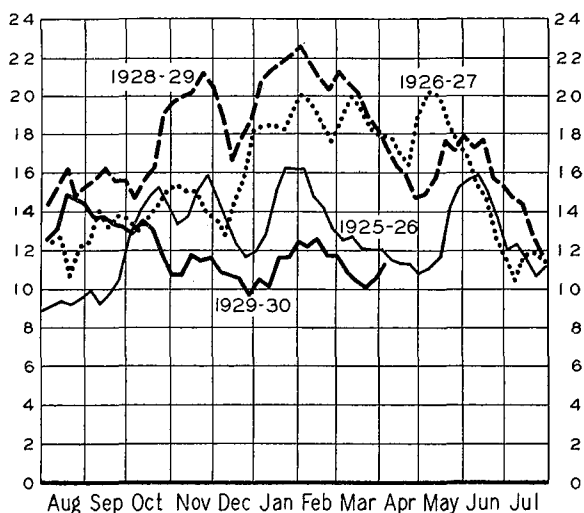
* Data from Broomhall's *Corn Trade News*.

earlier years than were the December-March shipments. The average seasonal

flow of wheat to export was profoundly modified. During the preceding seven years, shipments in December–March exceeded shipments in August–November by nearly 15 per cent on the average; but this year the December–March shipments fell below those of August–November by 14 per cent. A visual impression of the manner in which the seasonal movement has been modified is afforded by Chart 1. Since No-

CHART 1.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR, WEEKLY, 1925–26, 1926–27, AND FROM AUGUST 1928*

(Million bushels; 3-week moving average)



* Broomhall's data, from the *Corn Trade News*.

vember, shipments during 1929–30 have run notably smaller even than those of 1925–26; and this was the year among the six years preceding 1929–30 when both December–March and August–March shipments were smallest. In 1929–30 the usual October–November peak of shipments was hardly in evidence; however, the usual December trough and the February peak appeared.

Two questions seem to require special attention. Why has the overseas movement of wheat and flour during August–March fallen so far below the movement in recent years? And why has the December–March movement proved to be so much smaller than the August–November movement, thus deviating sharply from the average post-war seasonal flow of wheat to export?

It is fairly clear that the explanation of the relatively small shipments in August–

March 1929–30 is to be sought not so much in an analysis of conditions of supply in the major exporting countries or in the ex-European importing countries as in the situation in European importing countries. The major exporting countries, on the basis of available supplies, could certainly have exported more wheat than they have done; huge stocks remained in the United States and Canada on April 1, 1930, and Argentina and Australia have not exported in January–March quantities that are to be described as large in comparison to the size of their newly harvested small crops. According to Broomhall's data, shown in Table 3, the shipments to ex-European destinations during August–March 1929–30, some 96 million bushels, were not strikingly small, though they were much smaller than the extraordinarily heavy shipments of 1928–29. The shipments to Europe, however, were only 312 million bushels, quite the smallest since the war. The figures suggest that the total movement of wheat and flour was exceptionally small chiefly because European countries either did not need, or were unwilling or unable to import as freely as in other post-war years.

Not all of the factors that led some European countries to import decidedly small quantities of wheat¹ during August–March have become clear as yet, and the interrelations of these factors are difficult to express. Perhaps the simplest summary explanation is the statement that, for the crop year 1929–30 as a whole, the available millable domestic wheat supplies in European importing countries were exceptionally abundant, whereas on the other hand several factors combined to result in exceptionally small consumption of wheat for food and feed. On the side of supply, non-statistical information suggests that the total carry-over of wheat and flour in the European importing countries as a group was exceptionally large on August 1, 1929; and the statistics show that in these countries the

¹ As a matter of fact, importations seem not to have fallen so low in comparison with other recent years as the shipments data suggest. The stocks of wheat afloat to Europe and in ports of the United Kingdom usually increase more between August 1 and April 1 than they did this year. Thus to some extent European importing countries drew upon these stocks, maintaining their wheat imports at a relatively higher level than shipments from the exporting countries were maintained. See below, pp. 303, 307.

crop of 1929 was unusually large (and probably, in the aggregate, underestimated). The crops were also of decidedly good milling quality. The influences bearing on wheat consumption for food and feed are less easy to perceive and practically impossible to measure; but in general it is clear that on the whole they were such as to make for relatively small consumption (trend considered) of wheat both for food and for feed.

We may consider first the use of wheat for feed. This year the incentive to feed wheat has been weak. European domestic supplies of the feed grains were notably large; the hay crops were large; the winter was exceptionally mild, permitting the pasturing of animals for a longer period than usual; the livestock population seems not to have been increased exceptionally. In Germany the prices of the principal feed grains have stood on the average further below the prices of wheat than in any of the preceding six years except 1925-26 and possibly 1926-27. In the United Kingdom, the spread between import prices of corn and wheat was wider than in 1922-23, 1923-24, or 1928-29, though not so wide as in the four intervening years; and the spread between oats and wheat prices was also wide, though exceeded by the spreads prevailing in the three years 1924-25 to 1926-27. At the moment, data adequate to permit satisfactory comparisons between the prices of wheat and the feed grains in other European countries are not available to us. Nevertheless it seems warrantable to infer that, in the European importing countries as a group, the year 1929-30 ranks as one in which price relationships tend distinctly to discourage the feeding of wheat to farm animals. The good milling quality of the European wheat crop of 1929 presumably operated in the same direction. Finally, European millers must have found comparatively little inducement in the relationships of wheat and feed grain prices to direct their operations so as to obtain relatively low proportions of bread flour and high proportions of millfeeds. All told, the quantity of wheat used directly or indirectly for animal feed in European importing countries is probably notably small in 1929-30, though quantitative estimates are lacking.

If relatively little wheat has been used for feed, relatively more has been left available for human consumption. The mild winter was presumably conducive, other things equal and on general principles of nutrition, to relatively low human consumption per capita of wheaten bread. In addition, available supplies of rye (inward carryover and crop together) were exceptionally abundant, and rye prices in Germany at least have stood lower in relation to wheat prices than in any of the past six years except 1925-26. With supplies both of rye and of the feed grains abundant, and with their prices low as compared with wheat, it is reasonable to infer that substitution of rye and the feed grains (and presumably potatoes as well) for wheat has been unusually significant in continental Europe.

Moreover, displacement of wheat in the diet has presumably been furthered by general business depression. The existence of widespread depression and of concomitant increase in the numbers of unemployed are hardly to be doubted, though data are not available to us that demonstrate clearly in what countries the situation is worst, or how the present depression compares in intensity with those of other years. Possibly one may venture to assert that no depression equally widespread and of equal severity has been in evidence in Europe during the preceding four years.¹ At times when unemployment is especially prevalent and incomes of great numbers of laborers are reduced, it seems reasonable to suppose that the consumption of wheaten bread is appreciably affected. The effects need not be, and probably are not, in the same direction in different countries. In countries where per capita incomes amongst the mass of the population are normally high and expenditures for wheat bread form only a small proportion of total expenditures for food, business depression probably tends to expand the consumption of wheat bread if it has any effect on bread consumption; but in countries where per

¹ In the United States, it seems clear that business has been less active in recent months than at any time since 1921. The post-war depression persisted longer in Europe than in the United States. England suffered seriously from the coal strike beginning in May 1926; and conditions were unfavorable in Germany up to and into 1925.

capita incomes are low and expenditures for bread constitute a large proportion of total expenditures for food, business depression probably tends to contract the consumption of wheat bread. In countries of the first type, consumers perhaps tend in times of depression to curtail their purchases of the more expensive foods like meat, butter, and cheese, and to expand their purchases of bread; whereas in countries of the second type consumers, whose leeway toward contraction in the purchase of the former foods is small, tend rather to contract their purchases of wheat bread and expand their utilization of rye, the coarse grains, and potatoes, the more so if the prices of these substitutes stand exceptionally low in relation to wheat prices. It is difficult to classify the various countries of Europe as falling within one or the other of the two general groups listed above. But one may reasonably suppose that in general the present business depression could have tended to expand the consumption of wheaten bread only in Great Britain; elsewhere in Europe it has presumably led to reduction, more marked, of course, in some countries than in others.

The cumulative effect of governmental policies in many countries toward the exportation and importation of goods moving in international trade has also been such as to curtail European imports of wheat thus far in the crop year 1929-30. The general effort in continental Europe since the war has been to improve trade balances by enlarging the volume and value of exports and contracting the volume and value of imports. In countries where wheat imports constitute an appreciable proportion of total merchandise imports, the policy of contracting imports has included wheat. It is clear that the year 1929-30 witnesses generally higher import tariffs on wheat than have been in force in any other post-war year. France¹ and Italy raised their tariffs in May 1929. German duties were successively increased on January 20, February 11, and March 27, 1930.² Finland raised her duties on January 1, 1930. In so far as increased duties actually increased the spreads between the prices of import and of domestic wheats, the higher tariffs prevalent in 1929-30 than in other years would tend to discourage importation and to en-

courage the use of domestic wheats. But the extent to which the tariff changes were thus effective is not clear. In addition, new regulations appeared tending to expand the utilization of domestic wheats: in France, the requirement, imposed early in December 1929, that flour must contain 97 per cent of domestic wheat, and the erection of a system of bounties on wheat exports; in Germany, successive decrees requiring that flour must include 50 per cent of domestic wheat;³ in Poland, where imports already were strictly controlled by a system of permits, the introduction in November 1929 of a system of export bounties; and in Czechoslovakia, in March 1930, the revival of a system of importation on governmental permits. Roughly similar measures have been discussed in other countries, notably Spain and Great Britain; but so far as we are aware such measures have not become effective in law.⁴ Some of these regulations and tariff changes have been directed primarily toward enhancement of the prices of domestic wheat, but in many instances the contraction of imports has been at least a secondary objective.

A further factor tending to reduce European importation in 1929-30 has possibly been a general scarcity of funds, induced by the great reduction of loans from the United States to Europe. But it is difficult

¹ In January 1930 France increased the duty on Australian wheat, in retaliation to an upward revision of the Australian tariffs such that the Australian tariff was regarded as imposing especially high duties on French goods.

² Recent advices state that a further increase became effective on April 20.

³ The requirement for 50 per cent admixture was first effective early in October 1929. Throughout the period under review, there have been discussions in Germany of proposals to require the admixture of rather large percentages of rye with wheat in the mill mix; but as yet no measure seems to have been adopted.

⁴ The British government is reported to have under consideration a proposal involving compulsory admixture of a certain percentage of domestic wheat in the mill mix, together with the formation of a flour import board to control flour imports. In Spain, wheat producers have requested the government to lower the percentage of foreign wheat legally to be milled with domestic from 25 to 10 per cent, and further to require that only Spanish wheat be consumed in the Canary Islands and the Spanish possessions in Africa. In order to complete the picture of European regulatory measures, it is appropriate here to mention that Sweden and Latvia have adopted the import certificate system, while Hungary has inaugurated a system of export bounties on wheat exported to certain countries.

to demonstrate that the financing of wheat imports has been made strikingly difficult; and certainly, since the opening months of the crop year, when imports were of good volume, interest rates declined to approximately an average and indeed to a low level. Some commentators have attributed the declining prices, though not the small imports, to scarcity of funds available for speculation; but it seems impossible to determine that lack of funds was more important than lack of bullish incentives.

On the whole, then, we are inclined to ascribe the comparatively small wheat imports of the European importing countries as a group during August–March 1929–30 on the one hand to the abundant supply of domestic wheat of good quality, and on the other to reduced consumption of all wheat both for food and feed, a reduction due to a combination of factors, among which the more important seem to be the relative abundance and cheapness of rye and the feed grains, the presence of a business depression, and the efforts of various governments to contract importations. In so far as it was the small imports of Europe that gave rise to the extraordinarily small total movement of wheat in international trade during August–March, this movement seems broadly explicable by reference to the factors named above. Such an explanation, however, is serviceable only as a generalized one. It perhaps serves to explain the small volume of trade in August–March (in common with the low level of stocks of wheat afloat for Europe and in ports of the United Kingdom) or in the crop year as a whole. But it does not locate the European countries where imports suffered relatively the heaviest reduction, nor does it explain why the movement of wheat in international trade, already low in November, fell off so sharply in December–March as compared with August–November.

In some part, perhaps, this decline merely reflects the after-effects of the heavy movement of 1928–29; that is, some of the shipments made in August–September 1929, at the beginning of the crop year 1929–30, may have been due to the fulfillment of contracts executed in May–July 1929, at the end of the old crop year. In larger part, however, it seems to have reflected increasing unwillingness of European importers to

purchase wheat. It is difficult, if not impossible, to arrange in chronological sequence the events which may have led importers to adopt this attitude; but one may hazard the guess that the several factors tending to reduce European wheat consumption became more noticeable in December–March than they had been in August–November. At least so much seems to have been true of the business depression and of the rye and feed grain situation; and for the most part the new governmental regulations and tariff changes were not in effect until December and later.¹ Another important reason for curtailment of import purchases was the sharp decline of wheat prices in January–March. This factor presumably affected the purchases of British importers especially; one cannot reasonably ascribe much significance to evidences of reduced wheat consumption in the United Kingdom. British importers were the more inclined not to purchase on a falling market because very heavy stocks had apparently been built up within the country by the extraordinarily large imports of August–November.² British importers may well have felt that the falling price indicated still further decline.

We see little reason to ascribe the small movement of wheat either in August–March or December–March to a deliberate boycott of North American wheat by European buyers. The newspapers have often commented upon such a so-called trade “war” of Europeans against North Americans, particularly of British buyers against the Canadian pool. One may reasonably doubt, however, if European buyers in general or British buyers in particular have acted otherwise than to purchase wheat in the cheapest export markets — that is, elsewhere than in North America. We have no other definitive evidence. This is no more than the usual commercial procedure; it presumably attracts particular attention this year because Canadian prices, especially in the earlier months, were farther out of line with prices in other markets than they have been in other post-war

¹ Moreover, the large size and good quality of the European wheat and feed grain crops could hardly be as apparent in August or September, when a good deal of the grain was still unharvested, as was true in later months.

² See WHEAT STUDIES, January 1930, VI, 126.

years. United States wheats are often out of line for free exportation even when within the country there are ample supplies; but the fact, being familiar, is not regarded as evidence of a "war." The trading tactics of organizations or individuals are not matters of record. One gets the impression that during the period under review the tenders of North American wheat, especially of Canadian, were not pressed on European importers; yet at the same time the Pool has stated that it sought to make sales but found little interest in its tenders.

DISTRIBUTION OF IMPORTS

As usual, an altogether satisfactory insight into the distribution of imports during December-March and August-March 1929-30, in comparison with earlier years, cannot be obtained. Broomhall's shipments data by destinations yield an imperfect picture because they do not show the final destinations of the large quantities of wheat shipped to orders, and because a good deal of the wheat listed as destined to Holland and Belgium finally reaches Germany and Switzerland. Official import statistics are lacking for many countries; only the English data are available for the month of March; and the available French statistics seem to show the actual monthly arrivals of wheat and flour with accuracy only for short periods. Yet an insight into the distribution of net imports thus far in the crop year is particularly important, not only for the purpose of ascertaining what countries have imported relatively the least wheat, but also for the purpose of providing a basis for adjudging the probable developments in trade during the closing months of the crop year.

We have already observed¹ that shipments of wheat and flour to ex-European destinations were not strikingly small except by comparison with those of 1928-29 and, in a lesser degree, of 1923-24. Table 4 shows Broomhall's shipments in December-March and August-March by countries of destination, for as many years as comparisons are available. Almost without ex-

ception, the several ex-European countries have imported less wheat than in 1928-29; the exceptions are Brazil and Peru. The somewhat higher level of prices of some wheats in 1929-30 probably account in some part for the general decline in importation. But the reduced imports of India, Egypt, and North and South Africa also reflect larger supplies of domestic wheat, and possibly the erection of higher tariff barriers.² Shipments to China and Japan have undoubtedly been reduced largely by a decline in the value of silver; with a short domestic wheat crop and moderately low prices, China might have imported much more wheat and flour than she has been able to do in the presence of the declining value of silver.

By comparison with the two earlier years, 1926-27 and 1927-28, shipments to ex-Europe in December-March and August-March 1929-30 have been well maintained—well enough, on the whole, to lead one to suppose that sufficient wheat and flour has been shipped to provide for such an upward trend in consumption as may exist in the countries concerned. Only the imports of the group of countries designated "North and South Africa" were notably small in August-March 1929-30 as compared with the same period in 1926-27 and 1927-28. December-March shipments, however, were comparatively small not only for North and South Africa, but also for the group designated "Central America." The data available at the moment are insufficient to provide an explanation of the small imports of this heterogeneous group of countries; but it is possible that economic depression in the West Indies traceable to the sugar situation has been of some significance.

As we have seen, it was the small shipments to Europe, not to ex-Europe, that have caused total shipments to be exceptionally small in 1929-30 in comparison with earlier years. It is of interest here to ascertain what countries have imported relatively the least wheat and flour. Table 5 shows Broomhall's shipments to European destinations during December-March and August-March for the past five years; and Table 6 (p. 300) shows official statistics of net imports during December-February and August-February for 1929-30 in comparison with 1925-26 (when imports were small),

¹ See above, p. 293, Table 3.

² Increases in tariff duties became effective in British India on January 1, 1930; in Egypt, on February 17; in the Union of South Africa, on January 17 and March 19.

1928-29 (when they were large) and the average 1924-25 to 1928-29.

So far as August-February (and probably August-March) European imports are

quantity of wheat and flour in August-March. The combined net imports of Belgium, Holland, and Switzerland, always an important group, were of average size or a

TABLE 4.—BROOMHALL'S SHIPMENTS OF WHEAT AND FLOUR BY EX-EUROPEAN DESTINATIONS, DECEMBER-MARCH AND AUGUST-MARCH, 1926-30*

(Million bushels)

Destination	December-March (17 weeks)				August-March (34 weeks)			
	1926-27	1927-28	1928-29	1929-30	1926-27	1927-28	1928-29	1929-30
Central America ^a	23.29	19.26	23.38	16.46	35.71	30.44	44.01	36.40
China and Japan.....	9.24	14.60	38.73	14.69	21.14	21.20	50.01	26.56
Brazil	6.54	9.45	9.39	9.33	13.95	17.97	19.04	19.53
Egypt	3.36	2.53	7.82	2.73	6.25	5.39	12.69	4.98
North and South Africa.....	2.62	2.20	3.44	.81	4.34	3.75	5.63	1.67
Chile .....	.07	.01	.03	...	.14	.06	.03	...
India	1.08	1.45	17.59	3.65	1.08	1.51	21.33	5.25
Syria .....	.07	...	...	...	.10	.15	.44	...
Peru .....	...	.27	.11	.40	...	.38	.24	1.11
Palestine .....	...	...	.27	...	...	...	.40	...
New Zealand .....	...	...	.02	...	.09	...	.02	...
Total	46.27	49.77	100.78	48.07	82.80	80.85	153.84	95.50

* Data from the *Corn Trade News*.

