SURVEY OF THE WHEAT SITUATION

AUGUST TO NOVEMBER, 1929

The first four months of the crop year 1929–30 were unusual in almost all of the principal features of the world wheat situation. According to present indications, the world wheat crop of 1929 (ex-Russia, China, and Asia Minor) is a short one, probably the shortest, trends of production and consumption considered, since that of 1924. It is little if any above the 1922–27 average, but on the whole is of relatively good quality. The crop of the principal feed grains available to European importers, on the other hand, appears to be one of the most ample, probably around 20 per cent above the 1922–27 average and well above the line of post-war trend; and the European rye crop is also large.

In the Northern Hemisphere the new wheat moved from farms in exceptionally large volume in the early months of the crop year, chiefly because of the favorable weather for harvesting and threshing. Visible supplies concentrated in North America ruled at levels altogether unprecedented, but began to decline in November, an earlier date than in most years. The volume of international trade in August–November was notably small, principally because the requirements of importers for 1929–30 are much smaller than usual. Argentina supplied a much larger proportion of the total than ever before; so also did the Danube countries. Wheat prices fluctuated erratically, and in many markets stood in mid-November far below the level of August, and in some even below the low level of November 1928 — a position remarkable in view of the much smaller world wheat crop of 1929. Futures prices in Chicago were not sufficiently lower than those in Liverpool to permit free exportation from the United States, a situation not unprecedented but none the less striking in view of the heavy stocks available for export. Futures prices in Winnipeg ruled even above those in Liverpool, an altogether extraordinary relationship. Throughout the period under review market sentiment in North America appears to have been predominatingly bullish, while Europeans have tended to emphasize bearish features; the cleavage of opinion seems to have been more marked than in any recent year. The imponderable elements in the situation appear to have assumed more than their usual importance, and the bases for prediction were and remain far from solid.

The information now available suggests that the crop year 1929–30 may witness an exceptionally small volume of international trade, perhaps 720 million bushels or less as measured by net exports. Small import requirements, the result chiefly of liberal inward carryovers of wheat in Europe and of big European crops of wheat, rye, and the feed grains, suggest a small trade movement, even in the light of upward trends in consumption. Among the several exporting countries, only the Danube basin seems likely to furnish unusual quantities for export. Net exports from the United States and Canada combined may reach 390 million bushels or more. Carryovers in all four of the principal exporting countries and afloat to Europe will presumably prove smaller at the end of the year than at the beginning; but in Argentina and Australia they may be about of average size, and in the United States and Canada above average and indeed possibly the second largest in post-war years. In the absence of startling changes in new-crop prospects, international wheat prices may not shift in the winter months to a level much different from that prevailing in September–December, though the un-

CONTENTS

certainties in the situation are so numerous as to suggest that fluctuations may prove decidedly erratic. At some time before the end of the year, perhaps not until the new-crop outlook becomes fairly definite, it seems probable that adjustments will occur between Chicago-Liverpool and/or Winnipeg-Liverpool futures prices, with the effect of permitting a free flow of wheat to export. When and at what general level of prices these adjustments may occur seems to depend largely upon changes in sentiment or in new-crop prospects, neither of which can be foreseen.

I. CEREAL CROPS OF 1929

The four months under review witnessed good harvesting weather and early harvests in the Northern Hemisphere; and the Northern Hemisphere wheat crop of 1929 now appears to be somewhat larger than seemed probable four months ago. The Australian crop on the whole appears to have progressed moderately well, at least if one considers that such damage as it incurred was largely done by drought before September. The Argentine crop, for which the outlook late in August was also unfavorable because of drought, progressed favorably from mid-September to early November, but thereafter seems to have been damaged by rust. All told, the world wheat crop of 1929 (ex-Russia, China, and Asia Minor) now appears to be somewhat larger than the outlook in late August indicated, but the net change has not proved striking.

Wheat Crops and Their Distribution

The world wheat crop of 1929 (ex-Russia, China, and Asia Minor) is a distinctly short one, especially if trend of production is considered. The total, according to estimates that are in most instances official, is approximately 3,380 million bushels; except for the crops of 1922, 1924, and 1925, this is the smallest of the past eight years. It is around 535 million bushels smaller than the bumper crop of 1928.[1]

The totals and the distributions of the world wheat crop in recent years appear in Table 1. The reduction in the world outturn between 1928 and 1929 were strikingly concentrated in the four principal exporting countries, Canada, Argentina, the United States, and Australia. These countries as a group seem to have harvested crops around 585 million bushels smaller in 1929 than in 1928, and in each the crop of 1929 is more or less below the 1924–28 average, most strikingly so in Canada. The Indian crop is also below average, but larger than that of 1928. The four Danube countries as a group secured a harvest above average in size, but much smaller than the bumper crop of 1928. The importing countries of Europe, on the other hand, now seem clearly to have obtained in 1929 their largest post-war crop, and such was the outcome in northern Africa as well. The significant feature of the distribution in 1929 is therefore the plentiful supply of wheat in European importing countries, and the relatively small outturns in the major exporting countries. A similar distribution characterized the world wheat crop of 1925, though in that year Canada had a larger crop than in 1929, the United States a smaller one. On the whole, the quality of the crop of 1929 is good, notably in North America and Europe. Only in Argentina is quality relatively poor.

The data on the crops of 1929 as summarized in Table 1 are preliminary. If the final returns prove to be different, present indications suggest that they may show slightly larger outturns. Estimates current in late August of various wheat crops in the Northern Hemisphere have already been revised upward, and it is probable that revisions later to appear will be in the same direction.[2] But the points of outstanding significance—the relatively small world

[1] The United States Department of Agriculture's estimate, which includes a few more countries than our own, is 3,415 million bushels in 1929 as against 3,943 million in 1928.

[2] In our recent survey (see Wheat Studies, September 1929, V, 453), we published a table containing what at the time seemed to be a reasonable figure for the probable wheat crop of 1929 in the Northern Hemisphere, some 2,900 million bushels; the figure now stands at 3,000 million. The U.S. Department of Agriculture's estimate of the world crop stood at 3,350 million bushels on August 15, but is now (December 28) 3,415 million.

wheat crop and its unusual distribution between importing and exporting countries —are not likely to require substantial alteration.

It is important to note that the world wheat crop of 1929 stands substantially below the line of post-war trend (see Chart 1, p. 114). This trend cannot as yet be measured with precision. But there can be little question that in the past decade the crops of 1920, 1924, and 1929 stand farther below the trend than any others; and between these three there is possibly not much difference. Under such circumstances one would expect, if size of the world wheat crop is the all-important factor in price-making, that the level and behavior of wheat prices might prove to be roughly the same in 1929–30 as they were in 1924–25.[1] The events of August–November, however, demonstrate clearly enough that other factors may be of importance. Of these factors one is the difference in the distribution of wheat crops and their better quality this year. Another is the far larger inward carryover of 1929–30. The size of this carryover is fairly clear as regards the major exporting countries; but a feature commonly overlooked is that it was also large in the Danube countries and in the importing countries of Europe as a group.[2] Finally, the supplies of rye, barley, oats, and corn readily available to European importers in 1929–30 seem to be much more plentiful, trends considered, than they were in 1924–25, and among the most plentiful in the past decade. One outstanding effect of these factors is to render the European demand for wheat in 1929–30 much less insistent than it was in 1924–25. The situation in Europe is in fact not comparable with that of 1924–25, but more like that of 1925–26, though here also there are significant differences. Of these the outstanding ones are the far heavier inward carryovers of wheat and rye this year, and the better quality of the wheat and rye crops.

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*	757	296	1,100	105	331	40	*3,015*	191	115	359	*3,375*
1926	*870*	*415*	899	294	915	90	325	40	*2,960*	221	161	434	*3,395*
1927	878	480	752	272	995	106	335	40	3,120	*290*	118	*470*	*3,590*
1928	*930*	567	783	369	1,039	104	291	39	*3,355*	*340*	160	*560*[c]	*3,915*[c]
1929	807	294	...	301	*1,110*	119	318	39	*3,000*	*200*	112	*380*[d]	*3,380*[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*	733	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 X, 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, Uruguay, New Zealand.

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

RYE AND THE FEED GRAINS

Table 2 (p. 114) summarizes the latest available information regarding the European crops of wheat, rye, barley, oats, corn, and potatoes since 1920. The wheat and rye crops of 1929 rank with those of 1925 and

[1] Comparisons with 1920–21 are hardly appropriate in view of the great changes in the general level of wholesale prices that have occurred since 1920.

[2] See WHEAT STUDIES, December 1929, VI, 59–61.

1928 as decidedly large. The potato crop now seems to be at least of average size. The corn crop is quite the largest in the decade, around 310 million bushels or over 80 per cent larger than the short crop of 1928. The barley and oats crops also are the largest in ten years.

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

(Million bushels)

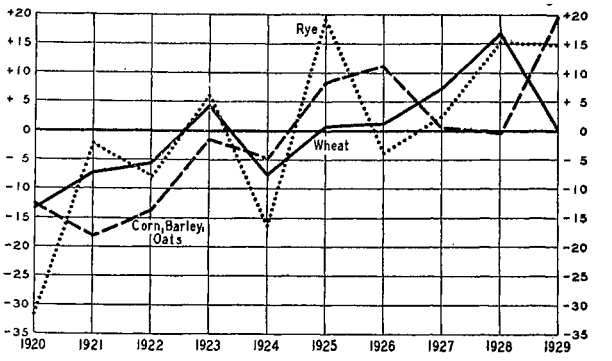
Year	Wheat	Rye	Potatoes	Corn	Barley	Oats
1920.....	947	533	3,351	520	551	1,478
1921.....	1,218	765	2,988	393	566	1,509
1922.....	1,043	720	4,531	423	599	1,544
1923.....	1,256	831	3,715	468	649	1,666
1924.....	1,057	656	4,045	590	565	1,628
1925.....	1,396	933	4,584	626	672	1,792
1926.....	1,209	752	3,714	655	673	1,845
1927.....	1,267	802	4,605	480	659	1,752
1928.....	1,408	901	4,527	379	744	1,877
1929.....	1,411	900	4,344	690	800	1,990
Average						
1909–13..	1,347	977	4,162	581	701	1,931
1924–28..	1,267	809	4,295	546	663	1,779

* 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 include 2-year or 4-year averages for a few countries.