^a Includes Venezuela, West Indies, Dutch East Indies, etc.

concerned, these tables suggest that Italy and France were principally responsible for the strikingly small imports of 1929-30; Germany and the central European coun-

little larger in August-February. The Scandinavian and Baltic countries as a group have imported more than an average quantity, though a good deal less than in 1928-29,

TABLE 5.—BROOMHALL'S SHIPMENTS OF WHEAT AND FLOUR BY DESTINATIONS IN EUROPE, DECEMBER-MARCH AND AUGUST-MARCH, 1925-30*

(Million bushels)

Destination	December-March (17 weeks)					August-March (34 weeks)				
	1925-26	1926-27	1927-28	1928-29	1929-30	1925-26	1926-27	1927-28	1928-29	1929-30
Orders	49.4	65.5	60.6	68.8	41.0	71.7	90.4	91.3	94.8	89.6
United Kingdom	54.2	57.1	49.6	49.6	32.0	104.1	111.3	109.7	107.4	84.1
France	5.3	19.0	7.5	14.8	6.2	16.9	37.6	19.5	29.4	13.4
Belgium	12.8	17.4	18.4	20.1	12.5	30.5	34.4	43.0	38.3	27.1
Holland	9.2	21.1	23.1	19.4	10.4	24.8	44.3	53.5	48.9	21.7
Germany ^a	11.3	18.1	22.7	19.7	9.3	26.0	39.4	47.3	46.9	23.0
Italy	17.8	36.1	24.6	23.1	9.7	35.0	54.3	44.9	50.9	14.8
Greece ^b	5.5	6.3	4.8	6.6	4.3	11.6	11.6	9.8	14.6	10.4
Scandinavia	3.9	6.2	6.6	10.9	5.1	10.7	13.0	13.8	18.7	11.2
Austria ^c	4.8	4.2	4.4	6.8	8.0	9.1	10.0	9.3	11.8	14.7
Spain ^d	1.4	1.8	.6	5.5	2.3	1.9	2.8	1.7	15.6	2.9
Total	175.6	252.8	222.9	245.3	140.8	342.3	449.1	443.8	477.3	312.9

* Data from the *Corn Trade News*.

^a Includes Poland and Czecho-Slovakia.

^b Includes Turkey.

^c Includes Malta.

^d Includes Spanish Colonies and Portugal.

tries were responsible in a less striking degree. The United Kingdom this year imported somewhat more than an average

when cheap low-grade Canadian wheat was being imported for feeding purposes. So far as one can judge from Broomhall's

shipments data, the imports of Spain, Portugal, and Greece in August–March were of average size, though smaller than in 1928–29. On the other hand, the combined imports of Czecho-Slovakia, Austria, and Poland in August–February were somewhat below average in size, but not strikingly so; for the missing Austrian net import statistics for January and February would increase the total somewhat. German net imports were also rather small in August–February, but again not strikingly so.

little smaller in December–February 1929–30. Germany imported more than usual; this resulted from purchases made in anticipation of tariff increases in January and February. Belgium, Holland, and Switzerland as a group imported rather a small quantity; the French and Italian imports were strikingly small. The United Kingdom, having imported exceptionally large supplies in August–November, took exceptionally small quantities in December–March, some 60 million bushels as against an aver-

TABLE 6.—NET IMPORTS OF EUROPEAN COUNTRIES DURING DECEMBER–FEBRUARY AND AUGUST–FEBRUARY, 1929–30, WITH COMPARISONS*
(Million bushels)

Country	December-February				August-February			
	1925-26	1928-29	Average 1924-25 to 1928-29	1929-30	1925-26	1928-29	Average 1924-25 to 1928-29	1929-30
United Kingdom ^a	76.44	76.98	74.56	59.91	139.70	142.95	149.40	154.18
Italy	16.16	19.99	21.80	5.89	25.25	45.53	38.25	10.82
Germany	(1.45) ^b	11.15	13.79	22.04	21.51	37.67	41.10	34.56
France ^c	2.33	9.90	9.11	1.36	20.27	27.58	26.74	18.40
Other Western Europe ^d	18.85	19.91	20.33	18.41	49.12	50.60	50.71	50.96
Other Central Europe ^e	6.87	7.39	9.01	6.38 ^f	21.90	21.55	24.77	17.30 ^f
Other Northern Europe ^g	6.42	10.04	7.79	6.69 ^h	17.08	25.25	19.38	19.54 ^h

* Data from official sources, mostly as reported by the International Institute of Agriculture. For each country or group of countries, the figures are summations of the net imports of individual months, in some instances (Germany, Poland, and France) minus net exports in individual months.

^a Includes Irish Free State. Data for December–March and August–March, with imports of Irish Free State in March 1930 estimated.

^b Net exports.

^c Net imports in “commerce special.” The data do not show the net difference between arrivals and departures of wheat and flour, for in some periods wheat arrivals go largely into “temporary admission” and are not reported

as imports in “commerce special” until weeks or months later.

^d Belgium, Holland, Switzerland.

^e Czecho-Slovakia, Poland, Austria.

^f Excluding Austria in January and February.

^g Denmark, Norway, Sweden, Finland, Latvia, Estonia, Lithuania.

^h Excluding Latvia in January and February.

France, however, imported much less than usual; and of the total of 18.4 million bushels imported in August–February, some 11.4 million were apparently imported in the two months of August and September 1929, before the effects of the big French crop of 1929 could be registered. The most striking reduction occurred in Italy, where August–February net imports of 10.8 million bushels were not much more than a fourth of the average imports in these months.

If we consider December–February or December–March imports, it appears that Spain and Portugal, Greece, the Scandinavian and Baltic countries, and the group including Austria, Czecho-Slovakia, and Poland¹ imported average quantities or a

age of 75 million. In this period it seems clear that the United Kingdom, France, and Italy, and in a lesser degree Belgium, Holland, and Switzerland, were chiefly responsible for the small volume of international trade in December–March 1929–30. Of the various European countries, the United Kingdom, and probably Belgium, Holland, and Switzerland, seem to have placed themselves in a position such that imports larger than those of December–March will have to be made in April–July. Possibly this is true of Italy, the Scandinavian and Baltic countries, and the central European countries except Germany, though with respect to Italy the evidence is uncertain in view of

¹ Poland was a net exporter in January and February 1930.

the lack of information regarding the carry-over into 1929-30 and the extent to which corn and rice may have been substituted for wheat. France seems hardly likely to import more in April-July than in December-March in view of the generally admitted abundance of domestic wheat; but unfavorable prospects for the crop of 1930 might give rise to fairly heavy imports in the closing months of the crop year. All told, the European import statistics suggest that European demand for import wheat promises to be more active in April-July 1930 than it was in December-March. Importers as of April 1 were apparently in a less favorable position to resist advancing prices or to accelerate falling prices than they were on December 1; yet there seems to be little reason to suppose that total stocks have anywhere been so far reduced that panicky buying is in prospect except in the event of a serious crop scare.

SOURCES OF EXPORTS

Among the several wheat exporting countries, only Hungary, Jugo-Slavia, and the three French dependencies of northern Africa shipped unusually large quantities of wheat and flour during December-March 1929-30, as compared with earlier years. Broomhall's shipments by countries of origin are shown in Table 7 (p. 302), with comparisons; the table also shows official statistics of net exports from the major exporting countries. Large inward carryovers of wheat, good wheat crops in 1929, and big crops of corn and barley have stimulated exports from Hungary and Jugo-Slavia. But the Roumanian wheat crop of 1929 now appears to have proved too small to permit more than a trickle of exports;¹ and the Bulgarian crop was so short that the country seems to have been a net importer of wheat and flour. The large crops of 1929

in northern African countries have permitted rather liberal exports. India shipped little or nothing, and, with her rather short crop of 1929 following the even shorter one of 1928, was a net importer of wheat and flour,² though imports were much smaller than in 1928-29 or 1921-22. Russia, in spite of a rather small wheat crop and of continued use of bread cards in cities, exported a few million bushels of wheat in February-March; Broomhall's data suggest 2.54 million.³ The government succeeded in collecting large quantities of wheat, and apparently saw fit to export some even in the face of low and declining prices and of (possibly) domestic shortage. The reason generally ascribed is the need of funds to finance imports of manufactured goods.

Exports from the major exporting countries were strikingly small in view of available supplies, especially those of Canada and the United States. Canada exported only some 49 million bushels in December-March 1929-30, the smallest quantity recorded in the same months of any of the past seven years. Yet the Canadian visible supply on December 1, 1929, was the largest in post-war years by a margin of some 40 million bushels.⁴ The price relationships both on the import market and between futures prices at Winnipeg and Liverpool continued, as in August-November, to favor the purchase by European importers of Argentine rather than of Canadian wheat, in so far as they chose to purchase from any source.⁵ Net exports from the United States during December-March 1929-30 were some 37 million bushels. This quantity was not a small one as compared with the exports of earlier years. But it was undoubtedly small in comparison with available supplies; total wheat stocks were unquestionably larger on December 1, 1929, than they had been at the same date in any post-war year except possibly 1928. As in August-November 1929 and in the mid-winter months of 1923-24, 1927-28, and 1928-29, the spread between Chicago and Liverpool prices was too narrow to permit a free flow of wheat to export;⁶ importers could purchase Argentine wheats to greater advantage so far as they wished to purchase from any source. The failure of wheat to flow freely to export was a less striking phenomenon in the United States than in Canada.

¹ See Appendix Table VI.

² See Appendix Table VI.

³ See Appendix Table VII.

⁴ See below, Chart 2, p. 304.

⁵ See below, p. 314. In the course of December-March these relationships became considerably more favorable toward stimulating Canadian exports than they had been in August-November.

⁶ In March 1930, when Chicago prices were farthest out of line with Winnipeg and Liverpool prices, the United States was a small net importer of wheat, though not of flour.

It was even less striking in Australia and Argentina, but was nevertheless present. Australia exported some 28 million bushels in December–March, a quantity about like the exports of similar periods of 1922–23 and 1927–28, years when the wheat crop was smaller than that of 1929. In December–March of other post-war years, even when the wheat crop was as small as or smaller than that of 1929 (in 1923 and 1925) she exported well over 28 million bushels. It seems therefore fairly clear that Australian wheat has not flowed to export as freely as available supplies would permit.¹

wheat were relatively small in contrast with the size of the new crop, even though the new crop is itself apparently somewhat the smallest since 1920. It is unreasonable to ascribe the restricted flow of exports from Argentina to a spread between Argentine and British prices too narrow to permit free movement; on the contrary, though the spread has been narrow because of the low level of ocean freight rates, Buenos Aires prices seem not to have been out of line with Liverpool prices, and Rosafé wheat has persistently sold at lower prices than roughly comparable North American

TABLE 7.—INTERNATIONAL SHIPMENTS AND NET EXPORTS OF WHEAT AND FLOUR FROM PRINCIPAL EXPORT AREAS, DECEMBER–MARCH, 1922–30*

(Million bushels)

Dec.-Mar.	International shipments (Broomhall)								Net exports from			
	Total	North America	Argentina	Australia	Russia	Balkans	India	Others ^a	United States	Canada	Argentina	Australia
1922-23	226.0	139.6	52.8	24.8	....	2.0 ^b	6.8	....	49.0	84.3	56.6	25.1
1923-24	270.0	159.2	56.0	33.2	10.4	10.4 ^c	.8	....	34.6	117.0	65.2	38.9
1924-25	272.0	116.8	66.0	60.4	....	14.0 ^c	14.8	....	63.4	61.9	65.0	60.0
1925-26	234.8	128.8	33.6	40.8	4.8	12.0	....^d	14.8 ^e	21.8	116.4	35.5	42.2
1926-27	301.6	159.2	60.8	49.6	20.4	10.4	.4	.8	42.3	100.6	69.5	51.3
1927-28	272.8	149.6	82.4	27.6	.8	10.0	.4	2.0	32.1	113.2	93.9	27.1
1928-29	346.4	176.0	93.6	60.4	....	14.4	....	2.0	32.8	124.7	95.2	59.8
1929-30	188.4	90.8	45.6	28.0	....^f	18.8 ^g	....^d	5.2 ^h	37.1	49.1	44.0 ⁱ	27.8 ^j

* Shipments figures are Broomhall's cumulative totals for seventeen weeks from the *Corn Trade News*. These totals for the Balkans, Russia, North Africa, and Chile, do not agree with the weekly data given in Appendix Table V. Net exports are official data.

^a Except as noted, North Africa and Chile.

^b Includes some shipments from Manchuria.

^c Includes some shipments from Mesopotamia.

^d Shipments from India reported with "Others."

^e German shipments of 14.4 million bushels included.

^f Russian shipments included in "Balkans."

^g Includes shipments of something over 2.5 million bushels from Russia.

^h Includes shipments from India.

ⁱ March exports estimated from Broomhall's shipments.

^j January–March exports estimated from Broomhall's shipments.

The visible supply in Australia was 56 million bushels on April 1, 1930, some 3 million larger than it was on the same date of 1929; and this in spite of the fact that the crop of 1929–30 was 35 million bushels smaller than the crop of 1928–29.

Argentina exported only 44 million bushels in December–March 1929–30, notably the smallest quantity exported in these months of any post-war year except 1925–26, when the quality of the crop was decidedly poor. Perhaps around a third of this year's exports in December–March consisted of old-crop wheat from the large carryover; if so, shipments of new-crop

¹ This is even more apparent if one compares the post-war exports of January–March, when little old-crop wheat is moving to export.

wheats (No. 3 Northern Manitoba and No. 2 Winter) on the British import market. There seems good reason to suppose that Argentine wheat has not been exported freely mainly because importers have been unwilling to purchase any sort of wheat freely. The meager demand of European importing countries provides, in our judgment, the most satisfactory generalized explanation of the small total movement of wheat in international trade in December–March. The flow of wheat to export was everywhere rather hampered (available supplies considered) by circumstances traceable to the European situation, but prevailing international price relationships contributed strongly to the slow tempo of the movement from North America.

III. VISIBLE SUPPLIES AND OTHER STOCKS

The period under review was characterized by the presence of exceptionally heavy stocks of wheat, especially of visible supplies, in North America. In the Southern Hemisphere, on account of the small wheat crops of 1929 in Argentina particularly, stocks seem to have stood at or below an average level. The importing countries of Europe, although their imports were small, probably had stocks average or above in size on account of heavy inward carryover, big wheat crops in 1929, and reduced consumption for food and feed. The exporting countries of the Danube basin probably had stocks about of average size, and so with the countries of northern Africa. Stocks afloat to Europe were relatively small. In general—excluding from consideration the situation in India, Russia, China, and the ex-European importing countries, for which the information is decidedly meager—there is reason to believe that wheat and flour stocks throughout the world stood on March 31, 1930, well above the average level of recent years. Nevertheless the level was not so high as on March 31, 1929, for the reduction in Argentine stocks was too great to be offset by the few small increases elsewhere. The high level of stocks throughout the period under review, particularly in the more prominent positions (visible supplies), was a distinctly depressing factor on prices on the world wheat market. With stocks at a more nearly normal level, the decline of prices probably would not have occurred.

VISIBLE SUPPLIES

Chart 2 (p. 304) shows the weekly course of visible supplies in the United States, Canada, afloat to Europe and in ports of the United Kingdom, and in total, with comparisons. In 1928-29 the total maintained a level unprecedentedly high; but thus far in 1929-30 the level has been higher still. During the course of December-March, especially December, the level in 1929-30 became less strikingly high by comparison with 1928-29 than it had been before. Last year visible supplies in the United States did not begin to decline until early January, while this year the decline began in early November; farmers marketed their wheat

more freely in the early months of the crop year 1929-30 than they did in 1929-29.¹ In Canada also the movement of wheat from farm to market was heavy in the early months, and visible supplies increased only slightly after the first week of November, whereas in 1928-29 heavy marketings caused the visible supply to increase sharply in November-December. But Canadian visibles which include stocks in lake and Atlantic ports of the United States would have declined much more rapidly than in fact they did if the movement of Canadian wheat to export in December-March had been more in accord with the proportion of available supplies usually exported during this period of the year.

The course of the curve of total visibles was necessarily determined by the movements of its several components, of which the visibles of the United States and Canada are the dominant ones. The movement of these was sufficient to outweigh, in their effect upon the total, the unusual movement of visibles afloat for Europe and in ports of the United Kingdom. Ordinarily these stocks tend to increase between December 1 and April 1, though there is usually a decline during December. This year the usual increase between December 1 and April 1 did not occur, presumably because European importers curtailed their purchases,² especially in January-March. The average change (1923-24 to 1928-29) in visible supplies afloat to Europe, from January 1 to April 1 was an increase of 27.8 million; this year there was an increase of only 6.0 million. The average change, similarly computed, of stocks in ports of the United Kingdom was a decrease of 0.4 million bushels; but this year there was a decline of 3.8 million. Conditions were such that importers preferred to draw upon stocks. These developments made for a sharper decline in total visible supplies than is usual in the mid-winter months; but their effect was overshadowed by developments in the United States and Canada.

¹ See Appendix Table II, which shows monthly wheat receipts at primary markets in the United States and Canada; and discussion in *WHEAT STUDIES*, January 1930, VI, 121-24.

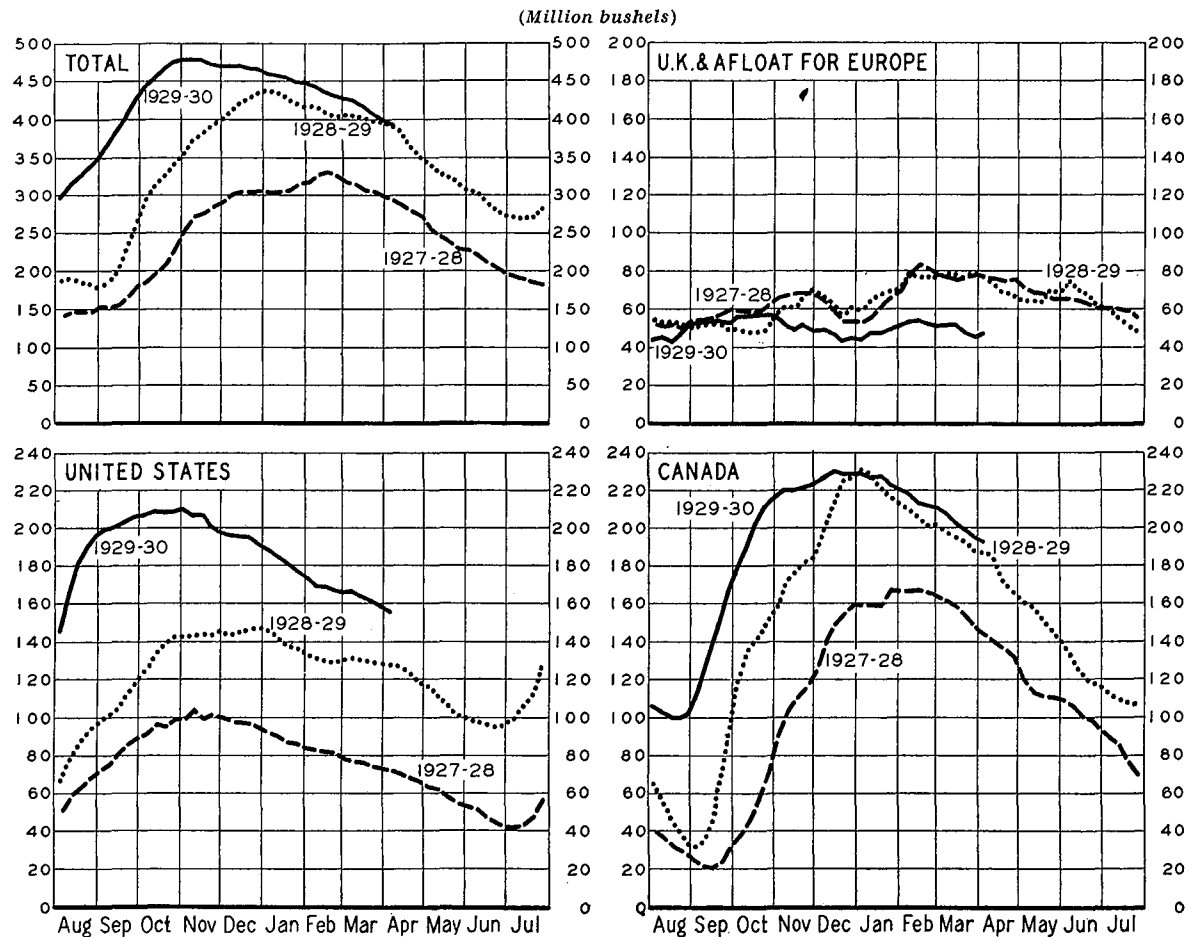
² See above, p. 297.