It is illuminating to combine these data with other material in order to show roughly the situation in which European wheat-importing countries find themselves with regard to the leading cereal crops in 1929–30. Chart 1 shows, in terms of percentage deviations from the 1922–27 average, what may be called supplies of wheat, rye, and the feed grains readily available to European importing countries. For wheat we have taken the world crop ex-Russia, China, and Asia Minor; for rye, oats, and barley, the crop of Europe ex-Russia alone; and for corn the crops of Europe, Argentina, and South Africa, including rough estimates of the Argentine and South African crops of 1929–30. The three feed grain crops have been combined by reducing each to terms of weight. Although the trends of each line shown on the chart are on the whole indeterminate, it seems sufficiently clear that wheat stands below its line of trend, rye and the feed grains above. As to the feed grains, it is probable that the combined supply of these stands in 1929–30 as far above the line of post-war trend as in any other year; the closest analogies are with 1925–26 and 1926–27, and the situation is quite the reverse of what it was in 1928–29. The supply of rye available for 1929–30 is less strikingly large, but it is made the

CHART 1.—SUPPLIES OF WHEAT, RYE, AND THE FEED GRAINS READILY AVAILABLE TO EUROPEAN IMPORTERS, 1920–29, IN TERMS OF PERCENTAGE DEVIATIONS FROM THE 1922–27 AVERAGE*

(Per cent)



* The data for wheat are world (ex-Russia) totals with our adjustments for errors in certain crop estimates, as shown in Table 1. Rye, barley, and oats are European crop figures as shown in Table 2, while the corn crops are of Europe, Argentina, and South Africa. Corn, barley, and oats have been reduced to pounds before being combined and averaged.

larger by the heavy inward carryover. As we have seen, available supplies of wheat in 1929–30 stand far below the line of trend so far as these supplies are determined by the crop; but the inward carryover was of extraordinary size. With supplies of rye and the feed grains above their line of trend, and supplies of wheat below, the situation in 1929–30 resembles that of 1925–26 more closely than any other.

In illustration of the much easier supply situation in the feed grains that prevails in Europe this year as compared with last, the following monthly average prices, in marks per ton at Berlin for September 1928 and 1929, are of interest:[1]

	September		
Grain	1928	1929	Difference
Wheat	209.5	227.0	+17.5
Rye	211.7	186.8	—24.9
Barley[a]	204.4	177.9	—26.5
Oats	196.3	171.2	—25.1

[a] Winter or feeding barley.

[1] Data from *Wirtschaft und Statistik.*

The price of wheat was higher this year than last, whereas the prices of rye, barley, and oats were lower; and the spread between the prices of wheat and the other grains, narrow in 1928, had become a wide one in 1929.

The United States

The total United States wheat crop of 1929 was officially estimated as of December 1 as 807 million bushels, some 33 million larger than the forecast of August 1. The moderate increase was principally in the estimates of spring-wheat outturns.

At 807 million bushels, the crop of 1929 is one of the three smallest since the war, much like those of 1921 and 1923, but well over 100 million bushels larger than the short crop of 1925. It is more than 100 million bushels smaller than the good crop of 1928; but available supplies in the United States at the beginning of the crop year 1929–30 stood even higher than at the beginning of 1928–29 because the carryover into 1929–30 compensated for the reduction in crop outturn. The area harvested, 61.14 million acres, was the largest in history except for the four years 1919–22 immediately following the war. The average yield per acre of 13.2 bushels was low, but still smaller ones have been recorded in five of the past 21 years.

In its distribution by types of wheat, the crop of 1929 differs from that of 1928 principally in that outturns of hard red spring, durum, and hard red winter were much smaller, and the outturn of soft red winter much larger. It differs from the average distribution of 1924–28 principally in that the hard red spring and durum crops of 1929 are well below the averages, while the crops of hard red winter, soft red winter, and white wheats are close to but a little above the averages. The distribution of the 1929 crop resembles that of 1926 more closely than any other of recent years, but in 1926 the spring-wheat crops were relatively shorter than in 1929, the winter-wheat crops relatively larger.

It is always difficult to adjudge quality with an approach to precision. As judged by official index numbers in which 100 indicates a high medium grade of wheat, the crop of 1929 is below average in quality; the index number for 1929 is 87.5 per cent as against a 1918–27 average of 88.8 and a figure of 89.4 for 1928. The grading of spring wheat at Minneapolis is reported to be somewhat better than in 1928; that of winter wheat at Kansas City and St. Louis considerably poorer than in 1928. The weight per measured bushel is apparently somewhat lower than in any of the past five years, but higher than in 1919–23, and hence about average; spring wheat is superior to winter with regard to this factor. The protein content of the bread wheats seems to be fairly high, and is certainly higher than in 1928 or 1927. All told, the crop of 1929 seems to be at least average in quality, probably above.

Canada

Canada harvested a distinctly short crop in 1929. The official estimate as of October 31 stands at 294 bushels. The outturn now appears to have been somewhat larger than many anticipated in August;[1] but the true size of the crop can hardly be known until further data are available upon trade and domestic utilization. The standing official estimate is closely in line with unofficial estimates published in the course of September,[2] though a little higher than some of these. The area sown, 25.25 million acres, was the largest in history; but the yield per acre, 11.6 bushels, was lower than any since 1908, except for 1918 and 1919. The moisture supply was deficient not only in the preceding fall and in the early spring months, but also in the growing season. The United States Department of Agriculture's

[1] Our own attempt to evaluate information current in August led us to place the probable crop at about 260 million bushels. See Wheat Studies, September 1929, V, 432.

[2] Certain of these estimates, applying to outturns in the Prairie Provinces, compare with the official estimates as follows, in million bushels:

Estimator	Date of estimate[a]	Crop
Canadian Pool	September 6	272
M.F.P.[b]	September 7	266
N.W.G.D.A.[c]	September 26	256
N.W.G.D.A.[c]	December 12	272
Cromwell	September 3	271
Murray	September 4	261
Official[d]	September 10	269
Official[d]	November 13	272

[a] Date of publication.
[b] *Manitoba Free Press.*
[c] Northwest Grain Dealers' Association.
[d] Spring and winter wheat.

forecast of yield per acre in Saskatchewan, 15 bushels, now seems to have been slightly farther above the reported yield of 10.7 bushels than any similar calculation of yield from weather conditions up to May 1 had been, as compared with reported yield, for any of the past 25 years.[1] This outcome was similar to what occurred in 1924, when dry weather after May 1 was likewise influential.

In quality, the Canadian crop of 1929 appears to be excellent. The harvest was early and was completed in dry weather. According to the Northwest Grain Dealers' Association, some 88 per cent of the crop had been threshed by September 26, as against 83 per cent on October 8, 1928. Table 3 shows the distribution of Canadian wheat inspections by grade during September–November in the past seven years. There is very little "no grade" (damp or moist wheat), and very little of the lower grades (Nos. 5, 6, and feed and even No. 4) that were present in so large a proportion in the crop of 1928. The highest grades, No. 1 Hard, No. 1 Northern, and No. 2 Northern, are relatively more plentiful than they were in any of the preceding six years. So far as grading is concerned, one must go back to the crops of 1922 and 1923 to find a Canadian crop comparable in quality with that of 1929. With respect to protein content the 1929 crop is also relatively good. Analyses by the Canadian Pool gave the following comparison of the percentage of protein content by provinces, all analyses being of wheat containing 13.5 per cent of moisture.[2]

	1927[a]	1928[a]	1929
Manitoba	11.2	12.2	12.5
Saskatchewan	11.7	12.6	14.1
Alberta	11.9	12.3	14.1

[a] Data of the Dominion Grain Research Laboratory.

[1] See *Foreign News on Wheat*, June 15, 1929, pp. 10–16.

[2] Canadian Wheat Pool Research Department, *Preliminary Report on Quality of the 1929 Crop*, October 9, 1929. In its main features this report agrees with the Dominion Grain Research Laboratory's *First Report on the Protein Content of the 1929–30 Crop*, October 1, 1929.

[3] Broomhall designates the crop of 1928 as of poor quality, for reasons not made clear. See *Corn Trade News*, November 13, 1929. The fragmentary evidence available suggests that in recent years the European crops of 1924, 1925, 1926, and 1927 are to be described as rather poor quality; those of 1923, 1928, and 1929 as of good quality.

The weight per measured bushel of the crop is apparently below normal, and considerably lower than in 1928; hence the flour yield is not so high. Baking qualities of the flour are reported to be satisfactory, though loaves baked from No. 2 Northern wheat flour unbleached show a distinct tinge of yellow, probably the result of a relatively large proportion of Garnet wheat in the grade.

TABLE 3.—PERCENTAGES OF VARIOUS GRADES OF CANADIAN HARD RED SPRING WHEAT TO TOTAL WHEAT INSPECTED IN THE WESTERN DIVISION, SEPTEMBER–NOVEMBER, 1923–29*

Grading	1923	1924	1925	1926	1927	1928	1929
No. 1	40.2	22.8	28.4	14.1	1.7	1.1	39.8[a]
No. 2	24.6	19.8	30.8	24.2	10.1	13.5	36.2
No. 3	20.5	19.1	13.7	9.3	24.2	20.1	11.3
No. 4	6.0	16.0	3.2	3.0	13.3	18.2	1.6
No. 5	1.8	7.7	0.8	1.1	4.6	15.5	0.4
No. 6	1.2	3.4	0.2	0.6	2.3	14.6	0.2
Feed	0.8	1.4	0.1	0.3	1.1	5.9	0.1
No grade[b]	1.1	7.2	17.8	38.4	36.1	1.8	2.1
Other[c]	3.8	2.6	5.0	9.0	6.6	9.3	8.3

* Data from *Canadian Grain Statistics*.

[a] Includes No. 1 Hard.

[b] Wheat of the straight grades except that it contains a higher proportion of moisture. Aside from higher moisture content, it may be of as good quality as these grades.

[c] Largely durum.

EUROPE

As in Canada, harvesting weather in Europe was unusually dry, and the general quality of the European wheat crop of 1929 is undoubtedly better than usual, much as was the crop of 1928.[3] In some part the favorable weather may have been responsible for certain upward revisions in official crop estimates between the dates of approximately August 25 and December 20. The more important changes were made in Roumania, Spain, Italy, and the United Kingdom. With revisions of older estimates and the appearance of new estimates, it is now certain that the total European crop of 1929 is as large as the good crop of 1928, and probably larger. The four Danube countries have much smaller crops than in 1928, the importing countries much larger ones.

Most European countries harvested smaller crops in 1929 than in 1928; but several important producing countries, no-

tably France, Italy, and Spain, secured larger ones. The outturns in all except four countries were above the 1924–28 average: these countries were Hungary, Bulgaria, the British Isles, and Holland. Wheat acreage fell below the 1924–28 average in a longer list of countries, comprising Hungary, Roumania, the British Isles, France, Holland, and Spain. The yield per acre was below average only in three relatively unimportant wheat-producing countries, Bulgaria, Belgium, and Switzerland. Thus, on the whole, the relatively large European crop of 1929 seems attributable more to high yield per acre than to high acreage; and the yield per acre was most strikingly high in France, Italy, and Spain, the three principal wheat-producing countries of Europe. Of these three, only Italy harvested a record crop for post-war years, according to standing official estimates, though the French crop, officially estimated at 320 million bushels, is only 3.6 and 10.4 million bushels smaller than those of 1921 and 1925 respectively. Both the French and the German crops, especially the French, are possibly larger than the official estimates suggest;[1] and, if so, the final returns may show the total European (ex-Russian) wheat crop to have been the largest since the war by a small margin, but that of the importing countries the largest by a wide margin. Some observers believe, however, that the standing Italian estimate is too high.