WHEAT STOCKS IN EXPORTING COUNTRIES,
MARCH 31

The outlook for international trade and prices during the closing months of the crop year necessarily becomes somewhat clarified if the facts are assembled with regard to the supplies of wheat available at

States, added to Bradstreet's estimates of visible supplies, yield a total in these positions of 390 million bushels, quite the largest in post-war years. These stocks had exceeded 350 million bushels in 1919, 1920, and in 1929; but the highest figure, that of 1929, was some 26 million bushels below the figure for March 1, 1930. Only the stocks

CHART 2.—VISIBLE WHEAT SUPPLIES IN THE UNITED STATES, CANADA, AND UNITED KINGDOM PORTS AND AFLOAT TO EUROPE, WEEKLY FROM AUGUST 1927*



* Data from *Grain Dealers Journal*, *Northwestern Miller*, and *Canadian Grain Statistics*.

the end of March. Appraisal of stocks is never easy, because stocks are accounted for in very few countries or positions. For most countries, conclusions must be reached largely on the basis of hypotheses regarding consumption; only for the United States and Canada are reasonably comprehensive data available.

Official estimates of stocks on farms and in country mills and elevators in the United

held in terminal markets (visible supplies) were of record size, however. Wheat stocks on farms had been larger in eight of the preceding eleven years, and stocks in country mills and elevators had been larger in four. One may reasonably assume that if stocks in these three positions were of record size at the beginning of March, they were of record size at the end of the month also. Moreover, stocks held by city mills

were probably decidedly large, though the facts are not clear with regard to years prior to 1926. Data for 1930 are not yet available. But these stocks (excluding from the estimates of the Census Bureau the quantities held by city mills in country elevators and in public terminal elevators so as to avoid duplication) stood at the record height of 146 million bushels on December 31, 1929; and even if they were reduced between that date and March 31, 1930, by a larger amount than in any of the preceding four years,¹ they must on March 31 still have stood rather higher than in preceding years. The United States was apparently one of the few countries in the world where total stocks of wheat and flour at the end of March 1930 were even larger than in 1929.²

As we have seen,³ Canadian visible supplies at the end of March 1930 were even higher than they had been the year before, when the level was unprecedentedly high. Nevertheless total stocks of Canadian wheat in Canada and the United States together were somewhat smaller this year than last, though otherwise the largest on record. If we add to the official Canadian estimates of stocks within Canada⁴ the figures for stocks in United States lake and Atlantic ports, the following figures, in million bushels, appear for the four post-war years of largest stocks:

March 31	Total stocks
1924	214.5
1928	240.8
1929	268.1
1930	253.3

By comparison with 1929, stocks on March 31, 1930, were larger in elevators and in flour mills, but smaller on farms and in transit. The striking feature of the Cana-

dian stocks position in 1930 has been the extraordinarily high proportion of stocks to the available supplies, the result of the greatly restricted export movement.⁵ The rather smaller Canadian stocks held at the end of March 1930 as compared with 1929 seem not to have been small enough to offset the larger stocks of United States wheat, so that total stocks in the two great North American exporting countries at the end of March 1930 were almost certainly larger than in any of the preceding four years, and probably the largest since the war.

Australian stocks as of March 31 were presumably about average in size. The crop of 1929-30, harvested in November-January, was below the average of recent years; but the movement of wheat to export during January-March was also below the average. The difference between January-March net exports in 1930 and 1929 was almost as large as the difference in the crops, so that end-March stocks this year seem to have been little smaller than in 1929.

In Argentina, however, the stocks position was decidedly different. The new crop harvested in December-February 1929-30 was apparently the smallest in post-war years, though a heavy carryover on December 31, 1929, may have raised total available supplies as of that date to a level roughly comparable with the levels at similar dates in 1921, 1922, 1924, and 1925. Nevertheless total available supplies on December 31, 1929, must have been lower than those of 1923, 1926, 1927, and 1928, especially the last two of these years, when the new crops approximated 290 and 340 million bushels respectively, or more than 100 million bushels in excess of the crop of 1929. The movement of wheat to export in January-March was relatively small this year, but not so small as to leave heavy stocks within the country. So far as we are able to judge from rough calculations involving stocks at the end of each calendar year, new crops, and net exports and domestic utilization in January-March, the total stocks remaining on March 31, 1930, were larger than those of 1925 and 1927, but smaller than those of 1926, 1928, and 1929. They seem to fall below the end-March stocks of 1928 and 1929 by approximately 40 and 100 million bushels respectively; but they are presumably not much more

¹ A relatively heavy reduction is probable in view of the fact that the Chicago May future stood, during most of March, at a premium over the July; and this relationship was not such as to encourage millers to hold stocks.

² Moreover, at 5.9 million bushels, the stocks of United States wheat held in Canadian ports at the end of March were larger than in any of the preceding eight years.

³ See above, Chart 2, p. 304.

⁴ See Appendix Table X.

⁵ See above, p. 301.

than 20 million bushels or some 10 per cent below the average of the five years 1925-29. These comparisons rest upon the assumption that the Argentine crop of 1929 approximated 175 million bushels; if the crop was appreciably larger or smaller than this, the comparisons must be appropriately qualified. It is clear, however, that Argentine stocks at the end of March 1930 were so much smaller than they were in March 1929 that stocks in the four major exporting countries combined were also smaller; the increase in United States stocks was much more than offset by declines in Canada and especially in Argentina. Nevertheless it is important to observe that stocks at the end of March 1930 in the four countries combined were almost certainly larger than in any other year of the past decade except 1929.

The stocks position in the Danube basin is more difficult to evaluate. The crop of 1929 was only of average size; but net exports during August-March were exceptionally large. Other things equal, this suggests small stocks at the end of March 1930; and the trade journals indicate that many observers hold this opinion. But there is reason to believe that the carryover into the crop year 1929-30 was a very large one, and that the abundance of corn and barley this year may have tended to restrain the consumption of wheat. We are disposed to believe that, in the Danube basin as a whole, stocks at the end of March 1930 were close to average size, but a good deal smaller than in 1929.

Too little information on the situation in India, Russia, and the northern African countries is available to warrant detailed comparisons. To judge by the size of the wheat crops of 1929 and the trade statistics, Russia may have held at the end of March 1930 somewhat the smallest stocks since 1925; Indian stocks may have been about like those of recent years or a little smaller; and northern African stocks may also have been close to the average of recent years.

All told, exporting countries (excluding Russia) appear to have held stocks at the end of March 1930 larger than in any post-war year except 1929 and hence above the average. Throughout the period under review, importers have been justified in regarding the size of export stocks, especially

in North America, as a factor tending to depress wheat prices, other things equal.

IMPORTING COUNTRIES

Throughout the period under review, the trade journals have referred fairly consistently to a supposedly low level of stocks in the European importing countries, notably of continental Europe; but, as usual, it is often impossible to ascertain whether these references were to total stocks, or to total stocks of import or of domestic wheat, or merely to certain stocks in particular positions. In our judgment the general level as of the end of March 1930 is not to be described as low, but rather as average or somewhat above, and possibly as high as the level of 1929. This opinion—scarcely to be considered as more than an inference in view of the lack of concrete statistical measurements—assumes considerable importance in our attempt to formulate the outlook for trade, prices, and carryovers in the closing four months of the crop year. We see little reason to suppose that importing countries thus far in the crop year have so far drawn upon stocks that they must turn avidly to the exporting countries for extraordinarily heavy supplies in the closing months, though there is reason to believe that imports will be heavier in April-July than they were in December-March.¹ The stocks position at the end of March, however, seems to have differed greatly from country to country.

We may first consider the importing countries of Europe as a group. The supplies of wheat available to these importing countries through native wheat crops and imports do not appear small by comparison with earlier years when weight is given to various qualifying factors. The absolute figures on available supplies for 1929-30 seem small, however, if viewed without qualification.

Thus the official estimates of the 1929 wheat crops in the European importing countries, plus Broomhall's shipments to Europe during August-March, totaled only 1,431 million bushels in 1929-30 as against 1,442 million in 1925-26, another year of large crops and small imports. Over the interval of four years the wheat-consuming population has grown, and possibly per

¹ See above, pp. 300 f.

capita wheat consumption has increased.¹ If so, the available supplies of 1929-30 seem at first glance too small, as compared with those of 1925-26, to have permitted stocks of equal size to have been maintained simultaneously with increased consumption. But the figures contrasted for these two years do not suggest this if one recalls (1) that the available supplies of 1929-30 were increased in relation to those of 1925-26 because this year stocks afloat to Europe were reduced between August 1 and April 1, whereas in 1925-26 they were enlarged;² (2) that the European inward carryover of 1929-30 was much larger than the small one of 1925-26; and (3) that the European crop of 1929 was apparently underestimated while that of 1925 may have been slightly overestimated. Again, the available supplies of 1929-30 seem so much smaller than those of 1928-29 (1,431 as against 1,517 million bushels) that at first glance it appears unreasonable to suppose that stocks on March 31, 1930, could have stood at as high a level as they did the year before. Yet such an inference is not in fact unreasonable if one recalls (1) that stocks afloat to Europe declined during August-March this year, but increased in 1928-29;³ (2) that circumstances are such in 1929-30 as to encourage less heavy utilization of wheat both for food and for feed than occurred in 1928-29; (3) that the carryover into 1929-30 was probably larger than the carryover into 1928-29; and (4) that the wheat crop of 1929 may be underestimated.

The general conclusion regarding the stocks held in European importing countries at the end of March 1930 seems not to be invalidated if one compares, for individual countries, the crops plus the August-

February net imports over the past six years. A detailed discussion is hardly appropriate here; but it seems clear that, among all but the least important wheat-consuming countries, only Holland and Norway could have held stocks distinctly below average in size on March 31, 1930. France and Spain seem to have held large stocks—Spain because of her big crop, France because of her big inward carryover and big crop. There seems to be no reason to describe stocks in the United Kingdom, Italy, Germany, Belgium, Switzerland, Czecho-Slovakia, Austria, Poland, Sweden, and Denmark as either notably large or notably small. In Italy the inward carryover was large, the crop a bumper; and the extraordinarily small imports were probably offset not only by these factors, but also by circumstances encouraging the consumption of corn and rice at the expense of wheat. Germany, with a fairly large inward carryover, has presumably had available ample quantities of wheat from her crop and net imports, especially if one considers the abundance and cheapness of rye and the feed grains, and the business depression. In short, the widely circulated notion that European total stocks must have stood at a low level during recent months seems to us not to be well founded. Perhaps this notion receives statistical support principally from the fact that shipments of wheat and flour to European importing countries as a group, and net imports of several European countries, have run extraordinarily small in August-March 1929-30. In our view the small shipments and imports reflect the abundance of wheat supplies in relation to consumption demand, and not a widespread tendency to reduce total stocks to a low level, though it is not unlikely that this has occurred in some countries. Doubtless the continental European importing countries have thus far in 1929-30 consumed relatively more domestic wheat and relatively less import wheat than in other recent years. Even so, one cannot reasonably infer that stocks of all wheat have been reduced to a low level. With allowance for inward carryover, the total quantity of wheat available was fairly large despite small imports; and the general situation made for relatively small consumption for food and feed.

¹ The evidence by no means conclusively demonstrates a tendency for per capita consumption to increase over this period; increases in some countries may have been offset by decreases in others.

² Thus, if one were to calculate total available supplies by reference to domestic crops, plus Broomhall's shipments to Europe, plus (or minus) the change in stocks afloat to Europe, European available supplies in importing countries in 1925-26 would be 1,429 million bushels rather than 1,442; and in 1929-30, some 1,435 million rather than 1,431 million.

³ The decline was 3.4 million bushels this year as against an increase of 26.3 million in 1928-29. Allowance for changes in afloat stocks makes European available supplies to appear not 86 million bushels smaller in 1929-30 than in 1928-29, but 56 million smaller.

IV. WHEAT PRICE MOVEMENTS

THE LEVEL OF PRICES

In a sense any analysis of average price levels is misleading, for prices during as long a period as the four months December–March seldom happen to remain at the same level in any year; and in some years, like 1929–30, 1925–26, and 1924–25, even an approximate level about which prices tend to fluctuate is not to be perceived except by the use of averages that may give a quite fictitious impression of stability. Nevertheless four-month average prices serve to throw into relief certain significant features of the wheat price situation in 1929–30 as compared with earlier years. December–March average cash prices of wheat on the international market, in three great exporting countries, and (of domestic wheats) in four great importing countries are shown in Table 8 for the past six years. Chart 3

TABLE 8.—AVERAGE WHEAT PRICES IN LEADING EXPORTING AND IMPORTING COUNTRIES, AUGUST–MARCH, 1924–30*
(Cents per bushel)

	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30
British parcels...	183	169	164	152	130	135
United States...	157	161	137	131	111	120
Canada	156	141	126	123	102	130
Argentina	159	146	131	129	110	112
Great Britain...	159	151	156	136	126	125
France	172	145	180	159	161	142
Germany	149	154	173	160	139	154
Italy	188	204	212	186	187	185 ^a

* Derived from price series described in Appendix Tables VIII and IX.

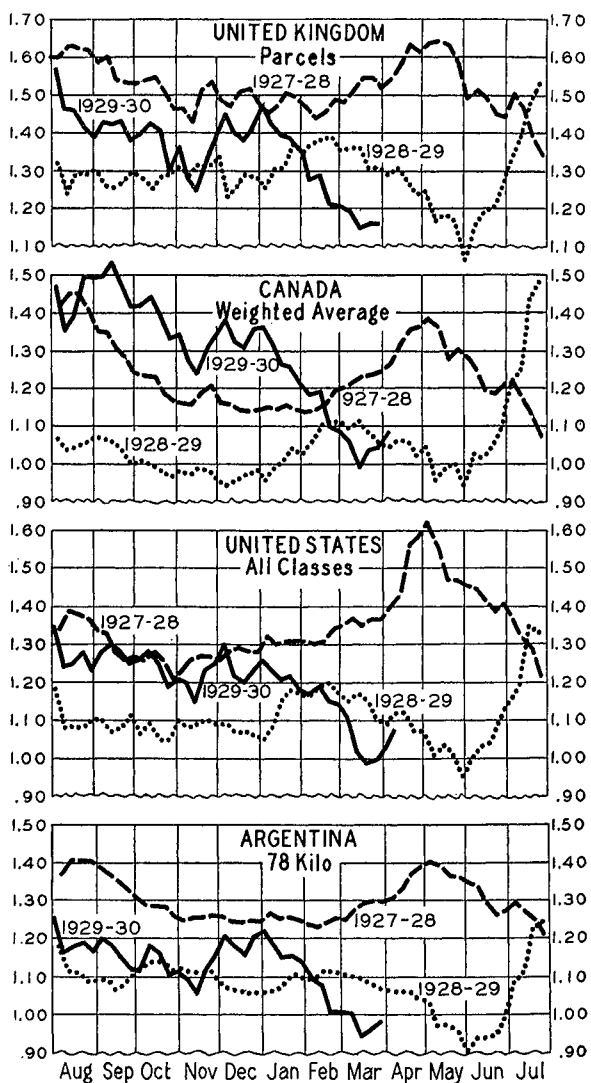
^a Last two weeks of March missing.

shows, for the three exporting countries and the United Kingdom, weekly average cash prices during August–March 1929–30 and the two preceding crop years.

Table 8 serves again to emphasize a fact to which we have often referred. Wheat prices, between one crop year and another, do not change in all countries in the same direction or by the same amounts; local conditions exert a good deal of influence. As compared with December–March 1928–29, wheat prices during the corresponding months of 1929–30 averaged about the same

in Argentina; in the United States and the United Kingdom (for import wheats), the prices of 1929–30 were a little higher; in

CHART 3.—WEEKLY AVERAGE PRICES OF WHEAT IN LEADING EXPORTING AND IMPORTING MARKETS, FROM AUGUST 1927*
(U.S. dollars per bushel)



* For sources, see Appendix Table VIII.

Canada and Germany, a good deal higher; in Italy and England, a little lower; and in France a great deal lower. In Canada, the crop of 1929 was so much smaller and of so much better quality than that of 1928 that

higher prices in the present year are not surprising; given different circumstances outside of Canada, a considerably larger price change might have been expected. The higher prices of German domestic wheat this year than last are not surprising, for the German crop of 1929 was smaller than that of 1928, and the tariff much higher; moreover, milling regulations this year have tended to expand the utilization of domestic wheat at the expense of imported wheat. Given different circumstances outside of Germany, prices this year might have been higher still. That French prices were strikingly lower this year than last reflects chiefly the huge crop of 1929, which far exceeded that of 1928. As Table 8 shows, the same sort of change in price occurred in France between December-March 1924-25 and 1925-26 as occurred between 1928-29 and 1929-30, though the earlier change was the larger. In both instances French prices declined more than prices elsewhere, and for essentially similar reasons—big crops following crops of small or average size. It is difficult, perhaps as yet impossible, to explain in detail the less striking wheat price changes between 1928-29 and 1929-30, or between any other pair of years. Every change is presumably influenced both by local and by world conditions, often not to be distinguished one from the other, and clearly unmeasurable.

As Table 8 shows, the average level of December-March prices in many countries was rather low in comparison with earlier years. Precise comparisons are misleading, for in some countries the average level of prices in 1929-30 was not as low as in several of the preceding years. Nevertheless it is safe to say that, except for prices in Canada and Germany, the wheat price level of 1929-30 ranks with the low levels of 1923-24 (not shown in Table 8) and 1928-29. It was not an unprecedentedly low level; nevertheless 1929-30 is the only post-war year in which a world wheat crop falling well below the line of post-war trend has been followed by comparatively low prices. The low mid-winter prices of 1923-24 and 1928-29 followed world wheat crops of 1923 and 1928 which were well above the line of post-war trend. The appearance of relatively low prices following a relatively small wheat crop in 1929-30 seems expli-

cable in considerable part by the heavy inward carryover of wheat. But in the absence of abundant supplies of rye, potatoes, and the feed grains, and of business depression and a rather low general level of wholesale prices in many countries, wheat prices might not have fallen to so low a level in December-March 1930. The level of prices thus far in the crop year 1929-30, exposed on the one hand to the single important price-raising influence apparent in the statistical data bearing on the world wheat situation—the relatively small wheat crop of 1929—was exposed on the other hand to a combination of price-depressing influences carrying sufficient weight to offset the effect of the small wheat crop.

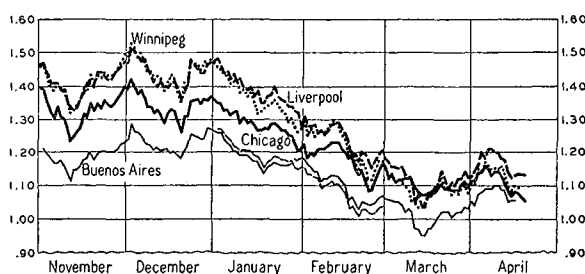
This relatively low level of prices, characteristic not only of December-March but of August-March 1929-30, has contributed significantly to a remarkably widespread revival or flowering of governmental efforts to raise domestic wheat prices, or resist anticipated declines. In particular, the activities of the two co-operative corporations represent such efforts in the United States; in Canada the legislatures of the Prairie Provinces gave official support to the Pool; in Australia proposals for compulsory pooling were revived. Legislation affecting the wheat trade was passed in Germany, France, Finland, Poland, Czecho-Slovakia, Sweden, Latvia, Hungary, India, Egypt, and the Union of South Africa, and measures were seriously discussed in Spain and Great Britain. Frequently the legislation and the discussions involved the problem of raising the prices of domestic wheats, though in some instances in Europe, reduction of wheat imports in order to improve trade balances was also a prominent motive.¹ In countries where small or average domestic wheat crops have brought moderately low prices, or in countries like France where a large domestic crop has occasioned extremely low prices, the situation of producers has inevitably received a great deal of attention. In Germany and Poland, emphasis has fallen upon improvement of the rye rather than of the wheat situation, rye being a far more important crop, especially in relation to agrarian unrest.

¹ See above, p. 296.

THE COURSE OF PRICES

In general, wheat prices tended to decline in the period under review, especially from early January until about the middle of March. Chart 4 shows the course of May futures (closing) prices in Liverpool, Chicago, Winnipeg, and Buenos Aires from December 1929 to April 1930. The first part of the month of December witnessed a sharp decline, induced largely by a rather sudden cessation of unfavorable crop reports from Argentina; this was followed

CHART 4.—COURSE OF WHEAT FUTURES PRICES IN LEADING MARKETS, NOVEMBER–APRIL 1929–30*
(U.S. dollars per bushel)



* Data from *Daily Trade Bulletin*. May futures in Liverpool, Winnipeg, and Chicago; February, March, and May futures in Buenos Aires. Daily closing prices.

in the second half of the month by a sharp increase, important causes of which were an extremely bullish Argentine official crop estimate, and, in the United States, the posting at Chicago of bids for wheat by the Farmers' National Grain Corporation. From early January until the middle of March the tendency was distinctly downward, though not without minor interruptions. From the middle of March until the first week of April prices tended to rise. These may be described as the four main phases of the December–March price movement in the four great futures markets.¹

The decline recorded in January–March has no close counterpart in recent years, though the fact that prices moved downward rather sharply but more or less erratically in some part of January–March 1920, 1921, 1925, and 1926 suggests that a sharp decline of prices in the mid-winter months is by no means an unprecedented occurrence. The closest post-war analogy to the January–March price decline of 1930 is to be found in the movement of 1926.² This movement began at about the same

date, but ended before the middle of March; it was a decline from a very high to a high level, whereas the decline of 1930 was from a moderately low to a distinctly low level. At least one factor was much the same in both years—the failure of European import demand to develop; but in other respects the causes were different. In 1926, futures prices declined most at Buenos Aires and least at Winnipeg, whereas in 1930 the decline was largest at Liverpool and Winnipeg and smallest at Chicago.

As Chart 4 shows, the January–March decline of 1930, as shown by May futures prices, differed in its extent between the four markets. From the high point (December 31 or January 2) to the low point (March 14 or 15), the Liverpool and Winnipeg May futures closing prices declined a little more than 44 cents per bushel; the Buenos Aires March future 34.1 cents; and the Chicago May future 30.2 cents. The fact that Buenos Aires prices declined less than Liverpool prices probably reflects in some part a decline in ocean freight rates³ and a transition from a crop year of abundance to one of relative scarcity; it occurred in spite of depreciation of the Argentine currency. Within Argentina, prices were notably firm.⁴ If we consider the weekly average cash prices shown in Chart 3 (p. 308), much the same facts appear: the decline of prices was larger in the United Kingdom and Canada (in terms of United States dollars) than it was in Ar-

¹ It is perhaps equally appropriate to describe the course of prices during December–March simply as a decline, with some interruptions, extending from early December until mid-March; or as merely a portion of a longer interrupted decline beginning late in July 1929. Since changes in crop prospects appear to have exerted considerable influence on prices in December, but played a distinctly minor part in the price decline of January–March, we have chosen to divide the December–March movement of prices into the four phases mentioned.

² See *WHEAT STUDIES*, December 1926, III, chart on p. 112.

³ Freight rates on wheat, La Plata up-river to the United Kingdom (Broomhall's data) were 10.8 cents per bushel on January 8, and 7.5 cents per bushel on March 19. Throughout the crop year 1929–30 ocean freight rates have run unusually low, and have tended to decline. Many vessels have been withdrawn from active operations in order to curtail losses to owners.

⁴ In terms of United States dollars, the decline of the Buenos Aires March future between December 31 and March 15 was 34.1 cents, or around 26.5 per cent. But in terms of Argentine currency, the decline of 21 paper pesos per metric ton amounted to 18.4 per cent.

gentina or in the United States. On the British wheat import market,¹ between December 31 and March 18, considerably larger declines appeared in the c.i.f. prices of Canadian than of Argentine, Australian, or American wheats. If we consider weekly prices of domestic wheats in Italy, France, Germany, and England, it seems clear that domestic wheat prices in these countries declined less than the British c.i.f. prices of wheat from any source, less than cash prices in the three great exporting countries, and less than futures prices on the four leading markets.² Certain minor features of the price situation deserve brief comment. In Argentina the prices of wheat weighing 80 kilograms per hectoliter declined less than wheat weighing 78 kilograms, a reflection of the poorer quality of the new crop as compared with the old. At Winnipeg, the prices of wheat grading Nos. 5 and 6 Northern declined less than the prices of wheat grading Nos. 1 and 2, presumably a reflection of relatively stronger export demand for the lower grades, and decreasing supplies of these lower grades in relation to supplies of the higher grades.

At their low point on March 14 or 15, closing prices of May futures had reached one of the lowest points touched in March in the past decade. The Liverpool May futures price was quite the lowest price recorded in any March since the war, and so with Buenos Aires. In Chicago and Winnipeg, prices were lower in March 1924. As for other months since August 1922 (to judge from weekly average cash prices), British parcels prices in mid-March 1930 stood lower than at any other time except the end of May 1929; weighted average prices in the United States stood lower than at any other time except the end of May

1929 and August 1923. Buenos Aires prices of wheat weighing 78 kilograms per hectoliter stood lower than they were at any time since August 1924 except for about six weeks in May-June 1929; comparisons are not available for weeks prior to August 1924. Winnipeg weighted average prices, however, were not as low as in September-October 1922, September-May 1923-24, and October-January and May 1928-29.

Taken without qualification, the behavior of prices suggests that weakness during January-March 1930 was more prominent in Great Britain and in Canada than elsewhere. But such an inference is hardly to be drawn in the absence of rather definite knowledge of the seasonal movements of prices in different countries. There is evidence that Canadian and American prices during December-March ordinarily tend to rise somewhat in relation to British import prices, whereas Argentine and Australian tend to decline.³ Moreover, the prices of domestic wheats in the four great European importing countries seem to tend to rise, in relation to British import prices, more rapidly than those of Canada and the United States, though the facts are even less clear. If seasonal price movements such as these are in fact normal occurrences, then the apparent weakness of prices in Canada and the firmness in Argentina are the more remarkable, whereas the apparent firmness of domestic wheat prices in Europe and of prices in the United States are in some part to be explained by this alone.

Another approach is possible to the problem of ascertaining where the weakness of prices originated, or at least where it was first registered. Chart 5 (p. 312) shows the course of the Liverpool May future during January-April 1930, in contrast (1) with the cumulated daily price changes at Liverpool between the opening and closing of the market; (2) with similar opening-to-closing changes at Winnipeg, and (3) with similar changes at Chicago.⁴ Except for about one hour of trading each day, the Liverpool market is active at a time when Winnipeg and Chicago are closed. Hence if for a period of a week or two the opening-to-closing price changes at Liverpool are successively in a downward direction, while opening-to-closing changes during the same period are stable at Winnipeg and Chicago,

¹ See Appendix Table VIII for Liverpool c.i.f. prices.

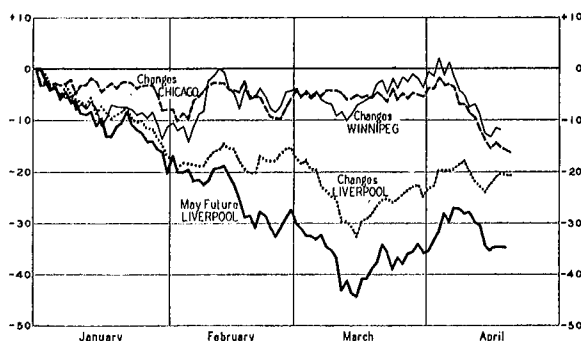
² See Appendix Table IX, which shows monthly average prices of domestic wheat in Europe.

³ This statement is based upon a calculation of the average spread between monthly average cash prices in the designated exporting countries, August 1922 to July 1929, and monthly average prices of British parcels; and upon examination of spreads between May futures prices in Liverpool and in Chicago, Winnipeg, and Buenos Aires (March futures) during January-March 1922-29. The Buenos Aires-Liverpool futures spread does not lend positive confirmation to the inference to be drawn from the spreads between cash prices.

⁴ This approach to the study of movements in futures prices was originated by Holbrook Working.

and at the same time futures prices decline to much the same extent in all three markets, one may reasonably infer that, of the three, Liverpool was the market in which weakness was first registered. Prices would have declined in Liverpool for the most part while trading operations were active, but in Winnipeg and Chicago while the markets were for the most part closed. Liverpool would have been the active price-making market; Winnipeg and Chicago would have been the passive markets.

CHART 5.—CUMULATED OPENING-TO-CLOSING CHANGES IN MAY WHEAT FUTURES PRICES IN LIVERPOOL, WINNIPEG, AND CHICAGO, COMPARED WITH THE COURSE OF LIVERPOOL MAY FUTURE (CLOSING) PRICES, JANUARY-APRIL 1930*
(Cents per bushel)



* Derived from data in *Daily Trade Bulletin*, Chicago. The closing price of the Liverpool May future on January 2 (\$1.481) was selected as the zero point from which to plot the cumulated changes in each of the three markets.

Chart 5 may reasonably be interpreted to suggest that the weakness first registered in Liverpool accounted for most of the general decline in futures prices during January-March. The cumulated opening-to-closing change at Liverpool was 32 cents downward from January 2 to March 15, whereas the May future declined only 12 cents more than this. The opening-to-closing change at Chicago was almost negligible, though this market showed active characteristics around the first week of February and again in the last week. The Winnipeg market was noticeably active in depressing prices throughout January, when Liverpool was also; but it was not so active as Liverpool. The Winnipeg market was strikingly active in sustaining prices for about a week in the first half of February, and was again active in depressing prices (though not so much so as Liverpool) in the first half of

March. Liverpool seems to have been the market where the greater part of the January-March price decline was first registered, but a significant part of it was first registered at Winnipeg. Apparently one must look principally to Liverpool for a general explanation of the decline of prices.

The very fact that Liverpool was more active in depressing prices than the export markets¹ suggests that the decline was closely connected with the situation in Europe. News of the wheat position filters into Liverpool from all corners of the earth, and so it does into Winnipeg and Chicago also; but traders at Liverpool are almost certainly better, more fully, and more promptly informed of the position in Europe than are traders in North America. Largely for this reason, we feel impelled to ascribe a good deal of importance to developments in Europe as a cause of the January-March decline of prices.

Evidence seems to have accumulated during these weeks tending to indicate that European countries taken as a group needed to import even less wheat than seemed probable earlier in the season. The exceptionally mild winter, a factor that no one could anticipate with certainty, tended to decrease the utilization of wheat for food and feed and so to reduce import requirements. The business depression acted in the same direction. The weak feed grain and rye positions showed no definite tendency to improve, though they do not seem clearly to have become weaker. There was a succession of advices from various countries setting forth the new governmental regulations tending to curtail imports. The impression that Europe had harvested huge crops of grain and potatoes in 1929 was strengthened by official and unofficial reports. The mild winter gave grounds for supposing that the winterkilling of wheat sown in the fall would prove to be relatively small. The earliest new crop of the Northern Hemisphere, that of India, progressed favorably. Unexpected Russian offers of wheat appeared on the import markets—small in amount, it is true, but possibly inducing a disproportionate effect because of the inevitable prevailing uncer-

¹ It may reasonably be assumed that the Buenos Aires market was relatively passive, or perhaps active in sustaining prices, though we have not calculated the opening-to-closing changes in Buenos Aires.

tainty as to the quantities that might possibly be shipped. France began to export in increased volume, with aid of subsidy. British importers had stocked up heavily in the first five months of the crop year, to some degree inadvertently because cargoes of Argentine wheat consigned unsold could not be disposed of on the Continent, and passed to British ports; and port stocks in the United Kingdom stood at a high level. Of great weight in Europe was the enormous quantity of wheat known to exist in the visible supplies of Canada and the United States. Importers could hardly fail to suppose that the holders of this wheat must become increasingly uneasy, and more willing to sell, as the time of the next harvest drew slowly nearer—at least unless prospects for the new crop took an unfavorable turn; and there were rumors of dissension regarding selling policies among Pool officials. In Europe even more than in the United States, the general level of wholesale prices declined. There was, in short, an array of bearish factors, the cumulative effect of which could hardly fail to exert a profound influence upon market sentiment, especially professional sentiment in Europe. And against this array little news with a bullish cast could be set. The world wheat crop of 1929 continued to stand out as a relatively small one; and the Federal Farm Board in the United States and the Pool in Canada (also many speculators) continued to affirm their belief in higher prices and to act upon it; the prices of industrial stocks in the United States moved upward, in contrast with the break that appears to have contributed to declining wheat prices in October–November 1929. In general, market sentiment almost everywhere seems to have become pessimistic in January–March 1930; during the same months of 1929, a markedly optimistic spirit was observable.

There seems to be reason to suppose that the organizations receiving loans from the Federal Farm Board were not without effect. A slight bulge in futures prices after the middle of January may have occurred partly because the Farmers' National Grain Corporation raised its bid price for hard wheat at Chicago, though the journals attributed a good deal of influence to a temporary revival of European demand. A

bulge in prices in the second week of February was attributed to rumors of and final announcement of the organization of the Wheat Stabilization Corporation in the United States; and another bulge late in February was attributed to the operations of the Corporation on the Chicago futures market. The fact that the Chicago May future declined less than those of Winnipeg and Liverpool reflects the relative firmness at Chicago. This firmness, in so far as it did not represent a normal seasonal movement of prices, was presumably due chiefly to the operations of organizations receiving loans from the Federal Farm Board.

During January, the Winnipeg market as well as the Liverpool market was active in depressing prices. The accumulation of bearish information regarding import requirements seems finally to have affected sentiment in Canada as well as in Great Britain, though Winnipeg showed greater resistance than Liverpool. For a few days in early February, the Winnipeg and Chicago markets were more active in sustaining prices than was Liverpool. This was a period when the prospective and actual operations of the organizations receiving loans from the Farm Board attracted much attention; and on February 5 provincial legislatures in Manitoba, Saskatchewan, and Alberta passed legislation guaranteeing in effect that the banks which had loaned money to the Pool need not press for reduction or liquidation even though prices continued to decline, further depreciating the value of the security on which loans were based. Again at the end of February, the activities of the Stabilization Corporation seem to have been the outstanding strengthening factor in the futures markets. It is noteworthy that the general decline of prices from January to mid-March was first registered in North American markets only in the period February 11–25.

We have given rather extended consideration to the decline of wheat prices in January–March partly because, in our survey issued in January 1930 and based upon data available in late December 1929, we failed to perceive an indication that so extensive and long-continued a decline was reasonably in prospect in so far as we were then able to evaluate the numerous factors bearing upon wheat prices. As the *Economist*

of March 8, 1930, p. 514, pointed out, our view was that "... wheat prices would be maintained in the New Year at about \$1.38 a bushel (British parcels), an expectation that was certainly not realized." Our principal error now appears to have lain in failure adequately to envisage the ability of European importers to curtail their purchases, and to appraise the influence of Russian exports. At the date of writing the appearance and effects of the exceptionally mild winter and the business depression in Europe, some of the governmental measures to reduce importations, and other price-influencing factors as well were not as clear to us as they have become after the event. Nor are they precisely clear at present, for we know of no device by which precisely appropriate weights can be given to the various interacting factors that now seem to us to have caused the decline, and we know of no way by which it is possible to demonstrate to the satisfaction of all that our list of these factors is complete.

After the middle of March, as Chart 4 (p. 310) shows, wheat prices began to move upward until about April 7. At this time there was pronounced price-raising activity at Liverpool, and some at Winnipeg; Chicago futures, however, showed no tendency either to decline or to advance between the opening and the close on successive days except for a few days in early April (see Chart 5, p. 312). We infer that, prices having reached a very low point, importers were encouraged to purchase more actively, the more so because drought prevailed in the American Southwest. The prospects for new crops again began to assume major importance. On the decline subsequent to April 7, continuing to the end of the month, more favorable North American crop news seems to have played the dominant rôle.

In a preceding paragraph it was pointed out that the spread between Buenos Aires and Liverpool futures prices, expressed in United States dollars as in Chart 4 (p. 310), tended to narrow during January-March.¹ There seems to be no reason to suppose,

¹ See above, p. 310.

² The Chicago May future sold for higher prices than the Liverpool May in March 1926, when domestic supplies were scanty following the short crop of 1925. Only on one occasion, in late April 1928, has the Chicago future closing price stood above the Liverpool price in other months than March and in other years than 1925-26.

however, that sales of Argentine wheat to importers tended to be notably curtailed by the narrowing of this spread; so far as one can judge from shipment statistics and trade advices, Argentina remained on an export basis, even though the spread between the Liverpool and Buenos Aires May futures, in terms of American dollars, had become in March the smallest of any since 1922 except for 1925. The Winnipeg-Liverpool spread was not greatly altered in the period under review. It remained unusually narrow as compared with any during the same period since 1922; here, even with allowance for the low level of ocean freight rates, one may infer that the situation was not favorable to promote the export of Canadian wheat. But the inference must be qualified by the fact that recent years provide no close analogy with 1929-30, when the Canadian crop was of extraordinarily good quality and was at the same time a small one. Perhaps the situation became somewhat more favorable toward exportation in the course of December-March; for in most recent years the Winnipeg-Liverpool spread has narrowed in these months, whereas it widened this year, and in addition shipment costs (ocean freight rates) declined. By the last week of March, the Winnipeg-Liverpool spread was not much narrower than it had been at this time in four of the past eight years, and was wider than in 1929. The Chicago-Liverpool spread remained about the same throughout January and December, though it tended to narrow slightly. In these months it was rather narrow as compared with identical months in several of the preceding eight years, but wider than in 1923-24 and 1925-26, and in some parts of January 1927 and 1929. In February, however, the spread began to narrow, and in the middle of March the Chicago May future closed at higher prices than futures in either Liverpool, Winnipeg, or Buenos Aires, an extraordinary occurrence in view of the existing stocks. A tendency for the Chicago-Liverpool spread to narrow in December-March is not uncommon. But never before in the preceding eight years had the May future at Chicago stood above the Liverpool May future in March in a year when domestic wheat supplies were even moderately abundant.² The narrowing of the

spread inevitably tended to render exportation still more difficult, if only because the Winnipeg-Liverpool spread was widening. Apparently the firmness of Chicago prices in relation to prices at Winnipeg and Liverpool was due largely to the operations of the Farmers' National Grain Corporation and the Stabilization Corporation.