No official estimate of the Russian wheat crop of 1929 has appeared as yet. The total grain crop is officially estimated as the largest since that of 1926. But production of the feed grains rather than of wheat and rye is said to be large; and the wheat crop, though not the rye, is thought to be smaller than in 1928. Although the evidence is somewhat obscure, it seems certain that collections of all grains during July–September at least were much larger than in the same months of 1927 or 1928, but that collections of the bread grains were not so much larger as were collections of the feed grains. Small quantities of wheat, barley, and oats have been exported. In view of the comparatively large collections of wheat and rye, supplies of breadstuffs in the consuming centers are perhaps more adequate than they were last year. It is the announced intention of Soviet officials to build up reserves of the bread grains, however; and, while the collections hardly point to imports, they seem unlikely to prove large enough to permit replenishment of reserves and appreciable exports as well.

[1] Unofficial estimates of the French crop, as quoted in *La Cote Bodenheimer* of September 20 and October 3, 1929, were as follows in million bushels:

Estimator	Crop
Bulletin des Halles	390
Destombe	329
Moniteur Agricole	393
Sicot	361

Other Northern Hemisphere Crops

During the period under review little important information has accumulated with respect to the wheat crops of 1929 in countries of the Northern Hemisphere outside of the United States, Canada, and Europe. Mexico appears to have harvested a crop above average in size. Japan and Chosen have apparently secured a wheat crop at least of average size. But both the Japanese and the Chinese rice crops are not good ones, and the Chinese wheat crop seems to be small, at least by comparison with the crop of 1928. Estimates of outturn in Syria and Lebanon have been raised, and unofficial advices confirm good crops in Turkey; throughout Asia Minor the situation is sharply in contrast with 1928–29, when wheat crops were very small and unusually large imports were necessary. The official estimate for India remains unchanged at 318 million bushels, one of the three smallest crops of post-war years, but by no means so small as those of 1921 and 1928.

The latest available information points to decidedly large outturns in northern Africa. The first official estimate of the Egyptian crop appeared in November; at 45.2 million bushels, the crop is the largest in post-war years. Morocco, Algeria, and Tunis have the second largest crops of post-war years; and the total for the four northern African countries is 119 million bushels, the largest crop in a decade by more than 10 per cent.

The Southern Hemisphere

Prospects for the wheat crop of 1929 in Australia have not been distinctly favorable

at any time since seeding operations began, though some improvement seems to have occurred during September–November. According to the United States Department of Agriculture, rainfall during the months of April–July was only about three-fourths of a 17-year average; and a statistical forecast of production in all Australia, based upon weather conditions through September, suggested that the crop of 1929 was likely to lie between 115 and 135 million bushels.[1] The area sown is now reported as 14.50 million acres, the largest in a decade except for the record of 14.81 million acres sown for the crop of 1928. The Department's forecast involved a prediction of yield per acre of only 8.6 bushels, the lowest since the war. Recent advices from Australia suggest that the Department's forecasts of production and yield per acre may prove to be slightly high. According to the *Wheat and Grain Review* (Melbourne) of November 6, the trade then anticipated a crop ranging approximately from 100 to 125 million bushels; the first official forecast issued early in November was 112 million bushels;[2] and Broomhall's Australian agent on November 22 estimated the crop at 105–112 million bushels. That some improvement occurred during the period under review is suggested by the facts that this same authority had previously placed the probable outturn at 100 million, and that some analyses of the world wheat situation, appearing from Chicago in August, mentioned the probable outturn at 80–100 million bushels, and even only 80 million.[3]

If the Australian crop reaches only 112 million bushels, it is one of the four smallest in the past decade, much like those of 1922, 1925, and 1927. But on account of the large acreage sown, the yield per acre is the smallest in this period of years. Australian advices state that outturns vary greatly from district to district, so that estimation is unusually difficult; and later official estimates may therefore differ from the first more widely than usual.

At the date of writing (December 27) the outcome of the Argentine crop of 1929 is probably more uncertain than in any other of the world's great wheat-producing countries. Such is usually the case; but this year the crop seems to have passed through its several stages of growth under weather conditions that rendered the outcome highly uncertain at any time. The seeding and early growing seasons were too dry. In August traders anticipated that the area sown was likely to prove from 10 to 20 per cent smaller than that of 1928; the current official estimate of 19.49 million acres, however, is only about 7 per cent lower. Dry weather persisted until the middle of September, and it became increasingly clear that abandonment must prove heavy, especially in the provinces of Cordoba and Santa Fé. The current official estimate, issued November 25, placed abandonment at 3.3 million acres or about 17 per cent; and the area remaining for harvest at 16.2 million acres. This is probably the smallest harvested area in the past eight years, 1924 excepted; but some well-informed observers regard the official figure as too low.

For six weeks after mid-September, weather conditions seem to have been really favorable for the Argentine crop. Early in November, however, reports of rust infestation began to be circulated—first of red rust, then of black rust, then of stripe rust. These reports were accompanied by descriptions of the spread of the infestation from province to province, and tended to become less startling only when harvest became general early in December. The news was sensational, and could hardly fail to have a marked effect upon the world markets.

During November and early December all sorts of estimates of the crop and the probable exportable surplus emanated from Argentina. Their common feature, naturally enough in view of the drought and rust, was the consensus that outturn in 1929 must fall far below that of 1928. Otherwise the range of estimates was very wide, roughly from 150 to 250 million bushels. Two American observers, Messrs. Cromwell and Murray, were maintaining forecasts of

[1] This analysis appeared in *Foreign News on Wheat*, October 21, 1929, pp. 27–33.

[2] It is not clear whether this forecast includes all of Australia, or only the four principal wheat-producing states. Outturns in other states totaled 3.7 million bushels in 1928.

[3] Such reviews were circulated by Bartlett, Frazier and Company, and James E. Bennett and Company of Chicago in mid-August.

about 215 million bushels around the middle of November; on November 26 Cromwell lowered his estimate to 204 million. The *Times of Argentina* published an estimate of 243 million on November 11; and Broomhall's *Corn Trade News* an estimate of 236 million on November 13. By December 7, Broomhall's estimate had been reduced to 202 million.

The first official estimate, issued on December 24, was only 144 million bushels or among the lowest of any that had been circulated. Many, perhaps most, observers regard it as unduly pessimistic. In view of the fact that the Argentine official estimates of wheat production in 1927 and 1928 proved far too low,[1] there seems to be a good deal of justification for this point of view. We know of no way to adjudge the crop of 1929 with precision while estimates vary so widely; but, in view of the generally reliable quality of the advices emanating from Broomhall's Argentine agent in recent years, we tentatively employ 200 million bushels as a reasonable approximation. This figure seems not to be far out of line with the views of other reputable private statisticians, but is seemingly somewhat high. Our choice of a moderately high figure is partly conditioned by the fact that we regard our own figure for the Argentine inward carryover as somewhat too low.

If the crop approximates 200 million bushels, it is around 140 million smaller than the bumper crop of 1928, and distinctly smaller also than the good crops of 1923 and 1927. Though apparently not the smallest in post-war years, it ranks with the poor crops of 1921, 1922, 1924, and 1925, which ranged from 191 to 196 million bushels. Drought and rust seem to have resulted in wheat below the average in weight per measured bushel; on November 26 Murray placed the average weight per bushel of the crop of 1929 some 3 pounds below that of the crop of 1928 and some 1½ pounds below the general average. It remains to be seen, however, whether or not the crop will prove of distinctly poor quality from the point of view of European millers, and whether or not it will prove to be as unsatisfactory as was the crop of 1925.

If the crop is only 144 million bushels, as the official estimate suggests, it is the smallest in a decade.

Estimates of the wheat crops of 1929 are not yet available for most other countries of the Southern Hemisphere, of which the more important are Uruguay, Chile, New Zealand, and the Union of South Africa. The Union of South Africa, however, is reported to have harvested much the largest crop in post-war years, some 11.2 million bushels.

II. MARKETING AND STOCKS

The wheat crops of the Northern Hemisphere were harvested early and under favorable weather conditions; and chiefly but not entirely because of this, farmers sent large quantities of wheat to market in the early part of the period under review. Visible supplies in North America were pushed to extreme heights by the heavy marketings on the one hand and the slow movement of wheat to export on the other. It was in some part on account of the abundant marketings of European wheat that the export movement from North America was so small, though heavy shipments from Argentina were also important. There seems little reason to believe that the course of marketing in Europe is to be regarded as convincing evidence that European demand for import wheat must become far more active in the second than in the first half of the crop year, though it is conceivable that this should occur for quite other reasons. North American visible supplies now seem to have reached their peak for the year at an unusually early date; for the first time since 1919 no increase occurred in November.

European Marketing

In most countries of Europe the relatively early harvest and the dry harvesting and

[1] The official estimate for the crop of 1927 stands at 239 million bushels; trade and utilization statistics suggest that the crop actually reached about 290 million. The official estimate for 1928 now stands at 283 million bushels (revised downward on December 24 from 307 million bushels); trade and utilization statistics suggest that the crop reached and probably exceeded 340 million bushels. See Appendix Table X.

threshing weather doubtless enabled farmers to market their wheat more freely in the opening months of the crop year than is ordinarily possible. The large crops themselves probably resulted, in some countries at least, in a movement from farm to market that bulked quantitatively large by comparison with most earlier years, the more so because heavy stocks of old-crop wheat remained in the hands of producers. Among these countries one may list France, Italy, and the countries of the Danube basin. In England, deliveries of wheat by farmers bulked somewhat larger than in 1928, 1927, or 1924, but smaller than in any other of the past eight years; and on the whole no evidence appears to suggest that an unusually large proportion of the crop of 1929 had been marketed by December 1. In Germany, however, unofficial estimates of the percentages of the domestic wheat crop remaining on farms on October 15[1] suggest that marketings prior to this date constituted an appreciably larger proportion of the crop than in 1928 or 1927, and about the same as in 1926. Here marketing may have been accelerated not only by the dry weather, but also by governmental decrees requiring millers to employ certain percentages of domestic wheat in their mix,[2] by high interest rates that possibly caused some farmers who would otherwise have held their wheat to sell it, and by the high prices of wheat in relation to rye and the feed grains, which may have induced farmers to sell wheat rather than these grains. The high interest rates and relative cheapness of the feed grains have been mentioned as factors operative in many other countries. It is impossible to ascertain how far they may have been influential, but in general weather conditions seem to play the most important rôle.

Some observers have adverted to the course of marketing in Europe as evidence showing that the heavy receipts of domestic wheat have enabled importing countries to refrain from purchasing import wheats as extensively as usual in the first third of the crop year; and that receipts of domestic wheat must decline sharply in the latter part of the year and thus give rise to much heavier demand for import wheats than has thus far been apparent. We find it difficult to confirm this view except in a qualified form. It may apply to Germany and Italy, and perhaps to a few of the smaller importing countries. But the largest importing country of Europe, the United Kingdom, imported more wheat in August–November 1929 than in any recent year, and furthermore held larger port stocks on December 1. Regardless of the marketings of domestic wheat, France can hardly be expected to increase her imports greatly in the latter part of the year, if only because her crop is so large. In Belgium, Holland, and Switzerland the domestic wheat crop forms too small a proportion of the total wheat milled to warrant the inference that unusually heavy marketings of domestic wheat in August–November could sensibly affect the demand for import wheats. Even in Italy the domestic wheat crop and the inward carryover combined were so large that imports for the crop year as a whole must be expected to prove relatively small; and the small imports of August–November therefore may not in the final returns constitute a distinctly small proportion of the annual imports. In this connection it is pertinent to note that Italy and Germany almost always import more wheat in the second than in the first half of the crop year.

North American Marketing

Chart 2 shows weekly wheat receipts at primary markets in the United States during July–November 1926–29. The course of receipts thus far in 1929 has resembled that of 1926 fairly closely except for the peak reached in early August; the resemblance results from the similar distribution of the wheat crop in the two years, winter wheat being abundant, spring wheat relatively scarce. In years when the spring-wheat crop is large, as in 1927 and 1928, a second peak of primary receipts appears in October.

Marketings of winter wheat in July and early August were extraordinarily large, in part because the harvesting weather was on the whole favorable, at least in the latter

[1] These percentages, according to the *Deutsche Landwirtshaftsrat*, are as follows:

1926	66.6[a]	1928	76.4
1927	73.5[a]	1929	66.9

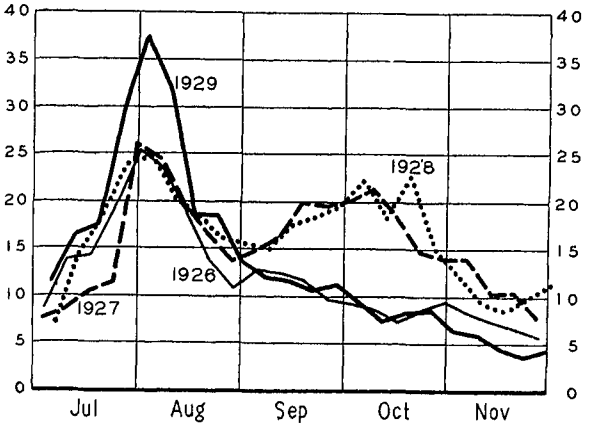
[a] Data for Prussia only.

[2] See below, p. 127.

part of July and early August; but more largely because the relatively high wheat prices prevailing at the time led farmers to hasten to sell their wheat. Primary receipts during July and August, some 196 million bushels, were nearly 40 million bushels larger than they had been in 1928 in spite of the much smaller crop; and in 1928 receipts in these months had been the largest

CHART 2.—WEEKLY WHEAT RECEIPTS IN PRIMARY MARKETS IN THE UNITED STATES, JULY–NOVEMBER, 1926–29*

(Million bushels)



* Unofficial data compiled from *Grain World*. See Appendix Table III.

in post-war years. Since terminal elevators already contained far more wheat than was usual at the beginning of a new-crop movement, and since exports were restrained by prevailing international price relationships, congestion was more or less inevitable, and embargoes were placed upon shipment of grain to several important terminals. Several million bushels of winter wheat moved north to Minneapolis and Duluth when the marketing movement was at or near its peak. The prices of cash wheat fell to unusually wide discounts under the futures prices. The general situation gave occasion for the newly organized Federal Farm Board to advise farmers not to send their wheat forward too rapidly.[1] How effective the Board's advice and actions may have been is necessarily a matter of conjecture. There is reason to believe, however, that the movement of spring wheat that ordinarily is heaviest early in September was unusually light this year, even considering the rather small crop. As Chart 2 suggests, the marketings during September–November 1929 were even smaller than they had been in 1926, though the spring-wheat crop of 1929 is approximately 12 per cent larger than the spring-wheat crop of 1926.

With regard to the location of stocks of wheat remaining on farms in the United States around December 1, the course of receipts at primary markets suggests that stocks may be heavy in the spring-wheat rather than in the winter-wheat belt. But for the country as a whole, farm stocks were probably relatively small. This is suggested by the fact that receipts at primary markets during July–November 1929 have constituted 37.2 per cent of the estimated crop, a fairly high figure as compared with earlier years,[2] while the crop was not a large one. Hence somewhat less wheat probably remains on farms than in any of the past seven years except possibly 1925, when the crop was still smaller. No data are available to indicate the relative size of stocks remaining in country mills and elevators. Stocks held in city mills, however, probably remained exceptionally large on December 1. These stocks stood at 109.3 million bushels on September 30, as against 92.7, 77.2, and 79.9 million on the same date of the three preceding years.[3]

Canadian farmers also sent their wheat to market early. Chart 3 (p. 122) shows monthly receipts at country elevators in the Prairie Provinces during August–November 1929, and in 1924–25 and 1928–29. These two years have been selected for comparison because the crop of 1924 was of much the same size as that of 1929, but was secured under much less favorable harvesting weather; while the crop of 1928 was secured

[1] The first announcement on this subject appeared August 3, others on August 7 and 23.

[2] The figures are as follows as based chiefly upon data shown in Appendix Tables I and II.

1922	28.7	1926	31.8
1923	27.9	1927	38.5
1924	41.5	1928	39.1
1925	31.5	1929	37.2

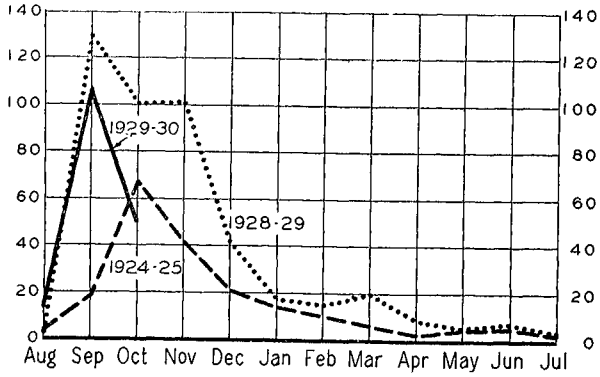
If our adjustments of official estimates, as shown in Table 1, p. 113, are used, the percentage for 1925 becomes 30.5, for 1926, 30.4, and for 1928, 38.5.

[3] Census data. The figures here employed do not include city mill stocks held in country elevators, public terminal elevators, private terminal elevators not attached to mills, or in transit and bought to arrive.

under similarly favorable weather conditions, but was much larger. September receipts in 1929 stood much higher in relation to August, October, or November receipts

CHART 3.—MONTHLY WHEAT RECEIPTS AT COUNTRY MILLS AND ELEVATORS IN THE PRAIRIE PROVINCES OF CANADA, 1924–25 AND FROM AUGUST 1928*

(*Million bushels*)



* Data compiled from *Canadian Grain Statistics*.

than was true in 1924 or 1928. The peak of the movement from farms was thus reached early and passed quickly. Receipts at the principal terminals, Fort William and Port Arthur, were naturally somewhat larger in October than in September, but the week of heaviest receipts was in September.[1]

VISIBLE SUPPLIES

In the face of a relatively short wheat crop in 1929, visible supplies have been maintained at unprecedentedly high levels during the period under review. Chart 4 shows visibles in North America, and afloat for Europe and in ports of the United Kingdom, from August 1927. Total visibles were larger in both 1927–28 and 1928–29 than they had been in earlier post-war years; thus far in 1929–30 they have been larger still.

Visible supplies in the United States, already at a high level at the end of June because of the comparatively restricted flow of wheat to export since January 1928, rose very rapidly in July and August with the heavy marketings in those months and the continued curtailment of the export movement. As marketings declined in September and October, however, the increase in visibles was only slight; and during November a decline occurred. This decline was considerably larger than any that had been witnessed in November during the preceding six years; indeed, in all of these years except 1926, visibles increased in November. It seems probable that the peak of United States visibles for the year was reached in the first week in November, an unusually early date.

Canadian visible supplies declined less in August than usual because exports were relatively small; thereafter they rose very rapidly in September and October with the heavy marketings and continued small exports. The increase in November was much the smallest of any in the last seven years. It now seems probable that December may witness either a comparatively small increase or a decline, so that the peak for the year will have come earlier than usual.

Table 4 shows the distribution of the Canadian visible supply between different positions as of the end of November since 1923. In every position except lake and Atlantic ports of the United States, Canadian wheat has accumulated in unprecedented amount; and in Canada as well as in the United States temporary embargoes on receipts at some markets were necessary when the marketing movement was at its height. The accumulation is the more re-

TABLE 4.—CANADIAN GRAIN IN STORE LATE IN NOVEMBER, 1923–29*

(*Million bushels*)

Day nearest November 30	Total	Country elevators Western Division	Interior elevators	Fort William, Port Arthur	Vancouver elevators	Public elevators in the East	U.S. lake and Atlantic ports
1923..	101.6	52.7	.5[a]	19.8	.8	11.5	16.3
1924..	73.7	24.3	2.5[a]	25.6	1.3	10.2	9.8
1925..	104.6	44.6	5.8	12.5	5.0	19.0	17.7
1926..	116.1	35.4	7.5	24.6	7.1	15.3	26.2
1927..	123.8	46.2	6.5	13.7	6.5	19.6	31.3
1928..	184.1	68.9	16.3	24.8	9.4	29.5	35.2
1929..	222.8	76.0	17.5	47.0	12.5	34.7	35.1

* Compiled from *Canadian Grain Statistics*, and adjusted to bring country elevators in Western Division and interior private and manufacturing elevators into the proper week. Stocks at Prince Rupert and Victoria included in Vancouver figures.

[a] Figures prior to 1925 are less comprehensive than for later years.