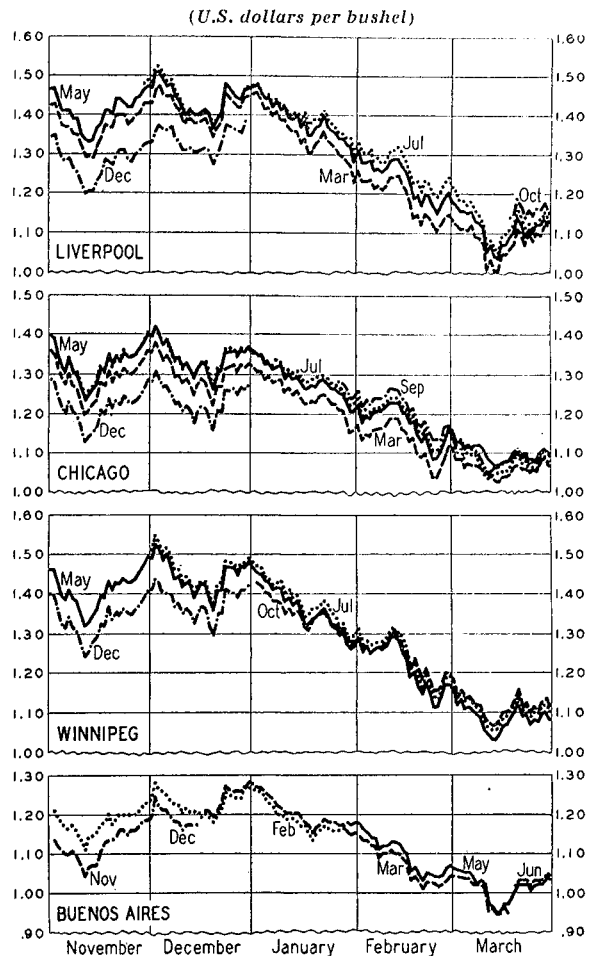
RELATIONSHIPS OF NEAR AND DISTANT FUTURES

Largely for purpose of amplifying the record of price movements, we present Chart 6, which shows the relationships of near and distant futures in the four principal markets during November-March 1929-30. In Liverpool, the more distant futures have consistently stood higher than the near; such was the situation in the same months of 1928-29, and probably the heavy visible supplies account for this unusual relationship. At Winnipeg the July future ran consistently above the May, probably because heavy stocks existed; but the October, running below the May and July in early January, stood above them after the middle of February. This reversal of relationship possibly represents a concensus among traders that, with exports continuing small, it might be necessary to carry appreciable quantities of wheat from July to October; on the other hand, the reversal possibly represents a growing opinion that the crop of 1930 might prove to be a short one, justifying higher prices. In Chicago, the December future remained consistently below the March, the March below the May. The July future stood close to, mostly above, the May until early March—a rather unusual relationship, but one readily explainable by the existence of huge stocks. In March, this relationship was reversed, it is generally reasoned because the Stabilization Corporation supported the May but not the July or September. That this relationship prevailed in March seems properly attributable to circumstances other than the stocks position or new-crop developments, which in themselves would probably have tended to increase the premium of the July and September futures over the May.

In our judgment the recorded relationships of Chicago futures prices during March, and of Chicago prices to prices in other markets, especially the former, con-

stitute the best available concrete evidence that the activities of the Stabilization Corporation exerted an influence on prices. One

CHART 6.—DAILY CLOSING PRICES OF PRINCIPAL WHEAT FUTURES IN FOUR LEADING MARKETS, NOVEMBER-MARCH, 1929-30*



* Data from *Daily Trade Bulletin*, Chicago.

might reasonably argue that in the absence of the Farm Board, the Chicago-Liverpool spread might have tended to narrow as it did, merely because such a narrowing has often occurred before; and, though we believe this view to be untenable, it would be difficult to disprove the contention by pointing out that in other years American traders must have had more bullish incentives based largely upon developments in the stocks position or in the new-crop outlook. But at least it is clear that on the few other occasions in recent years when Chicago futures prices climbed above Liverpool prices,

reasons that appear adequate can be found in the domestic stocks or crop situation. And it seems almost impossible to believe that, given the actual level of visible supplies and the actual crop news in the United States, the Chicago July future could have fallen below the May in the absence of the operations of the Stabilization Corporation.

One can argue more conclusively that the operations of the Corporation affected American prices than one can argue that the Canadian Pool affected Canadian prices; but it is far more difficult to show conclusively that either organization exerted an influence upon prices in Liverpool, Buenos Aires, or elsewhere. Perhaps, in the absence of the Farm Board and of the

Canadian Pool, prices would have sunk to much lower levels than in fact they did; perhaps the whole course of prices thus far in the crop year would have been different. On the other hand, developments might have been very much the same, except as regards futures price relationships in the United States. Our earlier analysis presumably suffices to show that we are at present inclined to regard the price-making factors that existed before the Farm Board or the Pool was organized as still in operation, and still dominant. Nevertheless these organizations have themselves become price-making factors to be reckoned with, among a multitude of others, in explaining the movements of wheat prices.¹

V. PROSPECTS FOR 1930 CROPS

Wheat traders in both importing and exporting countries are now centering attention upon the prospects for the 1930 crops; and the course of prices during the ensuing few months will depend in no small measure upon crop developments. The outlook in regard to the size of this year's crops is far from clear at this time, when the sowings for the winter-wheat crops of the Southern Hemisphere and for the spring-wheat crops of the Northern Hemisphere are not yet completed. Judging by early

advices, however, it appears probable that the acreage planted to winter wheat in the Southern Hemisphere is continuing its upward trend. Prominent officials in Australia have urged farmers to increase the wheat area by a million acres, and recent reports indicate that the farmers are responding to some extent. In Argentina, seeding conditions have been satisfactory, but in parts of Australia the land has been too dry. While the development of Southern Hemisphere crops will depend almost wholly

¹ A brief survey of the activities of the Federal Farm Board, and the organizations to which it loaned money, with regard to wheat is appropriate at this point. We do not attempt to summarize the published opinions or appeals to farmers made by Board members; perhaps the dates listed are not precisely accurate; and the figures regarding wheat holdings are not official. On October 26, 1929, a schedule was issued listing "loan prices" in various markets; the Board stated that it would loan funds to properly qualified co-operative associations, which in turn might make advances to members on the announced price bases, with differentials for quality and transport costs. A Farmers' National Grain Corporation was incorporated on October 29, 1929. On November 19 it was stated that loans up to \$3,140,000 had been made in connection with wheat and other grains. A Wheat Advisory Committee was appointed on February 1, 1930, and met on February 5. A Stabilization Corporation was incorporated on February 10, and approved by the Board on February 11. A chronological official record is not available to us of the time, place, and magnitude of the dealings in wheat (cash and futures) conducted by the Farmers' National Grain Corporation and the Stabilization Corporation, the dominant operating agencies. The most active purchasing of wheat by either of these organizations seems to have begun directly after the formation of the Stabilization Corporation on February 11. Apparently purchasing was pursued with particular energy for about three weeks after February 24. Ex-

tensive purchases of the May future seem to have begun on February 25. On this same date it was announced that cash wheat would be purchased only from members of co-operative associations; but on March 1 the buying of country-run cash wheat on the established loan basis was discontinued, though further loans would be made to the Farmers' National Grain Corporation on this basis. On February 28, Chairman Legge was reported to have announced that total holdings of wheat, including futures, were around 25 million bushels; by March 6 the amount was 25 million excluding futures. On March 11 Chairman Legge anticipated that holdings might reach 100 million bushels at the end of the season. On the same date it was stated in the press that the Stabilization Corporation had bought wheat at ports. On March 20 it was stated in the press that the corporations would cease to buy, the situation having improved. On March 24, the loan basis price for No. 1 Northern Spring Wheat at Minneapolis was reduced. Early in April the Stabilization Corporation made public a plan involving co-operation with millers in storing wheat and in facilitating flour exports. On April 24, Chairman Legge is reported by the press to have stated that the wheat holdings of the Stabilization Corporation amounted to approximately 50 million bushels, of which about 31 million was cash wheat, and about 19 million was wheat futures. On April 22 it was announced that loans on the established bases would be discontinued after April 30.

upon the weather in distant months, it appears statistically improbable that the Southern Hemisphere will harvest a crop in 1930 so small as the short crop of 1929.

In the Northern Hemisphere winter-wheat prospects appear to be average or above at the date of writing; there seems to be no reason to anticipate that an unusually small crop will be harvested from an acreage of approximately normal size, if ordinarily good weather conditions prevail. Spring-wheat acreage in North America promises to be a little smaller than last year, but seeding has taken place rather earlier than usual in some regions. Until about the middle of April the dry soil in the Northwestern states of the United States, and in the Prairie Provinces of Canada, caused anxiety; but recent rains improved the outlook.

It thus seems probable, with ordinary weather and rainfall in the growing season, that the total winter and spring wheat crops of 1930 (excluding Russia, China, and Asia Minor) will be considerably larger than the world wheat production of last year, and probably not far from normal, considering trend.

INDIA AND NORTH AFRICA

The Indian wheat crop of 1930 at present promises to be one of the largest in the past decade, the first official estimate of production indicating a crop of 368 million bushels. Compared with the final estimates for the years 1920-29, this figure has been exceeded only in 1920 and 1923. Moreover, the final estimates of production in India are usually somewhat higher than the April estimates. A good yield per acre rather than a large acreage seemingly accounts for the size of the 1930 crop; the second estimate of the area sown to wheat for this year's crop, 29.9 million acres, is below the average of the corresponding estimates at least of the past five years.

Considerably less information is available as to the prospective size of the crops of Algeria, Morocco, and Tunis. It appears that there has been a slight increase in the total acreage sown to wheat in these countries of northern Africa, the increase in acreage in Algeria not being completely offset by the decrease in Morocco. The wheat has apparently developed under fair

conditions during recent months. Complaints of dry weather have come at times from each of the countries, but later reports generally have indicated that rains had brought relief. Some of the wheat in Morocco has been destroyed by locusts; the extent of the damage, however, is not known. In general it may be said that the present outlook is for a crop of average size or somewhat below.

EUROPE

The area sown to winter wheat in European countries in 1930 is probably not far from normal, trend considered. Data published by the United States Department of Agriculture suggest for the area planted to wheat in eight countries of Europe combined—France, Italy, Spain, Roumania, Poland, Bulgaria, Lithuania, and Finland—an acreage a trifle smaller than that planted last year. The figures published by the Department show a decline of Italian acreage in 1930 as compared with 1929, but some other advices indicate an increase. A number of important producing countries are not included in the above list. Private advices suggest that in Germany, Jugo-Slavia, and Portugal larger areas were sown to winter wheat this year than last, that in Hungary, Austria, and perhaps the United Kingdom the wheat sowings were somewhat reduced, and that the area planted to winter wheat in Russia was about the same as last year. The data on acreage are not sufficiently complete at present, however, to give a precise notion of the probable total acreage sown in Europe. In so far as the available data warrant any conclusion, there seems to be reason to believe that the 1930 wheat acreage of Europe is neither strikingly larger nor smaller than the acreage planted last year, but that it may be slightly larger.

In regard to the development of the wheat crops of Europe the factor of outstanding importance is perhaps the small amount of winterkilling in evidence this year. The winter in Europe was unusually mild, and during the few severely cold spells which occurred the snow cover in most parts seems to have been ample. In no country does the winterkilling appear to have been more than normal, and in many countries it has been reported as below

normal. Roumanian crops suffered from lack of moisture during February and March, but April rains apparently brought considerable relief. Wheat in Jugo-Slavia, Hungary, and Bulgaria seems to have progressed favorably; and there is at present little reason for believing that the Danubian countries will harvest a crop below normal in 1930. Among the chief European importing countries, some complaints of wheat deterioration on account of excessive moisture have emanated from France and England. Some damage in the south-central part of France seemingly has resulted from floods, and weed growth seems to have been excessive; but, on the whole, it now appears that although the French crop of 1930 will probably prove smaller than the huge one of 1929, the outturn may still be of approximately average size or above. Excessive rainfall may have affected adversely the crops of several other European countries, notably Italy and Spain, but complaints have not been numerous or striking. Crop prospects appear to be favorable in central and northwestern Europe generally. Thus the evidence now available, in regard to acreage, abandonment, and general crop condition, suggests that the outlook is for a European crop of normal size or larger; but the present outlook may be altered at any time.

UNITED STATES WINTER WHEAT

The preliminary official estimate of December 20 of the area sown to winter wheat in the United States was 43.7 million acres. This indicates a planted area approximately equal to the average of the past ten years, but larger than the areas sown for the crops of 1924-29 with the exception of 1928. The increase in sowings this year as compared with last was fairly well distributed over the states outside of the Pacific Coast region. In the Pacific Coast states, and in eight other states, seven of which are in the soft winter wheat belt, the planted acreage for the 1930 crop was estimated as smaller than the acreage sown for the 1929 crop. In view of the fact that the 1928 crop was especially short in the soft red winter-wheat states, and that the reduction in acreage planted for the crop of last year was most noticeable in that region, it appears especially significant that over half

of the states having smaller sowings this year than last were of the same group.

Definitive estimates of abandonment are not yet available. But it appears almost certain that the greatest abandonment will be in the very regions in which the planted acreage was smaller—in the Pacific Northwest, and in the soft winter-wheat states, especially Ohio, Indiana, and Illinois. Murray's estimate of total abandonment in the United States, issued on April 2, gave a figure of 8.6 per cent, whereas the Department of Agriculture, in its report issued April 9, suggested a tentative figure of 11.8 per cent. Since the percentage of the winter-wheat acreage abandoned last year was officially placed at only 6.2 per cent, there can be little doubt that abandonment will be larger in 1930 than it was in 1929. As compared with other years, the indications are that abandonment will be neither unusually large nor unusually small, and indeed close to the ten-year average.

In early December the winter-wheat crop was more promising than usual. Condition was officially estimated as of December 1 at 86.0 per cent of normal, as compared with 84.4 per cent last year and a 1918-27 average condition of 84.6 per cent. Condition was below average in only one wheat district, the Pacific Northwest, where lack of normal precipitation during the fall months was unfavorable. The official estimate of condition of all United States winter wheat as of April 1 was 77.4 per cent of normal, and four private estimates for approximately the same date averaged 81.4 per cent; whereas the April 1 average condition during the years 1919-28 was 80.9 per cent, and the condition as of April 1, 1929, was 82.7 per cent. Thus there was an unusually large change in the condition of the crop between December and April this season. During that interval there was deterioration in the Ohio Valley and in the Southwest, but improvement in the Pacific Northwest.

The decline in the condition of winter wheat was mainly due to adverse weather conditions in certain states of the soft red and hard red winter-wheat belts, and was not offset by beneficial rains in the Pacific Northwest. Here the first three weeks of December, and early January, brought general rains and some snow. In the Ohio Val-

ley, however, alternate thawing and freezing, followed by excessive moisture and flooding, caused some damage. Cold weather prevailed practically throughout the country in the latter half of January; but the snow cover was on the whole ample. In some parts of western Kansas, Oklahoma, Texas, Missouri, and Washington, however, there were complaints of damage. During February the weather was unusually warm and dry in the major wheat-producing areas, though rain in the Pacific Northwest during the third week of February was beneficial to the wheat there. March was also an unusually dry month in the principal wheat states, the precipitation being so light in the Southwest that Kansas was officially reported to have had the driest March in forty-three years, and parts of Missouri were reported to have had the driest February and March ever known. Unlike February, however, March was not abnormally warm. A cold wave during the first week of March apparently caused no serious damage; but the alternate freezing and thawing which continued in the Ohio Valley during most of March may have caused further crop deterioration. Complaints of Hessian fly infestation emanated from parts of Kansas during March; more recent advices contained fewer complaints, and suggest that damage from this source may prove small.

In the first part of April the condition of winter wheat in the Southwest deteriorated further with lack of rainfall and strong winds. Deterioration might have been worse except for generally abundant supplies of subsoil moisture. Some part of the difference between the private and government April estimates of general crop condition is probably accounted for by the events of late March and early April; for the official estimate is generally supposed to have taken account of a few days more of unfavorable weather than did the private estimates. Approximately three days after the official crop report was issued, fairly good rains began to fall in Kansas, Oklahoma, and other states of the Southwest. By April 30, practically the whole of the United States winter-wheat belt had received beneficial rains, southwestern Oklahoma having suffered from drought until the very last days of the month.

NORTH AMERICAN SPRING WHEAT

Not much is known at present about the prospects for the North American spring-wheat crop of 1930; but certain estimates of farmers' intentions to plant, and certain facts concerning the condition of the soil, are available.

Farmers of the United States reported their intentions on March 1 to sow a total of approximately 20,200 thousand acres to spring wheat, an area about 799 thousand acres smaller than that harvested in 1929, but over 100 thousand acres larger than the average spring-wheat acreage harvested during 1924-28. As compared with last year the greatest reduction was planned for the acreage sown to durum, a small increase in acreage being planned for spring wheat other than durum. The total reduction stated by farmers as intended for the area sown to spring wheat falls considerably short of that urged by the Federal Farm Board. There appears to have been an unusual replanting of winter-wheat acreage with spring wheat in the Pacific Northwest. Seeding throughout the United States seems to have begun a little early and progressed favorably, but is not yet completed. Seeding conditions are apparently average or better in most regions, with improvement following the April rains.

If the extent of the area sown to spring wheat in the United States is uncertain, the situation in Canada is still more so. On April 2, Murray estimated a reduction of 5.1 per cent in the Prairie Provinces as compared with 1929. After this estimate was issued, however, the rains that fell in April apparently altered the outlook for acreage; and some recent advices suggest that sowings may about equal those of 1929. In spite of the beneficial April rains, however, the soil conditions in the Prairie Provinces are thought to be less favorable than usual. The warm dry summer of 1929 caused the summer-fallowed land to enter the fall in an extraordinarily dry condition. The September-November precipitation, which the United States Department of Agriculture regards as a very important factor in determining yield per acre in Canada, was below normal in 1929, although larger than in 1928. The following figures show the inches of precipitation in the two largest wheat-producing provinces;

Saskatchewan and Alberta, for September–November 1928 and 1929, and the average precipitation¹ for those months over a period of years:

	Saskatchewan	Alberta
24-year average		2.76
25-year average	3.19	
1928	1.05	.76
1929	2.90	2.10

April temperature and April precipitation have likewise been found to be important factors in determining the size of the Cana-

dian crop. So far this year the April temperature has been fairly favorable for seeding, but the April rainfall, though favorable, has been not strikingly heavy. So far as we are able to interpret the available data, it appears that the size of the Canadian crop of 1930 will depend to an unusual degree upon May–July rainfall, and, with normal rainfall, the production will be larger in 1930 than in 1929 but somewhat smaller than average unless weather conditions in May–July are extraordinarily favorable.

VI. THE OUTLOOK FOR TRADE, CARRYOVERS, AND PRICES

Any formulation of the present outlook for trade and prices in April–July and for carryovers at the end of the crop year necessarily depends in considerable part upon one's assumptions as to the probable course of new-crop developments in the Northern Hemisphere. Almost certainly crop prospects will change from week to week, with accompanying effects upon prices, trade, and carryovers. Yet since an assumption must be made, for purposes of discussion we postulate on the whole a season of ordinary weather, and regard ordinary weather as promising winter-wheat crops in 1930 of average size or above in the United States and Europe, a spring-wheat crop of average size in the United States, and a spring-wheat crop of average size or below in Canada.

EXPORTS IN APRIL–JULY 1930

The total movement of wheat in international trade in April–July, as measured by Broomhall's shipments or by net exports, has proved to be smaller in volume than shipments or net exports in December–March in each of the eight years 1921–22 to 1928–29. Since the seasonal movement shows this tendency toward consistency, one is justified in assuming that the volume of trade in April–July 1930 will prove smaller than it was in December–March 1929–30, unless adequate reasons can be adduced to show that the usual seasonal movement is likely to be reversed.