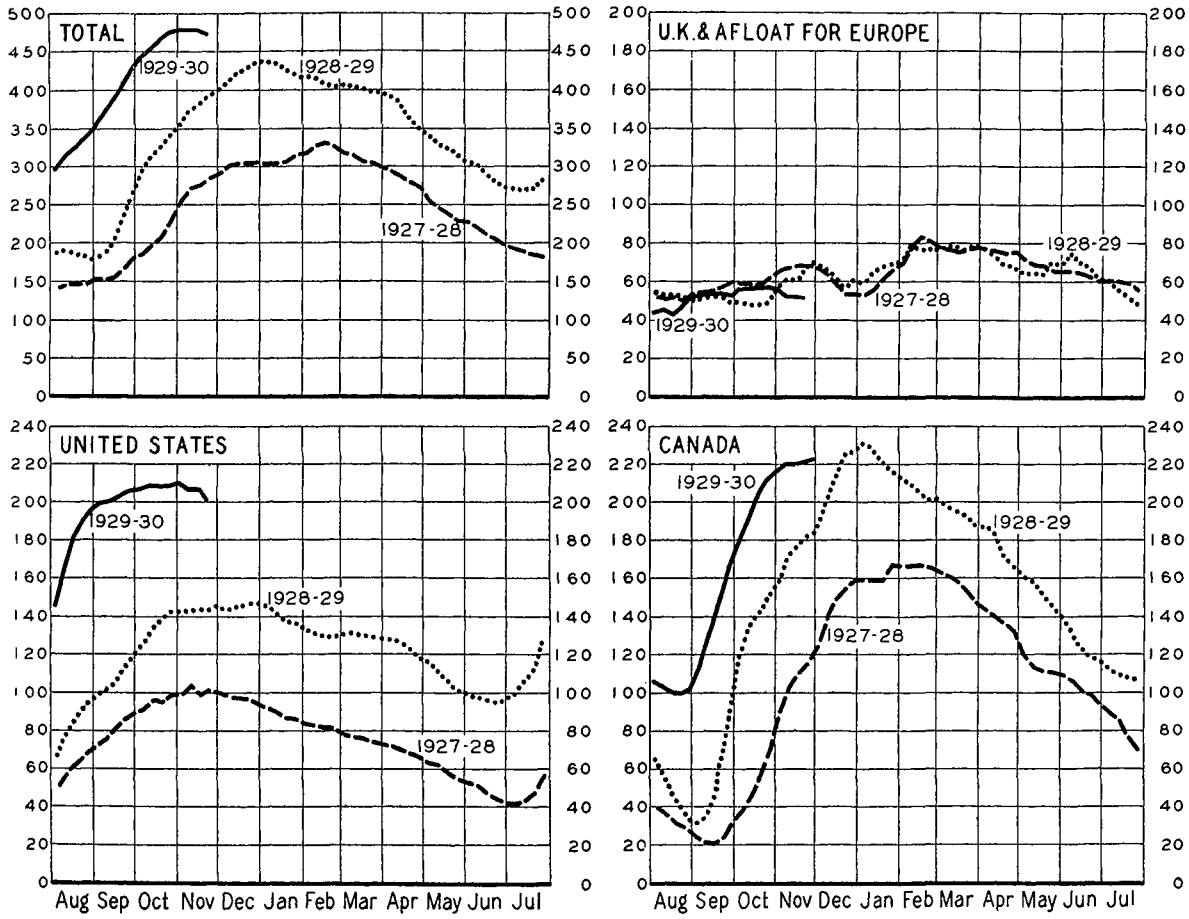
[1] See Appendix Tables II and III.

markable because it accompanied a relatively small wheat crop; it reflects the unprecedentedly high level of Canadian wheat prices as compared with prices elsewhere, which resulted in uncommonly small exports, available supplies considered.

this year. A striking feature this year was the accumulation of stocks in ports of the United Kingdom at a time when stocks afloat and total stocks were diminishing.[1] On December 1, port stocks reached 20.6 million bushels, quite the largest figure since 1920; but stocks afloat, 28.6 million

CHART 4.—VISIBLE WHEAT SUPPLIES IN THE UNITED STATES, CANADA, AND UNITED KINGDOM PORTS AND AFLOAT TO EUROPE, WEEKLY FROM AUGUST 1927*

(Million bushels)



* Data from *Grain World, Northwestern Miller,* and *Canadian Grain Statistics.*

Visible supplies afloat for Europe and in ports of the United Kingdom have stood at a rather low level, the natural result of the small overseas shipments; in November in particular they were small as compared with those of 1928 and 1927. At no time, however, have these stocks reached so low a level as prevailed in 1925, when overseas shipments during August–November were of much the same size as they have been

bushels, were smaller than in any of the past nine years.[2] The accumulation in ports of the United Kingdom resulted proximately from heavy shipments of Argentine wheat unsold on consignment; much of this wheat was not wanted on the Continent, and it therefore accumulated in British

[1] See Appendix Table IV.

[2] See Appendix Table V.

ports. There were, however, exceptionally large stocks in Rotterdam and Antwerp, though the statistical data do not permit comparison with earlier years.

The curve of total visibles of course reflected the changes in its several components; it was noteworthy not only for its high level, but for the rapid increase in August and the absence of an increase in November. There can be no doubt that the heavy world visible supplies prevailing during the first four months of 1929–30 (themselves only an incomplete reflection of the huge world carryover into the crop year) have constituted a depressing influence upon prices. Under a more normal level of visible supplies, the short world wheat crop of 1929 must inevitably have given rise to a far different level and course of prices from those that have actually prevailed. Over the 5-year period 1924–28, world visible supplies on December 1 averaged 337.8 million bushels; on December 1, 1929, they stood at 553.4 million.[1]

III. INTERNATIONAL TRADE

Volume and Course of Trade

One of the most striking features of the world wheat situation thus far in the crop year 1929–30 is the relatively small volume of international trade in wheat and flour. Broomhall's data on shipments to Europe, to ex-Europe, and in total for the first 17 weeks of the past six years are as follows, in million bushels:

Aug.–Nov.	To Europe	To ex-Europe	Total
1924	228	27	255
1925	167	41	208
1926	196	37	233
1927	221	31	252
1928	232	53	285
1929	172	47	219

Only 219 million bushels moved overseas in the first third of the current crop year, the smallest quantity shipped in the same months of any of the preceding five years except 1925. Shipments to ex-European destinations, however, were relatively large, being exceeded only by those of 1928; while shipments to Europe were notably small, exceeding those of 1925 but little.

The decline of shipments in 1929 from those of 1928 is explicable chiefly by reference to the European supply situation. With a heavier inward carryover, big crops of new wheat harvested early and in good condition and marketed promptly, and large crops of rye and the feed grains, European importing countries have not needed to purchase import wheats as heavily as in 1928. In the principal importing countries of continental Europe, notably France and Italy, domestic wheat prices have stood considerably lower in relation to the prices of import wheats this year than last,[2] an inducement for millers to utilize the domestic crops so far as possible. Moreover, the feed grains and rye have sold at much lower prices as compared with wheat this year than last. We find little convincing evidence that there has been an unusual effort, concerted or otherwise, on the part of European importers deliberately to purchase as little foreign wheat as possible this year, especially from North America. No doubt there has been hand-to-mouth buying, but this seems to be rather the rule than the exception. In this connection it is significant to note that it was predominatingly Argentine wheat, the cheapest among the several wheats from the principal exporting countries, that accumulated heavily in European ports in the course of the period under review; even such relatively cheap wheat could not be sold readily, and for this we see no other satisfactory explanation than that ample supplies of native European wheats were still cheaper, quality considered. The increases in tariff duties that occurred in May and July 1929 in France, Italy, and Germany probably accentuated the relative dearness of foreign wheats. The purpose of these and other changes in European tariffs is at once to raise the prices of domestic wheats and to expand their consumption at the expense of import wheats. It will not be clear until later whether these arrangements will prove effective in either or both directions.

[1] See Appendix Table V. The statement of world visibles there given differs from that shown in Chart 4 chiefly in that it includes more items for the United States, and also visibles in Argentina and Australia.

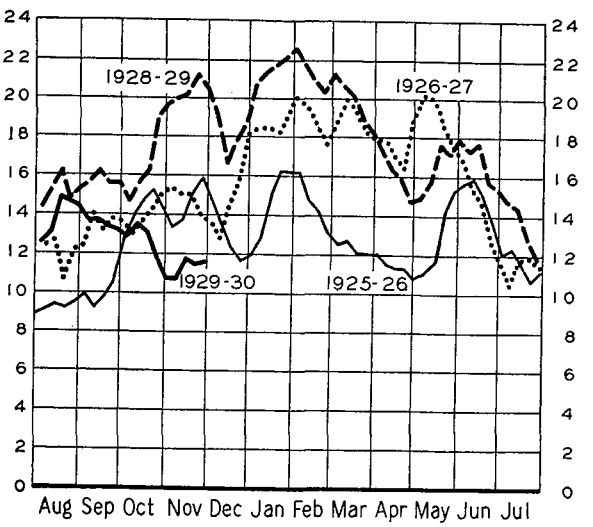
[2] See Appendix Tables VIII and IX.

Thus far in the crop year overseas shipments have only slightly exceeded those of August–November 1925. During the interval of years, population and probably per capita consumption of wheat have increased in the importing countries as a group; and for this reason it may seem in some degree surprising that shipments have not proved considerably larger in 1929 than in 1925. Yet the total supply situation in the importing countries, even considering growth in consumption, is possibly about as easy in 1929–30 as it was in 1925–26. Supplies of rye and the feed grains were ample in both years, trends considered, and perhaps may properly be regarded as sufficiently similar to warrant the assumption that the effect upon wheat requirements is much the same. The European crop of 1929 was larger than that of 1925, but probably not enough larger to keep import requirements at as low a level in 1929–30 as in 1925–26 if population and per capita consumption have increased appreciably. Yet, since the crop of 1929 is of much better quality than that of 1925, and since the carryover into 1929–30 must have been far larger than that of 1925–26,[1] Europe probably has considerably more domestic wheat available than she had in 1925–26; and it is possible that this quantity is large enough roughly to offset, in its effect upon requirements of import wheat, the growth of consumption over the interval of years. If so, the shipments of August–November 1929 are not to be regarded as abnormally small in view of requirements. Such a conclusion necessarily rests in large part upon evidence not susceptible of numerical expression; but we find no conflicting evidence that is equally convincing. The conclusion is of particular importance in its bearing on the outlook for trade, prices, and carryovers in the remainder of the crop year 1929–30, and we shall have occasion to examine it from other points of view in subsequent pages.

The course of trade during August–November is shown in Chart 5, in comparison with the movement in 1926–27 and 1928–29, when total shipments for the year were unusually large, and with 1925–26, when the total was unusually small. During August 1929, shipments were rather high for the season, probably reflecting merely the end of a crop year of extremely heavy trade. In the ensuing months shipments fell to exceptionally low levels as forward contracts were largely completed and the weight of ample supplies of native wheat in Europe came to be felt. The accumulation of port stocks was also a factor of some importance, and served chiefly to restrain the flow of wheat from Argentina in late October and November.[2] As these port stocks accumulated, incurring high costs of storage, Argentine exporters became less willing to consign their wheat unsold.

CHART 5.—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*.

DISTRIBUTION OF IMPORTS

Table 5 (p. 126), which shows Broomhall's shipments to Europe by destinations during August–November of the past five years, provides a further basis for analysis of the

[1] We know of no means of ascertaining how much larger the carryover into 1929–30 may have been. But there is good reason, in view of the comparatively small supplies of domestic import wheat in Europe and the very high prices prevailing in 1924–25, to believe that the carryover into 1925–26 must have been a decidedly small one; whereas available supplies were larger in 1928–29 and prices were low, a situation conducive to a much heavier carryover into 1929–30.

[2] See Appendix Table VII.

situation of European countries with regard to import wheat this year. Total shipments to Europe, as we have seen, were smaller than in any recent year except 1925, and were not much larger than in that year.

TABLE 5.—BROOMHALL'S SHIPMENTS OF WHEAT AND FLOUR BY DESTINATIONS IN EUROPE, AUGUST–NOVEMBER, 1925–29*

(*Million bushels*)

Destination	1925	1926	1927	1928	1929
Orders	22.3	24.9	30.7	26.1	48.7
United Kingdom	49.9	54.2	60.1	57.8	52.1
France	11.6	18.6	12.0	14.6	7.2
Belgium	17.6	17.0	24.6	18.1	14.6
Holland	15.6	23.2	30.4	29.4	11.3
Germany[a]	14.7	21.3	24.6	27.2	13.7
Italy	17.2	18.2	20.3	27.8	5.1
Greece[b]	6.1	5.3	5.0	8.0	6.1
Scandinavia	6.8	6.9	7.2	7.8	6.1
Austria[c]	4.3	5.7	4.8	5.1	6.6
Spain[d]	0.5	1.0	1.1	10.1	.6
Total	166.6	196.3	220.9	232.1	172.1

* Data for 17 weeks, from the *Corn Trade News*.
[a] Includes Poland and Czecho-Slovakia.
[b] Includes Turkey.
[c] Includes Malta.
[d] Includes Spanish colonies and Portugal.

But there were in 1929 only four destinations to which more wheat was shipped in 1929 than in 1925: to "orders," to the United Kingdom, to Austria, and to Spain. Shipments to all other destinations than these were smaller not only than they were in 1925, but also (Greece excepted) smaller than in 1926, 1927, or 1928. The striking feature of the distribution of shipments this year is the relatively large figure for shipments to orders, and the correspondingly small shipments to final destinations. The orders shipments come chiefly from Argentina. This year Argentina has shipped much more wheat than ever before during August–November, and merely for this reason shipments to orders might reasonably be expected to prove large. But the significance of such shipments is indicated more accurately by the fact that exceptionally heavy stocks of wheat have piled up in European ports for lack of buyers.

If we turn to official statistics of net imports,[1] it becomes fairly clear that buyers were by no means lacking in several important countries, and that the comparatively small European imports were due predominatingly to small takings of Germany, France, and Italy. Unfortunately net import statistics for most European countries are available only for August–October 1929; but these carry a good deal of significance.

The United Kingdom (including the Irish Free State) imported net during August–November some 95 million bushels of wheat and flour. This is a strikingly large quantity. It exceeds the figures for the same months of 1925 and 1928, when imports were relatively small, by 32 and 29 million bushels respectively; it exceeds even the exceptionally heavy imports of 1924 by 6 million; and it exceeds the average imports in August–November 1924–28 by 20 million. During August–October, Swiss net imports were larger than they had been in any year since 1924, except for 1926; the Scandinavian net imports exceeded any except those of 1928; the net imports of Holland, which vary only slightly, were of usual size. Belgium took slightly more wheat than in any of the preceding five years; the Baltic states took more than in any recent year except 1928. All of these are countries where the crops of domestic wheat constitute only a small proportion of the quantities annually consumed. It seems clear that these countries have not placed themselves in such a position that they must later in the year import far more heavily that they have done in the early months, but if anything rather the reverse. To judge by Broomhall's shipments data, this is also the situation in Austria, though net import statistics are available only for August. Among other minor importing countries, Poland,[2] Czecho-Slovakia, and apparently Spain have imported less wheat than in most other recent years; but all three of these countries harvested distinctly good crops in 1929, and Spain and Poland at least can always be expected to import very little wheat in any year when supplies of native

[1] See Appendix Table VI.

[2] Poland, indeed, has abandoned the export duties on wheat that prevailed in 1928–29, and has even established (effective November 16, 1929) export bounties of 18 cents per bushel on wheat, and 17 cents on rye. If domestic supplies are sufficiently large, the country may rank as a net exporter of wheat in 1929–30, as she did in 1925–26.

wheat are large. Broomhall's shipments data suggest that Greek imports may have been larger than in any recent year except 1928; and, since his data include shipments to Turkey, which has a much larger crop this year than last, it may be that Greece has imported rather more than in any year despite her record post-war crop.

Germany, on the other hand, has imported very little. August–October net imports totaled only 8.35 million bushels as compared with 21.53 million last year, when the domestic wheat crop was larger, and a 1924–28 average of 20.99 million bushels. In some part the imports of August–October were small because heavy importations had been made in July in anticipation of an increase in the tariff effective on July 10; and in subsequent months imports were restricted by the higher tariff on the one hand, and on the other by governmental decrees requiring millers to employ certain percentages of domestic wheat in their mix.[1] Since stocks of domestic wheat on farms had been reduced to a fairly low level by October 15,[2] and since the crop of domestic wheat in 1929 was not an exceptionally large one, it is possible that Germany may need to import rather heavily in the latter part of the crop year. But in this connection one must recall the plentiful supplies and relative cheapness of rye and the feed grains and the quality of the domestic wheat crop. These, together with the existing regulations regarding the admixture of native wheat in the mill mix, may on the one hand serve to increase the proportion of native wheat in relation to import wheat used in the mill grindings, and on the other to reduce the quantity used for feed and industry as compared with that so used in recent years. Moreover, there is now under discussion a proposal requiring millers to employ a fixed proportion of rye in their grindings of wheat flour, and if this were adopted, it would tend further to diminish the requirements of import wheat for the crop year as a whole.

Net imports into Italy were very small, only 3.64 million bushels in August–October as compared with 18.33 million in 1928, 4.95 million in 1925, and a 1924–28 average of 10.86 million. Since the Italian crop of 1929 was the largest in post-war years by a wide margin, and since the inward carryover was heavy, it is to be supposed that requirements for the crop year as a whole are notably small. The imports during August–October were possibly low even considering the small annual requirements; but it is none the less difficult for us to believe that for that reason import wheats will be avidly in demand during the immediately ensuing months, though they may well be if the crop of 1930 progresses poorly in the closing months of the crop year. France has so large a crop, added to a big inward carryover, that very small imports of the crop year as a whole are clearly in prospect, the more so because millers are required to employ in their grindings 97 per cent of domestic wheat;[3] and her takings in August–November have not been strikingly small in view of the heavy available supplies.

All told, then, the evidence to be secured through analysis of the trade statistics of individual countries goes far to suggest that, while total European imports during August–November 1929 have been small by comparison with earlier years, especially 1928, they have not been small in relation to requirements for the crop year as a whole. Hence there seems to us no convincing reason to anticipate that the winter months will witness a prolonged period characterized by a significantly more eager demand for wheat by European importers than was evident in August–November. Rather it seems probable that there will be,

[1] By decree of July 4, 1929 (effective August 1) mills were required to include not less than 30 per cent of native wheat in their grindings during the ensuing year, and 40 per cent during August–November. Later the August–November figure was raised to 45 per cent; and on October 2 another decree set forth a figure of 50 per cent for the months of October–November. Still later this figure was decreed to be maintained until January 31, 1930.

[2] See above, p. 120.

[3] This requirement was established on December 5. The large crop and low prices in France have given rise to much agitation involving proposals for ameliorating the situation of wheat producers. Various devices have been adopted to facilitate the export of French wheat and flour to other countries. During the period under review, considerable amounts of French soft flour were exported to the United Kingdom; and these, together with the appearance on British markets of considerable German wheat and flour, gave rise in England to discussion of ways and means by which the situation of British wheat producers might be improved.

as usual, short periods of alternating active and inactive demand. Some such situation as this may persist into the closing months of the crop year unless prospects for the Northern Hemisphere wheat crop of 1929 prove to be unfavorable; in this event, which cannot at present be designated as the most probable one, importers may wish to purchase heavily.

Data on ex-European trade during August–November are much less complete than for the European, and Broomhall's shipments data provide the only comprehensive information available. Table 6

TABLE 6.—BROOMHALL'S SHIPMENTS BY EX-EUROPEAN DESTINATIONS, AUGUST–NOVEMBER, 1927–29*

(*Million bushels*)

Destination	1927	1928	1929
Central America[a]	11.18	20.62	19.94
China and Japan	6.60	11.28	11.86
Brazil	8.52	9.65	10.21
Egypt	2.86	4.87	2.25
North and South Africa	1.54	2.19	.86
Chile	.06	....	....
India	.06	3.75	1.60
Syria	.15	.44	....
Peru	.11	.13	.71
Palestine	....	.13	....
Total	31.08	53.06	47.43

* Data for 17 weeks, from the *Corn Trade News*.

[a] Includes Venezuela, West Indies, Dutch East Indies, etc.

shows these shipments in the first third of the past three years; comparable data for earlier years are not available, but the comparisons afforded are of some significance because the crop year 1928–29 was characterized by exceptionally heavy ex-European trade, and 1927–28 by a relatively light movement.

Ex-European takings during the first four months of 1929–30 were smaller than in 1928–29, but not much smaller. Shipments to Egypt, India, and North and South Africa were notably smaller this year, a development only to be expected in view of their better native wheat crops. Brazil, however, has taken more. Almost regardless of fluctuations in prices, shipments to this destination have increased steadily during the post-war period, and the large shipments of August–November 1929 possibly represent a continuation of this trend. The large shipments to China probably reflect in some part the movement of wheat and flour purchased even as early as May–June 1929, when prices were very low. Such may be in part the explanation of the heavy movement to the category labelled "Central America," though, at least in so far as this includes the West Indies, one possibly needs to reckon with an upward trend not greatly affected by fluctuations in prices.

Since total shipments to ex-Europe during August–November have proved to be larger than in any other of the preceding five years except 1928, it may seem at first glance highly probable that total shipments during 1929–30 should prove larger than in any of these five years except 1928–29, and not much smaller than in that year. For several reasons, however, such an inference requires qualification. On the whole, wheat prices have been higher than they were in 1928–29, and this tends to curtail sales at least to the Orient; moreover, the Canadian crop of 1929 contains little of the cheap low-grade wheat so plentiful in 1928–29. If some of the early-season shipments to ex-Europe were made in fulfillment of old orders, it is possible for this reason alone that August–March shipments in 1929–30 may not stand as high in relation to those of 1928–29 as August–November shipments have done; and in this connection it is pertinent to observe that average weekly shipments to ex-Europe during August–September 1929 were larger than average weekly shipments in October–November, whereas the reverse was true in 1928.[1] Even into November, stocks of flour at Tientsin in North China, an important ex-European import market, remained exceptionally high, a situation tending to restrict import purchases; and the low and recently falling value of silver is an important factor making for small imports into China despite her apparently small domestic wheat crop of 1929. All told, the fragmentary evidence now available suggests that the movement of wheat and flour to ex-European destinations in 1929–30 is likely to prove not almost as large as that of 1928–29, but a good deal smaller.

[1] See Appendix Table VII; cf. WHEAT STUDIES, January 1929, V, 144.

Sources of Exports

Table 7 shows Broomhall's shipments by countries of origin, together with net exports from the four principal exporting countries, in August–November 1922–29. The striking feature of the distribution of trade by sources in 1929 was the heavy movement from Argentina, the small movement from the United States and Canada. Minor features were the large exports from the Danube countries, which in fact were considerably larger than Broomhall's data suggest; and the small exports from India. Russia shipped no wheat, as in 1928; and exports from northern Africa were rather large. Australia shipped a fairly good amount. The small requirements of importing countries were supplied in an unusual proportion by wheat from Argentina and the Danube countries, while North America furnished less than the usual proportion. The proximate cause of this was the unusual international price situation, with prices in the United States but more particularly in Canada standing abnormally high in relation to prices in the United Kingdom and Argentina.[1] Argentina, the United States, Canada, and the Danube basin all had ample supplies available for export at the opening of the crop year. The weaker holders, Argentina and the Danube basin, shipped wheat freely; the stronger holders, Canada and the United States, did not, but held instead.