Such reasons are to be found. In the first

place, the December–March period usually witnesses an increase in stocks of wheat afloat to Europe and in ports of the United Kingdom, whereas the period April–July witnesses a decline. In 1929–30, however, these stocks declined a little in December–March, and stood at so low a level on April 1, 1930, that a reduction in April–July 1930 as large as the average seems unlikely to be made. Hence, whereas the small increase of these stocks in December–March permitted a reduction in the amount of wheat put afloat in those months, the small prospective decline of these stocks in April–July may well require an increase in the amount put afloat in these months.

In the second place, there seems to be little reason to suppose that European importers will be able to curtail their purchases as sharply in April–July as they did in December–March. Such evidence as we have seen does not suggest that either the feed grain situation or the business depression in Europe is likely to become worse; and, with improvement or no further worsening of these influences, importers may be encouraged to purchase. And it is practically certain that stocks of import wheat in Europe were a good deal smaller on April 1 than they were four months before, so that importers are in a less favorable position. It seems improbable, however, that total stocks in Europe were below average on April 1; therefore, crop calamity aside, panicky buying in April–July is hardly in prospect. We believe that importing countries are in a position to resist a marked advance of prices in export mar-

¹ *Foreign News on Wheat*, January 1930, p. 10.

kets, but not in as favorable a position as they occupied four months ago. Of the several European importing countries, the United Kingdom especially seems likely to import appreciably more wheat and flour in April-July than in December-March. The monthly imports in December-March were well below average; and over the past eight years at least, a period of several months characterized by small imports has always been followed by a period of several months characterized by distinctly larger imports.

In the third place, it seems fairly clear that the general relationship between prices in exporting and importing countries has become somewhat more favorable to promote exports than it was early in December. To demonstrate this is difficult as regards the increasing spreads during December-March between the prices of domestic wheats in Europe and wheat in exporting countries, for it is possible that the widening spread is merely a seasonal change, which in other years has not tended to cause April-July exports to be larger than December-March exports. When one compares futures prices in Liverpool, Winnipeg, Chicago, and Buenos Aires, however, it seems certain that the Winnipeg-Liverpool spread has altered in the direction of favoring a freer flow of wheat to export. If one assumes that Argentina and Australia have exported and may be expected to export wheat about as usual, available supplies considered, then wheat seems capable of moving freely (on the price basis) from three of the four major exporting countries during April-July 1930, while this was the position with regard only to two countries in December-March. At no time since December 1 has the United States seemed to be in a position to export freely, available supplies considered. Nevertheless the spread seems more likely to widen than to narrow during April-July—at least if the new crop shows normal progress—merely because it is still narrow, though a continued low general level of wheat prices might act in the contrary direction, as might the Stabilization Corporation.

All told, then, the available evidence suggests that the movement of wheat to export in April-July may exceed in volume the movement of December-March, and that

one feature of the average annual seasonal movement will prove to be different in 1929-30 from what it was in any of the preceding eight years.

PROBABLE NET EXPORTS IN 1929-30

Developments in the international trade during December-March, in which the very small total movement was a striking feature, have induced most or all commentators on the world wheat situation to reduce and to modify their early forecasts of probable shipments or net exports in the crop year 1929-30. For example, Broomhall's estimate of total August-July shipments as of December 20, 1929, 696 million bushels, stood at 636 million on April 2; and the United States Department of Agriculture's estimate of total July-June net exports as of December 20, 750-839 million bushels, was reduced to 650-714 million bushels as of March 25. Broomhall reduced his earlier estimate by 60 million bushels, the Department (taking the average of the stated ranges) by about 112 million. These estimates appear in Table 9, in comparison

TABLE 9.—FORECASTS OF PROBABLE NET EXPORTS BY EXPORTING COUNTRIES IN 1929-30*

(Million bushels)

Exporting area	Broomhall		U.S.D.A.		F.R.I.	
	Dec. 20	Apr. 2	Dec. 20	Mar. 25	Dec. 28	May 1
United States..	176	156	230-250	165-175	180	160
Canada	232	208	220-240	200-220	210	205
Argentina	176	144	195-210	180-195	170	150
Australia	56	56	65-75	65-75	70	70
Russia .....	...	...	0	"	...	5
Danube basin ^b ..	40	48	40-59	40-49 ^c	75	55
India .....	...	...	0	"	...	...
Others	16	24	0-5 ^e	"	15 ^f	15 ^f
Total	696	636	750-839	650-714	720	660

* For crop year August-July, except U.S.D.A. estimates which are for the year July-June. Broomhall's figures are for probable shipments. Dots (...) indicate items for which no estimate was made.

^a No estimate given.

^b Roumania, Bulgaria, Hungary, and Jugo-Slavia.

^c Hungary and Jugo-Slavia.

^d Net import.

^e Algeria only.

^f Algeria, Morocco, Tunis, Chile.

with our own estimates, as of December 28 and May 1, for total net exports in August-July.

With net export and shipments data available for most countries covering two-thirds of the crop year 1929-30, it is appropriate to revise our December 20 estimates on the basis of seasonal movements in international trade in the eight preceding years. One may employ this procedure either by examination of the seasonal tendencies exhibited by Broomhall's total overseas shipments, by official statistics of total net exports from the four major exporting countries and Hungary and India, and/or by official statistics of net exports from these six countries separately. Identical results are not obtained by the several methods; nevertheless the discrepancies are not great.

In the preceding eight years, Broomhall's August-March shipments from all countries have ranged from 64 to 74 per cent of the August-July shipments subsequently recorded, with an average of about 67 per cent. Shipments in August-March 1929-30 were about 408 million bushels. The seasonal movement in past years therefore suggests that total shipments in August-July 1929-30 might range from about 550 to about 640 million bushels, more probably (taking the average) around 610 million—a figure somewhat below Broomhall's estimate as of April 2. If August-July shipments are to reach 610 million bushels, April-July shipments must reach 202 million, thus proving about 14 million larger than the shipments of December-March. As we have seen, shipments in April-July may reasonably be expected to exceed those of December-March even though the average post-war seasonal movement is thereby reversed. We are disposed to guess that April-July shipments may exceed December-March shipments by more than 14 million bushels, and therefore regard Broomhall's estimate of total August-July shipments, 636 million bushels, as one about as close to the most probable figure as the seasonal movement of shipments, qualified by other information, now seems to warrant. If shipments total 636 million bushels, net exports might approximate 670 million, for net exports always exceed shipments, though by differing amounts in different years.¹ Over the past six years, net exports have exceeded shipments by an average of 32 million bushels.

If an estimate of the year's net exports is based upon the seasonal movement of combined net exports from the United States, Canada, Argentina, Australia, Hungary, and India, a figure somewhat smaller than 670 million bushels is suggested. In the preceding eight years, net exports from these countries in August-March have ranged from 66.6 to 74.8 per cent of the yearly totals subsequently reported, with an average of 70.0 per cent. Net exports from these sources in August-March 1929-30 were about 400 million bushels;² and this suggests that August-July net exports from the same sources might range between 535 and 605 million, with 570 as the most probable figure. If 570 million were exported in the course of the year, about 170 million would be exported in April-July, and this figure would scarcely exceed the exports of December-March (as, for reasons set forth above, one may reasonably expect it to do). One may guess that net exports in April-July from these sources may reach or exceed 200 million bushels; if so, the August-July total might reach or exceed 600 million. And world total net exports might approximate 650 million if one allows for net exports of about 45 million bushels from Jugo-Slavia, Roumania, the northern African countries, Chile, and Russia.

An analysis of the seasonal movement of net exports from the individual countries, too detailed to present here, suggests about the same result if the historical average is to be approximated, and if allowance is made for the probability that the total export movement in April-July is likely to exceed that of December-March by something more than 10 per cent. All told, such evidence as we are able to gather suggests that something like 650-670 million bushels of wheat and flour may be exported in August-July 1929-30. If a total as large as this is subsequently reported, it will involve for the first time in nine years a heavier movement in April-July than in December-

¹ Shipments this year may not fall as far below net exports as usual, for it is possible that stocks of Canadian wheat in United States lake and Atlantic ports may prove smaller on August 1, 1930, than they were in 1929. Reductions in these stocks would swell shipments but not net exports.

² In the absence of official net export statistics, we have estimated Hungarian and Argentine net exports in March, and Australian in January-March.

March. We believe that there are sufficient reasons to anticipate such a reversal of seasonal movement. Nevertheless these reasons are not susceptible of translation into numerical terms, so that it is easily possible to ascribe to them undue weight in either direction. Perhaps the obscure forces that have caused April–July net exports historically to fall below December–March net exports will continue to prevail; perhaps, on the other hand, countervailing influences will cause the April–July movement to exceed the December–March by an amount larger than we have earlier set forth as reasonable guesses. The extent to which pure guessing is involved in a forecast of total April–July and August–July net exports deserves emphasis. Since it seems desirable to accept some figures or other merely in order to facilitate discussion, we employ 660 million bushels as a reasonable conjecture of August–July net exports. This is the figure shown in Table 9 (p. 321).

To set forth estimates of probable net exports from the several exporting countries involves even more guess-work than estimation of total net exports. India was a net importer in August–March; it seems reasonable to assume that such exports as may be made in April–July from her (apparently) large crop of 1930 may not prove larger than her earlier net imports.¹ Russia seems already to have exported some 4.2 million bushels of wheat, if Broomhall's data are correct; we assume that net exports for the year may be about 5 million. There seems to be little reason to alter our earlier estimate of net exports of 15 million bushels from Chile and the exporting countries of northern Africa. A reduction in the Roumanian crop estimate for 1929, together with accumulated data on net exports from the several Danubian countries in the first half of 1929–30, leads us to reduce the estimate of Danubian net exports from 75 to 55 million bushels.² Net exports from Australia tend on the average to decline in April–July from the peak reached in January–March; and if the decline proceeds

about as usual this year, net exports in August–July will reach 65 or 70 million bushels, the higher figure being the same as our December estimate. Argentine exports in the second half of the European crop year ordinarily reach their peak in February–March, occasionally in April. Since exports in February and March seem to have been somewhere around 10 million bushels in each of these months, monthly exports in April–July will probably average less than 10 million bushels, or less than 40 million bushels in the four-month period. Around 116 million bushels had been exported in August–March, so that net exports for the crop year now seem likely to approximate 150 million bushels in rounded figures, or around 20 million less than seemed probable on the basis of data available last December.

These calculations rest on the assumption that the influences which in April–July may alter the usual seasonal movement of world exports will have little effect upon the average seasonal movement from Argentina, Australia, and the minor exporters. If these influences in fact become operative for the world as a whole but not for the above countries, and if total net exports are to approximate 660 million bushels, then the average seasonal movement from either the United States or Canada, or both, will be modified. For if the eight-year average seasonal movement from the United States were to be duplicated, net exports in August–July 1929–30 would reach only about 135 million bushels, and from Canada only about 165 million, a total of 300 million; whereas, if total world net exports are to reach 660 million and other countries supply quantities as estimated above, the United States and Canada together would need to export 365 million. This amount could be exported if in 1929–30 the exports of the United States should prove to be as heavily concentrated in April–July as they were in these months in 1926, and if Canadian exports should prove to be as heavily concentrated as they were in April–July 1928; on this basis both United States and Canadian exports would reach about 180 million bushels. But in April 1926 it was reasonable to look forward to a large increase in exports from the United States in coming months because the Chicago July

¹ With rising international wheat prices, however, India might export enough wheat in May–July to become a net exporter for the crop year 1929–30 as a whole.

² Net exports from Hungary, Jugo-Slavia, and Roumania in August–February were about 40 million bushels.

future then stood far below the Liverpool July, while the Chicago May stood only a little below the Liverpool May. This year both the May and the July futures at Chicago stand only a little below the equivalent futures at Liverpool; and in addition the present level of prices is so low that a good deal of resistance to a decline is probable in the United States, where resistance appears always to be strong at a low level of prices. Possibly only a combination of circumstances involving distinctly good crop prospects in the United States, poor crop prospects in Europe, and a rather sharp upward movement in prices would serve to concentrate United States exports in the last four months of 1929-30 as heavily as they were concentrated in the last four months of 1925-26. Since our fundamental assumption involves ordinary weather throughout the Northern Hemisphere in April-July, we assume that a striking concentration of exports in these months will not occur; hence August-July net exports will probably fall below 180 million bushels. Yet they may exceed the average expectation, 135 million, if only because stocks are heavy and because throughout the crop year prices have run relatively too high to permit a free flow of wheat to export, and in order to be moved further out of line with prices on imports markets, would require a stimulus in the form of distinctly unfavorable new-crop prospects. Perhaps August-July net exports from the United States may fall about midway between 135 and 180 million bushels, in the neighborhood of 160 million; and net exports in April-July may approximate 59 million bushels, rather less than more.¹

Canadian net exports in August-July would need to reach about 205 million bushels if world net exports amounted to 660 million and other countries exported

455 million. Exports of 205 million in August-July imply exports of around 86 million in April-July. This quantity is clearly available for export in view of the large stocks remaining within the country on March 31; and it is smaller than the actual exports recorded in the same months of 1924, 1928, and 1929, though only in 1929 were stocks at the end of March larger than those of 1930. If 86 million bushels are in fact exported in April-July, the seasonal movement of exports in 1929-30 will exhibit a heavier concentration in the last four months of the crop year than in any of the preceding eight years. But since no other year witnessed Winnipeg prices so far out of line with Liverpool prices in the first four months, or an adjustment in the second four months that tended to bring Canadian prices into line with Liverpool, a marked departure from the average seasonal movement of exports may reasonably be anticipated. Presumably it will not occur in the presence of distinctly unfavorable crop developments in Canada; but ordinary weather seems to be the reasonable expectation.

OUTWARD CARRYOVERS

One may formulate rough estimates of probable outward carryovers at the end of the crop year in the major exporting countries either by analysis or historical changes in recorded stocks or by reference to the various other items of disposition, each of these, if not official, being estimated directly and stocks regarded as residual items.² Only the latter procedure is possible for Australia and Argentina. If Australian net exports in 1929-30 approximate 70 million bushels, and if the official crop estimate and our own estimates of inward carryover, seed requirements, and domestic utilization are accurate, then stocks on August 1 may approximate 51 million bushels. This would be apparently somewhat the largest carryover in post-war years, considerably above the average in percentage terms; but the Australian year-end stocks are never large enough to be a dominant factor in the world wheat situation. The Argentine stocks on August 1 were of major importance in 1929, when they were undoubtedly much the largest in post-war years, probably about 130 million bushels. If the crop of 1929 ap-

¹ Net exports in July-June may prove smaller than this; and since the disposition table (Appendix Table XI) involves July-June data, we there employ a figure of 155 million bushels. In our calculation of probable net exports from the United States, we have made no allowance for such disturbance of the average seasonal movement as may occur as the result of the Wheat Stabilization Corporation's recent proposal to millers involving the sale of the Corporation's wheat to millers "on a parity with the market value for export of similar grade, quality and position wheat on the day of the bid." The extent or effect of such sales seems not yet to be predictable.

² See the disposition statistics in Appendix Table XI.

proximated 175 million bushels,¹ and if our estimates of the other items of disposition are accurate, stocks in Argentina on August 1 may reach about 65 million bushels, standing much lower than in 1928 or 1929, but about at the average level of earlier post-war years.

In the United States, stocks on farms, in country mills and elevators, and in the visible (Bradstreet's) totaled 390 million bushels on March 1, 1930. The average reduction in these stocks between March 1 and July 1 over the period 1922-29 was 188 million bushels. The reduction may be above the average this year, not only because total human consumption of wheat seems to increase each year, but also because the movement of wheat to export in March-June may prove larger than usual. Perhaps it is reasonable to suppose that the March-June reduction of these stocks will prove to be among the heaviest ones of the past eight years, some 200 million bushels. If such a reduction occurred, stocks in these three positions on July 1 would reach 190 million bushels, about 10 million bushels larger than the record stocks of 1929. Stocks held by city mills, if reduced by about the average reduction occurring between December 31 and June 30 in the four years 1925-26 to 1928-29, would stand at about 90 million bushels on July 1, 1930. Hence total stocks on this date may reach 280 million bushels, larger by around 18 million than the (presumably) record stocks of 1929.² In the United States, the amount by which stocks are reduced between March 1 and July 1 usually depends primarily upon domestic utilization and not upon exports; but in Canada exports are more important than domestic disappearance in determining the reduction of stocks between April 1 and August 1. In the three years when Canadian stocks on April 1 were large (exceeding 200 million bushels), however, the reduction

during April-July has been 140, 148, and 157 million bushels. Perhaps it is unreasonable this year to anticipate as large a reduction as 157 million, which occurred in April-July 1924, when exports were greatly stimulated by rapidly rising prices induced largely by unfavorable crop prospects in many countries, and by heavy European purchases. A more probable reduction of 140 million would bring the carryover on August 1 to about 89 million bushels, a figure not far from that of 95 million reached in our disposition table (Appendix Table XI), which includes an estimate of net exports 205 million bushels. The correspondence between the two methods of estimating seems close enough to warrant the inference that the Canadian carryover on August 1, 1930, may approximate 85-95 million bushels. If so, it will be the largest on record except for the 104 million bushel carryover of 1929.

All told, in the event of usual crop developments, year-end stocks in the four major exporting countries may approximate 490 million bushels, about 50 million less than in 1929, but considerably larger than in any other post-war year. Increases of stocks in the United States and Australia may be more than offset by reductions in Argentina and Canada. Combined stocks afloat for Europe and in ports of the United Kingdom will probably not differ appreciably from the average. There seems to be no good basis for adjudging the probabilities with regard to changes in the stocks of Canadian wheat held in lake and Atlantic ports of the United States.

In the Danube countries, year-end stocks must seemingly fall below those of 1929 on account of the shorter crop and heavier exports of 1929-30. Little reason is apparent, however, to suppose that they will be lower than in other post-war years, for the inward carryover seems to have been huge, and there has been little incentive to utilize wheat for food or feed on account of the big crops of corn and barley. Nor are total year-end stocks in the importing countries of Europe likely to run below average in size. The year 1929-30, presumably opening with a heavy inward carryover, witnessed the harvest of a record post-war crop of domestic wheat of good quality; circumstances have been such as to make

¹ The standing official estimate is 140 million bushels. See above, p. 292, for explanation of our approximation. If the crop reached only 140 million bushels, then Argentine exports in April-July could not follow their normal seasonal course without reducing stocks on August 1, 1930, to an unprecedentedly low level.

² If millers generally should adopt the recent proposals of the Stabilization Corporation with regard both to purchase of wheat for milling for export and to storage of wheat, mill stocks might this year show quite a different change from the average April-June change of recent years.

for reduced consumption of wheat both for food and for feed; and it seems reasonable to suppose that small imports and growth of population will not suffice to offset these factors. Nevertheless it is possible that stocks on August 1, 1930, may be smaller than they were on August 1, 1929.

Thus in the major exporting countries and in Europe (excluding Russia), the evidence suggests that year-end stocks in all positions may be distinctly above average in size, but smaller than they were at the end of 1928-29. Almost certainly the crop year 1930-31 will not open with world stocks at a dangerously low level. Whether or not they will prove to be as significant a price-depressing factor in 1930-31 as they seem to have been in 1929-30 is a question hardly susceptible of a well-founded answer, for evaluation of the important European stocks position is never possible in numerical and definite terms.