Argentine net exports of about 73 million bushels were over twice as large as in any recent year except 1928, and exceeded even those of 1928 by around 33 million bushels. Extremely heavy stocks on August 1, 1929, were available to permit such exports, and the relatively low level of Argentine prices facilitated them. According to our calculations, Argentine stocks on August 1 approximated 120 million bushels, some 30 million more than the year before.[2] The fact that August–November exports in 1929 were more than 30 million larger than those of 1928 suggests that, so far as moving wheat to export rapidly is a desideratum, Argentina has this year enjoyed even a greater competitive advantage than in 1928. This advantage is made apparent by reference to prices of competing wheats in Liverpool. In the months of August and September from 1923 up to and even including 1928, either No. 2 Winter wheat from the United States or No. 3 Northern Manitoba from Canada had been cheaper than Rosafé

Table 7.—International Shipments and Net Exports of Wheat and Flour from Principal Export Areas, August–November, 1922–29*

(Million bushels)

Aug.–Nov.	International shipments (Broomhall)								Net exports from			
	Total	North America	Argentina	Australia	Russia	Balkans	India	North Africa and Chile	United States	Canada	Argentina	Australia
1922.....	218.8	183.6	24.8	7.2	....	2.4	.8	....	106.2	128.8	27.3	7.3
1923.....	222.0	151.2	32.0	14.8	8.8	10.4	4.8	....	64.3	126.2	31.5	18.0
1924.....	255.2	201.6	24.4	12.4	.4	4.0	12.4	....	149.0	76.0	26.7	14.7
1925.....	207.6	145.6	18.4	10.4	11.2	9.2	1.6	11.2	35.2	123.9	20.3	12.2
1926.....	232.8	183.2	7.2	5.6	16.0	15.2	2.4	3.2	104.8	109.3	7.8	6.8
1927.....	252.0	195.2	20.8	13.6	4.0	12.0	3.2	3.2	126.1	112.9	21.7	12.2
1928.....	284.8	213.6	35.2	16.0	....	14.0	....	6.0	74.4	189.5	39.5	17.7
1929.....	219.2	106.8	71.6	14.4	....	20.4	....	6.0[a]	66.5	69.9	73.0[b]	14.5[c]

* Shipments figures are Broomhall's cumulative totals for 17 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 VII. Net exports are official data.

[a] North Africa and India.

[b] November exports estimated from Broomhall's shipments.

[c] October and November exports estimated from Broomhall's shipments.

[1] See below, pp. 134–35.

[2] See Appendix Table X. We regard this figure as a conservative one. Estimates of the old-crop surplus remaining in Argentina on December 31, 1929, uniformly run higher than the figure of 10 million bushels which we employ in reaching our estimate of stocks on August 1.

from Argentina; but this year Rosafé was the cheapest of the three,[1] and it was naturally purchased relatively more freely by importers than was wheat from North America.

Net exports from the United States were only 67 million bushels in August–November, for the first time an amount smaller than was shipped from Argentina in these months. Net exports so small as these were striking in view of the supplies available for export in the crop year as a whole. If we subtract, from the crop plus the inward carryover, the requirements for food and seed, then the residual quantity may roughly be termed supplies available for export.[2] If we determine the percentages which August–November net exports bear to these quantities, the following figures appear for the past seven years:

Year	Per cent	Year	Per cent
1923	16.4	1927	30.5
1924	32.0	1928	15.7
1925	13.6	1929	14.4
1926	26.3		

Thus in August–November 1929 only some 14.4 per cent of the available supplies were exported, the lowest percentage in any of the seven years, except in 1925. But the situation was far different from that of 1925; for in that year only about 215 million bushels remained available for export and feed use within the country on December 1 whereas something like 385 million remained this year—the largest amount in any of the past seven years except 1928, when exports were similarly restricted in August–November.

A similarly restricted movement of wheat to export occurred in Canada. This year net exports during August–November constituted only some 24.2 per cent of the supplies available for export (crop plus inward carryover, minus quantities used for food, seed, and feed and waste), as against figures ranging from 27.5 to 37.0 per cent in the preceding six years. These percentages are as follows:

Year	Per cent	Year	Per cent
1923	32.3	1927	27.5
1924	35.5	1928	37.0
1925	34.8	1929	24.2
1926	32.4		

The low figure for 1929 is made all the more striking when we recall that the crop was harvested and marketed early. In 1927, when the proportion of the available supplies exported in August–November was also fairly small, the harvest was a late one. The net exports during August–November 1929 were only 70 million bushels, the smallest in at least eight years, and even smaller than in 1924. That exports in 1929 were smaller than those of 1924 is the more remarkable because the crop of 1924 plus the inward carryover totaled only about 320 million bushels, as against about 400 this year. Never before in post-war years have Winnipeg futures prices ruled above Liverpool futures, as they have done thus far in 1929–30; and it is for this reason that exports have been so small in relation to supplies available for export.

The export movement from the Danube basin was distinctly large in August–November. Broomhall recorded shipments of 20.4 million bushels, a larger quantity than in any of the preceding seven years. But his figure clearly understates the total movement. Official statistics of net exports[3] show that in August–October Hungary exported 11.07 million bushels, and in August–September Jugo-Slavia and Roumania exported 8.60 million. Hence even these incomplete data total 19.67 million, practically the same amount as Broomhall records as shipped from all four of the Danube countries in the four months of August–November. Total August–November net exports have probably reached 30–35 million bushels. Hungary and Jugo-Slavia have exported heavily, but Roumanian and Bulgarian exports have been small. The relatively heavy exports reflect not only a fair crop in 1929, but also a heavy inward carryover. Danubian wheat, especially from Jugo-Slavia, has appeared in many more markets of western Europe this year than ever before since the war; at times it was the cheapest wheat of comparable quality available, and at times it provided the basis for dealing in futures at Rotterdam.

[1] See Appendix Table VIII, and chart in WHEAT STUDIES, December 1929, VI, p. 67.

[2] For the data employed see Appendix Table X. We have used our adjustments of official crop estimates, as shown in Table 1, p. 112.

[3] See Appendix Table VI.

IV. WHEAT PRICE MOVEMENTS

The General Level of Wheat Prices

As usual, it is easy to compare wheat prices in August–November 1929 with prices prevailing in other years if attention is directed to a single wheat price series, but the process is a difficult one if several price series are employed. Table 8 shows August–November average prices on the international market (British parcels prices) and in three great exporting and four great importing countries. In most countries and on the international market, prices during the first four months of 1929–30 have averaged higher than in 1928–29, but lower than in any of the four preceding years. The exceptions, especially with regard to European countries, are fairly numerous. But all of them need not be considered in detail, and for present purposes it suffices to focus attention upon the price changes between 1928 and 1929.

Table 8.—Average Wheat Prices in Leading Exporting and Importing Countries, August–November, 1924–29*

(Cents per bushel)

	1924	1925	1926	1927	1928	1929
British parcels	168	163	167	155	129	138
United States	136	155	138	129	108	124
Canada	142	137	136	128	102	140
Argentina	152	159	160	142	119	121
Great Britain	152	145	158	144	126	132
France	159	151	181	159	160	147[a]
Germany	140	145	174	166	140	151
Italy	162	194	207	179	182	179[a]

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

[a] Last two weeks of November missing.

In two countries, France and Italy, prices in August–November 1929 averaged even lower than in 1928; both of these countries harvested record post-war crops and entered the crop year 1929 with relatively heavy carryovers. The price decline was more striking in France than in Italy, possibly because the available supplies of native wheat in France in 1929–30 bid fair to provide all but a trifling fraction of domestic wheat requirements, whereas the available supplies in Italy necessitate that a larger fraction of her requirements must be imported, though a smaller one than in most years. In Argentina, wheat prices in 1929 were only some 2 cents higher than in 1928; here the inward carryover was considerably larger this year, and the crop of 1929 was still unharvested. But in the United States and Canada, where inward carryovers were also large, the new crops were small. In the United States, prices averaged some 16 cents higher in August–November 1929 than in 1928; in Canada, some 38 cents higher. Roughly, one would expect some such changes as these merely because of the changes in the crops. Thus the United States crop of 1929 is about 88 per cent of the crop of 1928, the Canadian crop of 1929 only about 52 per cent of the crop of 1928, and of much better quality;[1] hence it is not altogether surprising that Canadian prices rose more than American. With Argentine prices but little higher than in 1928, it is likewise not surprising that British parcels and British domestic (also German) wheat prices rose less than the American or Canadian, only about 9 and 6 cents respectively. What is striking in the level of prices this year as compared with last is perhaps not so much the direction and differing degree of changes in particular countries, but rather the fact that the increase in what may be termed world prices, the British parcels prices, was as small as it has proved to be.

This aspect of the situation is perhaps most readily illustrated by reference to changes in the world wheat crops between particular years. Thus the world crop of 1923 (ex-Russia, China, and Asia Minor) was a big one, some 3,550 million bushels according to estimates of the United States Department of Agriculture; and British parcels prices were low, averaging $1.21 per bushel in August–November 1923. The next

[1] The better quality is of particular importance with regard to the increase in Canadian prices. We are here considering the change in a four-month average of weekly weighted average prices. This year there is little relatively cheap low-grade wheat to bring down the weighted average. The August–November average price of No. 1 Northern Manitoba at Winnipeg was $1.20 in 1928 and $1.45 in 1929, an increase of only 25 cents.

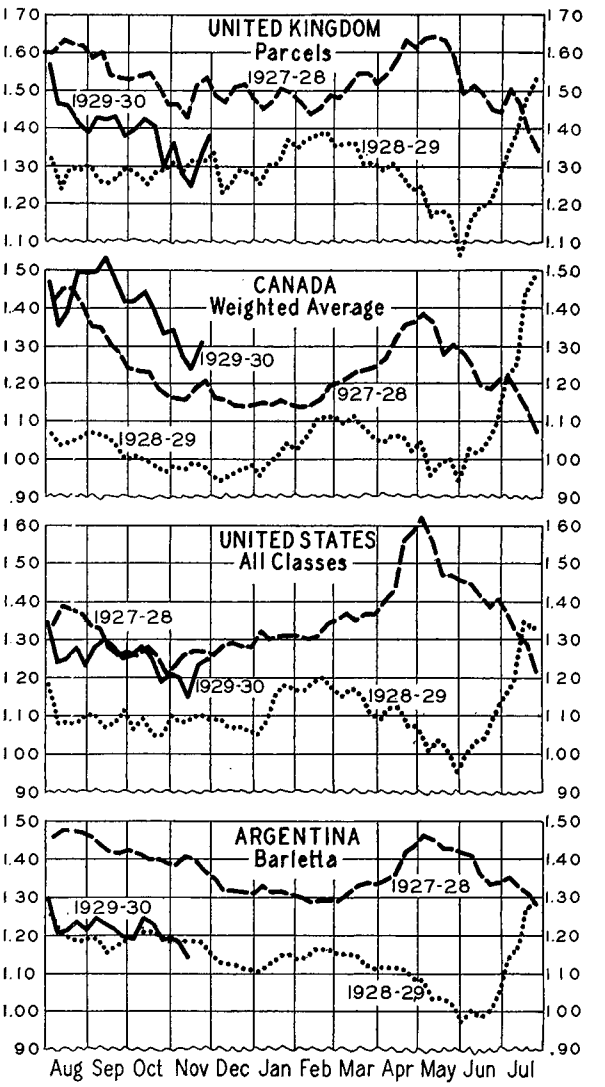
crop, that of 1924, was a short one, some 3,150 million bushels or 400 less than that of 1923; and British parcels prices averaged $1.68 per bushel in August–November 1924, some 47 cents more than the year before. The change in world crop between 1928 and 1929 was roughly comparable with the change between 1923 and 1924. The world crop of 1928 was large, some 3,940 million bushels; British parcels prices in August–November 1928 were low, averaging $1.29 per bushel. The crop of 1929 now seems to approximate only about 3,415 million bushels; it is some 530 million smaller than the crop of 1928. This is an even greater reduction than occurred between the crops of 1923 and 1924, and it is this fact that makes the increase of only 9 cents in August–November averages of British parcels between 1928 and 1929 look surprisingly small, especially as compared with the increase of 47 cents between 1923 and 1924.