PRICES

The outlook for prices seems to depend principally, as is usual in the spring and early summer months, upon new-crop developments. Given strikingly unfavorable crop developments, wheat prices would presumably advance sharply from the average level of March-April; given strikingly favorable prospects that promised a distinctly large crop in the Northern Hemisphere, prices would presumably decline, reaching a new low level for post-war years, though such a decline, unless preceded by a strong rise on earlier unfavorable crop news, is unlikely either to be sharp or to go far. Such crop developments might reasonably be expected to outweigh, in their effect upon prices, almost any combination of other price-influencing factors. Nevertheless it seems desirable to attempt to evaluate the several influences that are or may become operative.

Among the price-depressing factors one must list first of all the fact that world stocks of wheat seem still to be above average, and capable of exerting further pressure. Again, the Indian crop, now nearly harvested, is apparently a large one; and the present outlook suggests crops of winter wheat in the United States and Europe of average size or larger.

The array of potential price-raising in-

fluences seems somewhat more impressive. If our analysis of the outlook for international trade in April-July is adequate, it is reasonable to expect fairly active purchasing by European importers in these months. The general stocks position is probably unfavorable rather than favorable to European purchasers of wheat: in the exporting countries, the stocks are held principally by Canada and the United States,¹ not by the weakest holder, Argentina; and in Europe the stocks of import wheat, though not of domestic wheat, are probably somewhat low. Perhaps one may reasonably suppose that in Europe such weakness as was imparted to wheat prices during December-March by the rye and the feed grain situation will become less in evidence in April-July, if only because weakness has not become more apparent in recent months and because a repetition in 1930 of the abnormally large crops of 1929 is less probable than a smaller crop. Again, if one may trust the *Economist*, ". . . on the whole, the air seems to be clearing, and the world's emergence from the trade depression to be in its preliminary stages."² In this connection it is pertinent to note that the Liverpool market in part of April 1930 showed more pronounced strength than was observable since August 1, 1929. Again, the condition of the soil in Canada suggests to many that more than the usual amount of rainfall will be required during the growing season in order to produce an average crop; and without such rainfall, unfavorable crop news in Canada seems more probable than favorable news. Finally, the record of price movements over many years suggests that a long decline in prices such as has occurred since July 1929 appears usually to carry prices so low that an upward readjustment is necessary in the absence of an unusually large crop in the next year.

All told, the list of potential bullish developments³ seems to us, in the absence of exceptionally favorable weather for wheat,

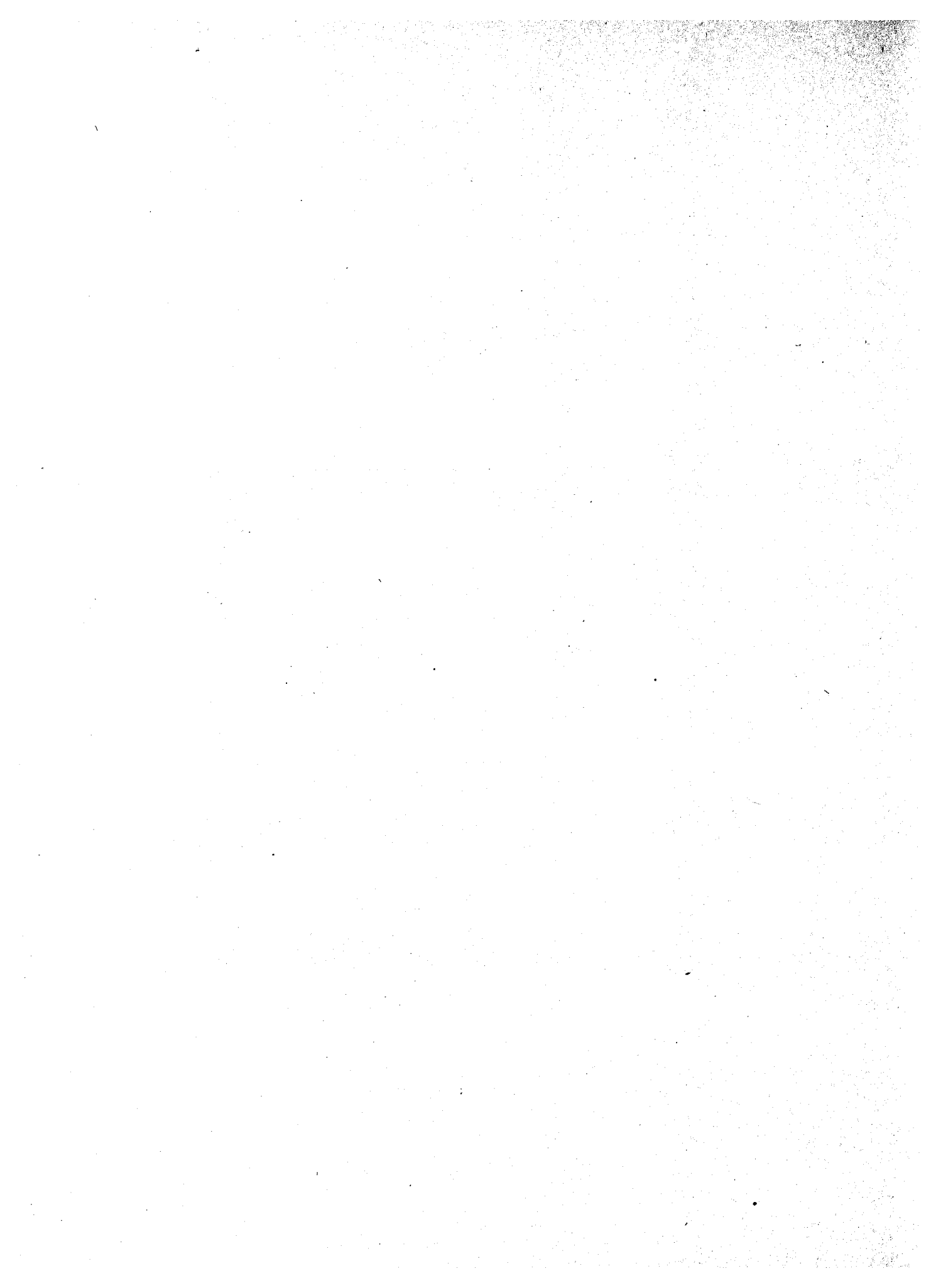
¹ In the United States, a considerable proportion of the stocks is owned by the Stabilization Corporation, unquestionably a strong holder; and in Canada the Pool, supported by the provincial governments, owns a good deal.

² *Economist, Monthly Supplement*, March 29, 1930, p. 17.

³ We do not include among these developments the possibility that the Stabilization Corporation may choose actively to support prices.

at this date (May 1) to outweigh the list of potential bearish influences, though we know of no way to give appropriate weight to any single factor, or to anticipate whether or not other factors—for example, an outpouring of Russian or Indian wheat exports, or new measures tending to restrict imports—will eventuate in the coming months. If crop developments are nowhere unusual, the balance of other influences seems to us to suggest steady or rising, but not sharply rising, prices in April–July. Adverse crop developments can have a much stronger influence on prices, at least temporarily, than evidence of an approaching large crop. The progress of crops, outweighing other influences, will probably prove to be the dominant influence not only upon the general course of prices, but upon such alterations as may occur in the spreads between prices in different markets. If a heavier volume of trade transpires, however, it may tend to raise the current low level of ocean freight rates and hence widen price spreads between exporting and importing markets, other things being equal.

This study is the work of M. K. Bennett and Helen C. Farnsworth, with the advice of Alonzo E. Taylor and Holbrook Working, and the aid of Katharine Merriam and Janet Murray



APPENDIX

APPENDIX

TABLE I.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING AREAS, 1920-29*

(Million bushels)

Year	United States	Canada	India	Australia	Argentina	Chile	Uruguay	Hungary	Bulgaria	Jugoslavia	Romania	Soviet Russia	Mexico
1920	833.0	263.2	377.9	145.9	156.1	23.2	7.8	37.9	29.9	43.0	61.3	.....	15.0
1921	814.9	300.9	250.4	129.1	191.0	23.6	10.0	52.7	29.2	51.8	78.6	.....	5.1
1922	867.6	399.8	367.0	109.5	195.8	25.9	5.2	54.7	32.6	44.5	92.0	.....	13.6
1923	797.4	474.2	372.4	125.0	247.8	28.1	13.3	67.7	29.1	61.1	102.1	419.1	13.7
1924	864.4	262.1	360.6	164.6	191.1	24.5	9.9	51.6	24.7	57.8	70.4	472.2	10.4
1925	676.4	395.5	331.0	114.5	191.1	26.7	10.0	71.7	41.4	78.6	104.7	782.3	9.2
1926	831.0	407.1	324.7	160.8	220.8	23.3	10.2	74.9	36.5	71.4	110.9	913.8	10.3
1927	878.4	479.7	335.0	118.2	239.2	28.3	15.4	76.9	42.1	56.6	96.7	776.0	11.9
1928	914.9	566.7	290.9	159.8	307.4	27.0	15.2	99.2	50.7	103.3	115.5	793.3	11.0
1929	806.5	299.5	317.6	125.0	139.9	....	....	71.8	34.5	95.0	84.5	738.9	11.3
Average													
1909-13	690.1	197.1	351.8	90.5	147.1	20.1	6.5 ^c	71.5	37.8	62.0	158.7 ^a	756.9 ^b	11.5 ^c
1924-28	833.0	422.2	328.4	143.6	229.9	26.0	12.1	74.9	39.1	73.5	99.6	747.5	10.6

Year	Morocco	Algeria	Tunis	Egypt	British Isles	France	Germany	Italy	Belgium	Netherlands	Denmark	Norway	Sweden
1920	17.9	16.2	5.2	31.7	56.8	236.9	82.6	142.3	10.3	6.0	7.4	1.00	10.3
1921	23.2	28.5	9.0	37.0	73.8	323.5	107.8	194.1	14.5	8.6	11.1	.97	12.3
1922	12.9	18.9	3.7	36.0	65.2	243.3	71.9	161.6	10.6	6.2	9.2	.64	9.5
1923	20.0	35.8	9.9	40.7	60.5	275.6	106.4	224.8	13.4	6.2	8.9	.59	11.0
1924	28.8	17.3	5.1	34.2	53.9	281.2	89.2	170.1	13.0	4.7	5.9	.49	6.8
1925	23.9	32.7	11.8	36.2	53.7	330.3	118.2	240.8	14.5	5.7	9.7	.49	13.4
1926	16.2	23.6	13.0	37.2	52.2	231.8	95.4	220.6	12.8	5.5	8.8	.59	12.2
1927	24.6	28.3	8.3	44.3	57.2	276.1	120.5	195.8	16.3	6.2	9.4	.60	15.8
1928	24.7	30.3	12.1	37.3	50.9	281.3	141.6	228.6	18.0	7.3	12.2	.80	19.2
1929	26.9	32.8	12.3	45.2	50.7	319.9	123.1	260.7	16.0	4.7	11.7	.73	18.7
Average													
1909-13	17.0	35.2	6.2	33.7	59.6	325.6	131.3	184.4	15.2	5.0	6.3	.31	8.1
1924-28	23.6	26.4	10.1	37.8	53.6	280.1	113.0	211.2	14.9	5.9	9.2	.57	13.5

Year	Spain	Portugal	Switzerland	Austria	Czechoslovakia	Poland	Finland	Latvia	Estonia Lithuania	Greece	Japan, Chosen	South Africa	New Zealand
1920	138.6	10.4	3.6	5.4	26.4	22.7	.27	.39	2.58	11.2	41.1	7.6	6.9
1921	145.1	9.3	3.8	6.5	38.7	40.5	.58	.78	3.34	10.3	39.7	8.7	10.6
1922	125.5	10.0	2.6	7.4	33.6	46.8	.71	.96	4.17	9.0	39.8	6.3	8.4
1923	157.1	13.2	3.8	8.9	36.2	54.9	.69	1.64	3.70	8.8	35.2	6.0	4.2
1924	121.8	10.6	3.1	8.5	32.2	37.5	.79	1.58	3.86	7.7	35.3	7.1	5.4
1925	162.6	12.5	3.5	10.7	39.3	63.9	.93	2.16	6.08	11.2	40.0	9.2	4.6
1926	146.6	8.6	4.2	9.4	34.1	52.5	.92	1.86	5.02	12.4	40.4	8.3	8.0
1927	144.8	11.4	4.1	12.0	40.4	61.1	1.06	2.64	6.35	13.0	40.1	6.0	9.5
1928	119.9	7.5	4.3	12.9	51.5	59.2	1.00	2.50	7.36	13.1	39.4	6.7	8.8
1929	154.2	11.1	5.8 ^c	11.6	48.1	60.3	1.10	2.34	10.09	8.5	38.8	10.3	7.1
Average													
1909-13	130.4	11.8 ^d	3.3	12.8	37.9	63.7	.14	1.48	3.63	16.3 ^d	32.0	6.3 ^a	6.9
1924-28	139.1	10.1	3.8	10.7	39.5	54.8	.94	2.15	5.73	11.5	39.0	7.5	7.3

* Data of U.S. Department of Agriculture and International Institute of Agriculture. For 1909-13, including U.S. Department of Agriculture estimates for area within post-war boundaries. Dots (...) indicate that data are not available.

^a Four-year average.

^c Includes spelt.

^b Regarded as too low by some Soviet officials, whose estimate is 908 million bushels.

^d One year only.

TABLE II.—MONTHLY WHEAT RECEIPTS AT PRIMARY MARKETS IN THE UNITED STATES AND CANADA*
(Million bushels)

Month	United States primary markets				Port William and Port Arthur				Vancouver			
	1926-27	1927-28	1928-29	1929-30	1926-27	1927-28	1928-29	1929-30	1926-27	1927-28	1928-29	1929-30
Aug.	71.6	81.6	84.2	101.7	1.5	2.4	3.5	2.4	.12	.09	1.07	.74
Sept.	48.7	79.7	73.3	47.0	32.8	8.6	39.1	27.8	.29	.32	2.61	4.83
Oct.	37.1	73.3	84.4	36.3	56.1	51.4	81.4	28.9	6.37	6.17	12.69	7.32
Nov.	29.8	44.8	43.6	20.6	60.5	71.0	72.9	17.0	7.22	10.78	14.65	6.19
Aug.-Nov.	187.2	279.4	285.5	205.6	150.9	133.4	196.9	76.1	14.00	17.36	31.02	19.08
Dec.	22.4	26.5	33.0	22.9	26.3	41.0	51.6	6.2	6.63	11.81	13.53	4.73
Jan.	24.6	23.5	22.5	17.5	14.0	21.1	11.0	2.8	6.83	16.49	13.90	4.25
Feb.	21.0	22.5	28.7	19.9	8.6	9.5	2.9	1.8	4.27	12.54	9.25	6.23
Mar.	16.6	26.3	27.2	.....	6.3	3.3	5.2	1.6	5.94	10.50	15.46	6.89
Dec.-Mar.	84.6	98.8	111.4	.....	55.2	74.9	70.7	12.4	23.67	51.34	52.14	22.10
Apr.	14.4	18.0	17.5	.....	12.6	.9	9.7	.....	3.58	10.88	7.31	.....
May	19.2	25.9	18.6	.....	17.3	17.6	13.8	.....	1.56	7.43	3.91	.....
June	20.7	15.6	25.7	.....	7.3	20.1	14.7	.....	.61	3.66	3.04	.....
July	58.8	72.6	94.2	.....	10.7	14.4	14.6	.....	.14	2.44	3.30	.....
Apr.-July	113.1	132.1	156.0	.....	47.9	53.0	52.8	.....	5.89	24.41	17.56	.....
Aug.-July	384.9	510.3	552.9	.....	254.0	261.3	320.4	.....	43.56	93.11	100.72	.....

* United States data are unofficial figures compiled from *Survey of Current Business*; Canadian data are official figures from *Reports on the Grain Trade of Canada* and *Canadian Grain Statistics*. Vancouver figures include receipts at Prince Rupert after October 1, 1926.

TABLE III.—WEEKLY WHEAT RECEIPTS AT PRIMARY MARKETS IN THE UNITED STATES AND CANADA*
(Million bushels)

Month	United States primary markets				Port William and Port Arthur				Vancouver ^a			
	1926-27	1927-28	1928-29	1929-30	1926-27	1927-28	1928-29	1929-30	1926-27	1927-28	1928-29	1929-30
Dec.	5.44	8.90	11.19	4.79	10.55	14.95	17.83	2.43	.95	2.57	2.44	.87
	5.67	6.41	8.18	7.01	7.14	11.05	16.33	1.39	1.02	2.26	3.40	1.30
	4.91	5.81	8.92	5.83	4.99	9.60	15.36	1.02	1.52	2.46	3.78	1.23
	3.98	5.11	7.84	3.92	3.87	8.62	8.98	.99	1.86	3.08	2.99	.90
Jan.	4.21	4.74	5.41	4.03	4.66	5.91	7.57	.81	1.76	2.75	2.57	.87
	4.69	4.56	4.49	4.59	5.21	5.28	3.96	.66	1.75	3.16	3.32	.90
	4.76	4.96	4.51	4.21	3.71	6.20	2.91	.54	1.76	3.18	2.48	.72
	4.64	6.18	4.20	3.22	2.81	4.95	2.10	.63	1.11	3.45	2.84	.96
Feb.	5.26	5.96	5.71	3.39	1.98	3.55	1.77	.53	1.76	4.98	3.41	1.34
	6.16	5.67	6.57	5.24	1.98	2.69	1.34	.56	1.33	4.49	2.88	1.82
	4.96	5.67	6.50	4.73	2.27	2.97	.90	.40	1.35	3.68	1.54	1.55
	5.76	5.02	6.03	4.19	2.37	2.52	.56	.49	.74	3.49	1.55	1.70
Mar.	4.33	5.08	6.28	6.24	1.97	1.64	.60	.35	.88	1.88	3.08	1.16
	4.58	5.87	8.41	5.28	1.61	1.31	.69	.27	1.28	1.88	3.92	1.64
	4.91	6.55	6.68	4.07	1.54	.95	.63	.37	1.32	2.38	3.46	2.03
	4.06	6.22	6.33	3.19	1.50	.86	1.11	.39	1.47	2.04	3.41	1.58
	3.59	5.07	6.06	2.59	1.25	.50	1.75	.45	1.14	2.28	3.32	1.27

* United States data are unofficial figures compiled from *Grain Dealers Journal*; Fort William and Port Arthur data are official figures for net receipts furnished by Canadian Board of Grain Commissioners; Vancouver data are official figures compiled from *Canadian Grain Statistics*. United States and Fort William and Port Arthur figures begin with weeks ending Dec. 4, 1926, Dec. 3, 1927, Dec. 1, 1928, Dec. 7, 1929; Vancouver figures are for weeks ending one day earlier.

^a Receipts at Prince Rupert included.

TABLE IV.—WEEKLY VISIBLE SUPPLIES OF WHEAT IN NORTH AMERICA, UNITED KINGDOM PORTS, AND AFLOAT TO EUROPE, DECEMBER–MARCH 1929–30*

(Million bushels)

Date	United States	Canada	U.K. ports	Afloat to Europe	Total	Date	United States	Canada	U.K. ports	Afloat to Europe	Total
Dec. 7.....	196.4	227.2	20.0	29.1	472.7	Feb. 1.....	173.5	220.6	15.1	37.6	446.8
14.....	195.8	229.7	19.2	26.7	471.4	8.....	169.4	218.2	14.0	39.5	441.1
21.....	194.8	228.5	18.8	24.4	466.5	15.....	169.3	213.4	13.0	40.7	436.4
28.....	191.2	228.5	16.8	26.9	463.4	22.....	166.8	211.0	13.0	39.2	430.0
Jan. 4.....	188.2	229.4	15.2	28.2	461.0	Mar. 1.....	165.2	210.2	13.6	36.7	425.7
11.....	184.6	227.3	14.7	32.7	459.3	8.....	165.3	206.6	13.4	37.3	422.6
18.....	180.8	227.6	13.8	33.3	455.5	15.....	163.2	202.4	12.5	38.5	416.6
25.....	177.7	222.8	13.2	35.8	449.5	22.....	160.6	199.4	11.6	35.9	407.5
						29.....	158.2	195.3	11.0	34.2	398.7

* United States data are *Bradstreet's*; Canadian data from *Canadian Grain Statistics*; United Kingdom and Afloat data from *Broomhall's Corn Trade News*. Canadian figures are for the days preceding the dates indicated in the above table, and include stocks in some elevators for the preceding week, but are adjusted to bring stocks in western country elevators to the correct week.

TABLE V.—WORLD VISIBLE WHEAT SUPPLIES, APRIL 1, 1920–30, AND MONTHLY, 1929–30*

(Million bushels)

Date	United States	Canada	Argentina	Australia	United Kingdom	Afloat to Europe	North America	Argentina, Australia	U.K. and afloat	Grand total	Total ex-Australia
1920 Apr. 1.....	94.9	28.2	6.6	60.0	10.9	59.7	123.1	66.6	70.6	260.3	200.3
1921 Apr. 1.....	51.7	40.6	3.7	73.0	18.4	58.2	92.3	76.7	76.6	245.6	172.6
1922 Apr. 1.....	69.4	63.3	4.8	50.0	6.5	65.9	132.7	54.8	72.4	259.9	209.9
1923 Apr. 1.....	102.1	81.8	9.2	56.5	7.8	52.8	183.9	65.7	60.6	310.2	253.7
1924 Apr. 1.....	111.3	123.3	10.6	40.0	8.5	65.8	234.6	50.6	74.3	359.5	319.5
1925 Apr. 1.....	108.8	80.0	11.4	63.0	11.7	84.1	188.8	74.4	95.8	359.0	296.0
1926 Apr. 1.....	82.0	99.0	6.6	30.5	7.7	46.0	181.0	37.1	53.7	271.8	241.3
1927 Apr. 1.....	88.7	107.3	14.7	53.0	5.0	75.7	196.0	67.7	80.6	344.3	291.3
1928 Apr. 1.....	110.1	146.6	12.8	36.0	7.7	68.4	256.7	48.8	76.1	381.6	345.6
1929 Apr. 1.....	173.1	177.1	14.7	53.0	8.0	71.0	350.2	67.7	79.0	496.9	443.9
1929 Aug. 1.....	190.3	99.8	16.2	20.0	6.2	37.6	290.1	36.2	43.8	370.1	350.1
Sept. 1.....	265.0	92.4	12.9	13.5	6.5	46.5	357.4	26.4	53.0	436.8	423.3
Oct. 1.....	285.2	153.6	9.2	6.2	11.4	42.3	438.8	15.4	53.7	507.9	501.7
Nov. 1.....	288.5	206.9	9.0	2.8	16.8	39.0	495.4	11.8	55.8	563.0	560.2
Dec. 1.....	274.3	220.7	7.4	1.8	20.6	28.6	495.0	9.2	49.2	553.4	551.6
1930 Jan. 1.....	264.0	223.1	7.4	44.0	16.8	28.2	487.1	51.4	45.0	583.5	539.5
Feb. 1.....	240.7	214.0	9.2	60.5	15.1	37.6	454.7	69.7	52.7	577.1	516.6
Mar. 1.....	221.6	210.0	9.5	59.5	13.6	36.7	431.6	69.0	50.3	550.9	491.4
Apr. 1.....	212.0	192.4	10.3	56.0	13.1	34.2	404.4	66.3	47.3	518.0	462.0
Average, Apr. 1											
1910–14.....	84.0	37.6	4.3	14.8	12.4	53.2	121.6	19.1	65.6	206.3	191.5
1925–29.....	112.5	122.0	12.1	47.1	8.0	69.0	234.5	59.2	77.0	370.7	323.6

* A joint compilation by Broomhall, the *Daily Market Record*, Minneapolis, and the *Daily Trade Bulletin*, Chicago; here summarized from Broomhall's *Corn Trade News* and the *Daily Trade Bulletin*. Includes some flour stocks.

TABLE VI.—INTERNATIONAL TRADE IN WHEAT AND FLOUR, MONTHLY, JULY-MARCH, 1929-30*

(Million bushels)

A.—NET EXPORTS

Month	United States	Canada	India	Australia	Argentina	Roumania	Hungary	Jugo-Slavia	Poland	Algeria	Tunis	Egypt
July	12.58	20.74	(.90) ^a	4.43	17.52	.02	2.55	1.09	(.11) ^a	...	1.23	(.88) ^a
Aug.	16.81	12.98	.33	5.34	23.73	.10	3.65	5.97	(.10) ^a	...	1.31	(.66) ^a
Sept.	18.18	9.42	(.05) ^a	4.53	24.51	.19	3.70	2.34	(.02) ^a	.35	1.01	(.73) ^a
Oct.	14.57	23.06	.10	1.98	15.12	.06	3.72	5.20	(.01) ^a	.38	.63	(1.06) ^a
Nov.	14.63	24.48	(.80) ^a	2.46	8.25	.06	3.32	2.12	(.02) ^a	.46	.50	(1.03) ^a
Dec.	11.29	18.47	(.37) ^a	4.08	11.16	.06	2.94	2.29	(.05) ^a	.54	.34	(1.00) ^a
Jan.	13.08	7.19	(.80) ^a	...	11.88	.20	2.06	...	.10	...	...	(1.38) ^a
Feb.	7.86	8.84	(.60) ^a	...	11.31	.19	1.02	.38	.11	.42	.14	...
Mar.	4.87	14.60	...	...	...	...	...	...	...	...	...	...

B.—NET IMPORTS

Month	Irish Free St.	United Kingdom	France	Germany	Belgium	Italy	Netherlands	Scandinavia	Switzerland	Czecho-Slovakia	Baltic States ^b	Japan
July	1.86	15.85	6.15	16.17	3.99	6.63	2.59	2.22	2.53	1.23	1.24 ^c	.72
Aug.	1.53	19.61	6.47	4.51	4.84	1.58	2.82	2.05	2.50	1.22	.79	.63
Sept.	1.80	24.35	4.90	2.19	3.25	.84	1.95	2.48	1.63	1.09	.92	.37
Oct.	1.73	23.95	2.71	1.63	4.03	1.22	3.45	2.33	1.02	1.16	.95	1.00
Nov.	1.77	19.53	2.96	4.18	3.11	1.29	2.99	2.28	.96	1.39	1.06	.93
Dec.	1.29	13.21	2.30	5.91	3.72	1.72	1.99	1.71	1.12	1.37	1.41	1.44
Jan.	1.10	13.26	.30	10.19	2.91	1.67	1.51	1.36	1.23	1.05	.20 ^d	1.40
Feb.	1.26	11.79	(1.24) ^c	5.94	2.83	2.50	2.04	1.72	1.06	1.07	.28 ^d	1.10
Mar.	...	16.96	...	...	...	...	...	...	...	...	...	...

* Data from official sources and International Institute of Agriculture.

^a Net import.^d Excluding Latvia.^b Finland, Esthonia, Latvia.^c Imports into Latvia partially estimated.^e Net export.

TABLE VII.—WEEKLY WHEAT AND FLOUR SHIPMENTS BY AREAS OF ORIGIN AND DESTINATION, DECEMBER-MARCH 1929-30*

(Million bushels)

Week ending	North America	Argentina, Uruguay	Australia	Russia	Danube ^a	India	Other countries ^b	Total	To Europe	To ex-Europe
Dec. 7	6.37	3.41	.52	...	1.39	...	.34	12.03	8.50	3.53
14	4.67	3.31	1.06	...	1.23	...	.47	10.74	8.14	2.60
21	3.63	2.21	1.03	...	2.20	...	.35	9.42	6.70	2.72
28	4.94	3.21	2.13	...	.80	...	.22	11.30	7.98	3.32
Jan. 4	4.86	1.51	1.18	...	.73	...	.23	8.51	6.97	1.54
11	6.22	2.31	1.78	...	1.02	...	.26	11.59	8.92	2.67
18	4.79	2.58	2.07	...	.59	...	.17	10.21	7.71	2.50
25	5.22	4.22	2.73	...	.62	...	.27	13.06	9.55	3.51
Feb. 1	6.50	2.74	1.22	.26	.66	...	.27	11.65	9.47	2.18
8	6.38	2.42	2.06	.70	.78	...	.23	12.57	10.11	2.46
15	5.37	2.90	1.59	1.10	1.18	...	.25	12.39	9.13	3.26
22	5.87	3.05	2.06	.14	1.01	...	.50	12.63	8.97	3.66
Mar. 1	3.92	3.03	2.26	...	.59	...	.55	10.35	7.11	3.24
8	5.69	2.69	2.30	.14	.78	...	.58	12.18	9.29	2.89
15	5.49	2.28	1.48	...	.91	...	.25	10.41	8.07	2.34
22	4.69	1.52	1.25	...	.98	...	.20	8.64	6.18	2.46
29	5.93	2.41	1.70	.22	.82	...	.07	11.15	7.97	3.18

* Here converted from data in Broomhall's *Corn Trade News*. Broomhall's weekly figures do not always check with his cumulative totals, which presumably include later revisions. Shipments from "other countries" apparently include a part of the shipments from the Danube and Russia in most weeks.

^a Russia, Danube, and Black Sea shipments are given together in the compilation which is the principal source for this table, with shipments across land frontiers included. The Russian figures here given are from another of Broom-

hall's tables, and these have been subtracted from the total to give data for Danube and Black Sea which include all the land shipments.

^b North Africa, Chile, Germany, France, etc.

TABLE VIII.—WEEKLY CASH PRICES OF REPRESENTATIVE WHEATS IN LEADING EXPORTING AND IMPORTING MARKETS, DECEMBER—MARCH, 1929-30*

(U.S. dollars per bushel)

Month	United Kingdom	United States				Canada		Argentina	Liverpool				
	British parcels	All classes and grades ^a	No. 2 Red Winter (St. Louis)	No. 2 Hard Winter (Kansas City)	No. 1 Northern (Minneapolis)	Weighted Average (Winnipeg)	No. 3 Manitoba (Winnipeg)	78 Kilo (Buenos Aires)	No. 1 Manitoba	No. 3 Manitoba	No. 2 Winter	Argentine Rosafe	Australian
Dec.	1.45	1.30	1.38	1.25	1.36	1.38	1.34	1.20	1.62	1.56	1.45	1.34	1.47
	1.40	1.22	1.32	1.20	1.29	1.32	1.28	1.18	1.58	1.51	1.39	1.33	1.48
	1.38	1.20	1.32	1.18	1.26	1.31	1.26	1.16	1.56	1.50	1.34	1.30	1.46
	1.41	1.23	1.35	1.22	1.30	1.36	1.32	1.20	1.61	1.55	1.38	1.39	1.48
Jan.	1.47	1.26	1.37	1.25	1.33	1.36	1.32	1.22	1.63	1.57	1.44	1.40	1.49
	1.42	1.23	1.36	1.21	1.30	1.32	1.29	1.18	1.60	1.54	1.42	1.38	1.48
	1.39	1.21	1.34	1.18	1.27	1.26	1.22	1.15	1.54	1.48	1.38	1.32	1.44
	1.39	1.22	1.33	1.18	1.27	1.26	1.21	1.15	1.51	1.44	1.36	1.28	1.40
Feb.	1.35	1.18	1.29	1.14	1.25	1.20	1.16	1.14	1.47	1.41	1.32	1.28	1.38
	1.27	1.17	1.23	1.12	1.25	1.18	1.14	1.10	1.43	1.36	1.28	1.28	1.34
	1.29	1.19	1.27	1.13	1.25	1.19	1.15	1.08	1.43	1.35	1.26	1.22	1.28
	1.21	1.15	1.21	1.12	1.25	1.10	1.05	1.01	1.36	1.28	1.27	1.15	1.28
Mar.	1.20	1.14	1.18	1.12	1.24	1.08	1.03	1.01	1.28	1.23	1.17	1.15	1.22
	1.19	1.11	1.20	1.06	1.17	1.05	1.01	1.00	1.30	1.23	1.20	1.12	1.23
	1.15	1.02	1.19	1.00	1.09	.99	.95	.94	1.26	1.20	1.18	1.09	1.20
	1.16	.99	1.15	.98	1.09	1.04	1.00	.94 ^b	1.24	1.18	n.q.	1.06	1.18
	1.16	1.00	1.17	1.00	1.08	1.04	1.01	.97 ^b	1.27	1.21	1.16	1.10	1.20

* United Kingdom prices are averages of sales of wheat parcels in British markets for weeks ending Saturday, from *London Grain, Seed and Oil Reporter*. United States prices are weekly averages of daily weighted prices for weeks ending Friday, from *Crops and Markets*. Prices of No. 3 Manitoba at Winnipeg are averages for weeks ending Saturday, from *Canadian Grain Statistics*; for the Canadian weighted average see *WHEAT STUDIES*, March 1929, V, No. 5. Argentine prices are averages for weeks ending Saturday, from *Revista Semanal*. Liverpool prices are for Tuesday of the same week, parcels to Liverpool or London, and are from Broomhall's *Corn Trade News*.

^a Six markets.^b On the basis of 76 kilograms per hectoliter.

TABLE IX.—MONTHLY PRICES OF DOMESTIC WHEAT IN EUROPE, FROM AUGUST 1927*

(U.S. dollars per bushel)

Month	Great Britain			France (Chartres)			Italy (Milan)			Germany (Berlin)		
	1927-28	1928-29	1929-30	1927-28	1928-29	1929-30	1927-28	1928-29	1929-30	1927-28	1928-29	1929-30
Aug.	1.63	1.33	1.52	1.75	1.60	1.51	1.75 ^a	1.72	1.74	1.78 ^b	1.49	1.59
Sept.	1.43	1.19	1.29	1.57	1.58	1.48	1.73	1.81	1.75	1.68	1.36	1.47
Oct.	1.37	1.24	1.24	1.54	1.61	1.45	1.77	1.88	1.84	1.62	1.38	1.50
Nov.	1.32	1.28	1.22	1.48	1.60	1.43	1.90	1.87	1.85	1.57	1.37	1.51
Dec.	1.29	1.25	1.24	1.58	1.56	1.41	1.88	1.87	1.90	1.53	1.33	1.57
Jan.	1.29	1.25	1.24	1.58	1.59	1.40 ^a	1.93	1.92	1.94	1.52	1.35	1.60
Feb.	1.26	1.27	1.16	1.56	1.64	1.31	1.94	1.96	1.89	1.49	1.40	1.52
Mar.	1.27	1.27	1.08	1.65	1.68	1.37	2.00	1.95	1.86 ^b	1.59	1.44	1.55
Apr.	1.34	1.28	....	1.74	1.60	....	2.09	1.93	....	1.72	1.45	....
May	1.43	1.29	....	1.87	1.65	....	2.14	1.89	....	1.73	1.41	....
June	1.43	1.25	....	1.85	1.62	....	2.10	1.91 ^a	....	1.66	1.39	....
July	1.41	1.35	....	1.76	1.62	....	1.77	1.77	....	1.60	1.62	....

* Data for Great Britain are averages of weekly average *Gazette* prices as given in the *Economist*; for France, averages of Saturday prices furnished directly by Federal Reserve Board through November 1929, after which they are taken from *Bulletin des Halles*; for Italy, averages of Friday prices of soft wheat as given in *International Crop Report and Agricultural Statistics*; for Germany, monthly average prices as given in *Wirtschaft und Statistik*. All data are converted, for convenience, from the domestic currency in which they are quoted in the above sources into U.S. money by monthly average exchange rates.

^a Three-week average.^b Second half of August.^c First two weeks of March.

TABLE X.—WHEAT STOCKS IN THE UNITED STATES AND CANADA, MARCH 1919-30*
(Thousand bushels)

Year	United States (March 1)				Canada (March 31)				
	Total	On farms	In country mills and elevators	Commercial visible (Bradstreet's)	Total	On farms	In elevators	In transit	In flour mills
1919	362,947	128,703	107,037	127,207	118,543	32,315	69,983	10,855	5,390
1920	351,769	169,904	123,233	58,632	77,306	34,837	30,622	6,272	5,575
1921	336,057	217,037	87,075	31,945	95,477	48,919	35,802	7,120	3,636
1922	256,038	134,253	75,071	46,714	114,986	41,649	58,338	10,999	4,000
1923	313,557	156,087	102,908	54,562	139,788	54,771	69,620	8,397	7,000
1924	308,919	137,721	98,284	72,914	202,493	70,755	111,589	14,149	6,000
1925	256,205	112,095	67,673	76,437	121,084	39,225	68,555	8,304	5,000
1926	224,575	100,137	76,333	48,105	161,376	50,878	95,691	8,307	6,500
1927	277,473	130,274	85,928	61,271	175,978	51,366	103,372	14,740	6,500
1928	286,559	130,944	75,428	80,187	224,699	69,807	130,055	19,037	5,800
1929	363,849	151,396	82,419	130,034	244,423	60,517	164,291	12,615	7,000
1930	390,277	129,153	95,950	165,174	228,837	45,524	169,955	4,358	9,000

* Bradstreet's visible, and official data of U.S. Department of Agriculture and Dominion Bureau of Statistics. See especially *Agriculture Yearbooks*, *Canada Year Books*, *Northwestern Miller*, and press releases.

TABLE XI.—APPROXIMATE DISPOSITION OF WHEAT SUPPLIES IN FOUR LEADING EXPORTING COUNTRIES, 1925-26 TO 1929-30*

(Million bushels)

Item	United States (July-June)					Canada (August-July)				
	1925-26	1926-27	1927-28	1928-29	1929-30	1925-26	1926-27	1927-28	1928-29	1929-30
Initial stocks	135	111	138	142	262	26	35	48	78	104
New crop	676	831	878	915	807	395	407	480	567	300
Total supplies	811	942	1,016	1,057	1,069	421	442	528	645	404
Net exports	95	209	194	147	155	324	292	332	406	205
Seed requirements	83	89	95	88	90	40	39	42	45	45
Consumed for food	493	494	508	511	515	42	43	42	44	44
Unmerchantable, lost in cleaning, fed on farms	29	12	77	49	29	18	31	34	44	15
Apparent error in crop estimate						-38	-11	...	+2	...
Stocks at end	111	138	142	262	280	35	48	78	104	95
Total disappearance	811	942	1,016	1,057	1,069	421	442	528	645	404

Item	Argentina (August-July)					Australia (August-July)				
	1925-26	1926-27	1927-28	1928-29	1929-30	1925-26	1926-27	1927-28	1928-29	1929-30
Initial stocks	56	61	65	90	130	36	30	34	43	45
New crop	191	221	239	307	175 ^a	115	161	118	160	125
Total supplies	247	282	304	397	305	151	191	152	203	170
Net exports	94	143	178	224	150	77	103	71	109	70
Seed requirements	25	24	25	23	24	11	12	14	14	14
Consumed for food	54	57	59	61	63	29	30	30	31	31
Feed and waste	10	3	3	4	3	4	5	4	4	4
Apparent error in crop estimate	+3	-10	-51	-45	...	...	+7	-10		
Stocks at end	61	65	90	130	65	30	34	43	45	51
Total disappearance	247	282	304	397	305	151	191	152	203	170

* Based so far as possible upon official estimates for the various items of supply and disposition. Estimates for 1929-30 are preliminary. For detailed explanation of our method of estimation and adjustment of items in the disposition table, see notes in *WHEAT STUDIES*, December 1929, VI, 110.

^a Unofficial; the official estimate published January 29, 1930, was 140 million bushels.