Traders all over the world, but perhaps especially in North America, have focused their attention upon the striking reduction in the world crop between 1928 and 1929; and it is certain that this reduction was the factor that has led so many people, both traders and observers, to expect prices in 1929–30 to rule far higher than in 1928–29 rather than only moderately higher. The extent to which such expectations have been disappointed is hardly indicated by the averages of August–November prices shown in Table 8. Chart 6, showing weekly average prices in several markets since August 1927, lends emphasis to the fact that, while on the average during August–November 1929 British parcels prices stood higher than in 1928, they were but little higher indeed in parts of October and November, and at times were even lower. Thus, even in the face of a short world wheat crop, prices tended for the most part downward in the months immediately succeeding the opening of the crop year 1929–30 and expectations of a drastic increase even from the level of August and September were seriously disappointed.

It is, of course, impossible to ascertain which or how many traders or observers, in which countries, most confidently anticipated in the early weeks of the year that some such increase as this was pretty certain to occur. That such expectations were common is abundantly in evidence, however, in various trade journals in North America. The view at least of some workers in the United States Department of Agriculture was expressed as follows on September 16, 1929: "While the course of prices through the remainder of the season may not correspond exactly with the course of prices in the 1924–25 season, the situation now seems to be such that a similar move-

CHART 6.—WEEKLY AVERAGE PRICES OF WHEAT IN LEADING EXPORTING AND IMPORTING MARKETS, FROM AUGUST 1927*

(U.S. dollars per bushel)

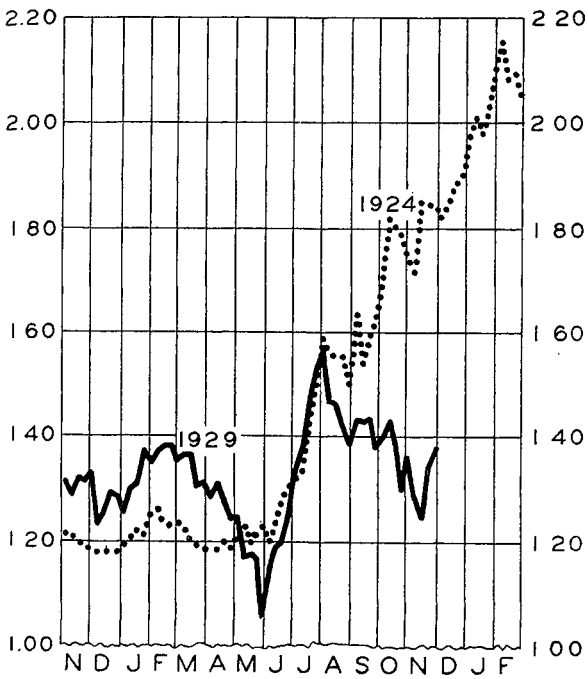


* For sources, see Appendix Table VIII.

ment for the remainder of the season may be expected. Larger supplies in Europe, however, may prevent prices from rising as high or as rapidly through the fall months as in 1924."[1] Chart 7 is inserted to illustrate how far different the movement

CHART 7.—WEEKLY AVERAGE PRICES OF WHEAT PARCELS IN BRITISH MARKETS, NOVEMBER 1923 TO FEBRUARY 1925, AND FROM NOVEMBER 1928*

(U.S. dollars per bushel)



* Averages of sales from *London Grain, Seed and Oil Reporter.*

of prices has proved to be from what was anticipated in this forecast. In passing, it is of interest to observe that on September 16 the United States Department of Agriculture's statistical set-up of the international wheat position was interpreted to suggest a July–June average British parcels price of $1.68 to $1.73 cents per bushel for 1929–30, about like the averages for 1925–26 or 1924–25. On October 21, a probable range of $1.64 to $1.68 was suggested; on November 18, a probable range of $1.50 to $1.60.[2] These progressive reductions in the forecasts, amounting to 16 cents if one averages the ranges stated, can hardly have been due entirely to changes in the estimated world available supply for 1929–30, for the Department's figure stood only 36 million bushels higher on November 18 than on September 16; and according to an earlier interpretation it would require an increase of about 100 million bushels to alter the indicated price by 14 cents.

Some of the reasons why such reductions as these had generally to be made seem to be inherent in the statistical set-ups upon which the predictions rest. In the first place, probably no set-up can be devised to give adequate quantitative expression to world carryovers of wheat from one year to the next. Nobody knows precisely what carryovers in Europe have been in recent years. But in our judgment there is good reason to believe that the European (particularly the Danubian) carryover into 1929–30 was an exceptionally large one; and it is probable that a set-up including the European carryover would yield a lower forecast of average prices than one not including it. Again, many set-ups involve the assumption that the distribution of wheat supplies between countries is unimportant in its effect upon the United Kingdom price. Perhaps this assumption is sound; yet it is interesting to speculate whether, if Argentina had had 50 million bushels less of wheat in her inward carryover, and the Northern Hemisphere 50 million bushels more scattered among various countries, prices thus far in 1929–30 might not have proved higher than in fact they did; for it seems clear that the pressure of heavy Argentine shipments during August–November had a good deal to do with the weakness of prices. Finally, it is hard to devise a set-up so constructed that quantitative weight is given to such phenomena touching the wheat price situation as the changes in the quality of wheat crops, the position and prices of rye and the feed grains, the psychological effect of upheavals in the securities markets, changes in the general level of wholesale prices, and doubtless others as well.

As it happens, all of these last four factors not ordinarily included in statistical set-ups have this year worked together to keep the actual level of British parcels prices in 1929–30 considerably less high in

[1] *Foreign News on Wheat,* September 16, 1929, p. 3.

[2] See issues of *Foreign News on Wheat* for the dates indicated.

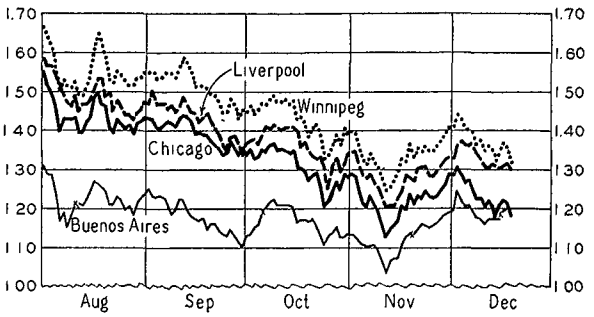
relation to that of 1928–29 than most set-ups would lead one to believe they ought to be. The feed grain position in Europe was relatively tight in 1928–29 and is relatively easy in 1929–30; the quality of the world crop turned out to be distinctly good, especially in Europe; securities prices crashed sharply in the United States, exerting some degree of influence on wheat prices; and wholesale prices of all commodities stand in many countries lower this year than in 1928–29. If we add to this the probability that the world carryover of wheat into 1929–30 exceeded the carryover into 1928–29 by a considerably larger amount than the incomplete statistical data suggest; to this the fact that stocks at the opening of the crop year happened to be huge in Argentina, a country where the facilities for holding and the disposition to do so are not so well developed as they are in North America; and to this again the fact that the wheat crops of 1929 now appear to be somewhat larger than they seemed to be a few months ago; then the average level of British parcels prices that has prevailed does not seem so strikingly low in spite of the short world wheat crop of 1929. In 1928–29 various factors not readily amenable to quantitative expression in a statistical set-up of the wheat position seem to have combined to maintain British parcels prices above the level to which they might otherwise have sunk; but this year similar factors seem to have combined to depress prices below the level to which they might otherwise have risen.

The Course of Prices

The course of prices may best be followed by reference to futures prices in the world's leading markets. Chart 8 shows daily closing prices of the December future in Winnipeg, Liverpool, and Chicago, and of successive futures in Buenos Aires. In all four markets the day-to-day fluctuations were wide and erratic, a reflection of the extreme speculative activity engendered by an extraordinary cleavage of opinion regarding the outlook, and by the numerous uncertainties in the wheat situation, one of which was the weakness in the securities market. In August, October, and November 1929, the average daily volume of futures trading in United States markets was considerably higher than in the same months of any of the six preceding years; in September, however, trading was a little less active than in 1925.[1] Thus far the year 1929–30 ranks with 1924–25 and 1925–26 as one characterized by notably active speculation, probably in other countries as well as in the United States.

Chart 8.—Course of Wheat Futures Prices in Leading Markets, August–December 1929*

(*U.S. dollars per bushel*)



* Data from *Daily Trade Bulletin*. December futures in Liverpool, Winnipeg, and Chicago; August, October, November, December, and February futures in Buenos Aires. The × indicates a change in future.

The Winnipeg December future has sold at higher prices than the Liverpool December throughout the period under review, an unprecedented occurrence. The Chicago–Liverpool spread has also been unusually narrow, at least for a year in which available supplies in the United States bulk large.[2] The situation with regard to the Winnipeg-Liverpool price relationship cannot be attributed wholly to the relatively short Canadian wheat crop of 1929 or to its good quality. These were probably factors of some importance; but it is necessary to recall that the crop of 1924 was still

[1] The data are as follows, in million bushels:

	August	September	October	November
1923	31	28	30	27
1924	50	43	61	61
1925	60	59	60	65
1926	47	46	44	53
1927	42	37	37	35
1928	42	34	35	33
1929	84	58	67	75

[2] Fairly narrow Chicago–Liverpool spreads prevailed in most of 1923–24 and 1925–26, also in the latter part of 1927–28 and most of 1928–29. It is only since February 1929, however, that the spread has seemed strikingly narrow in view of the supplies of wheat available for export.

smaller, though not of as good quality, but did not result in such a situation. The major reasons are that Argentina had much more wheat than usual to sell, and at a time when Canada had only a moderate quantity; and owners of wheat in Argentina were more willing to part with it at prevailing prices than were Canadian holders.[1] Undoubtedly the small import requirements for the year were an important factor in the situation; for unless these had been small, Argentine shipments could not so readily have satisfied the demand, prices would have risen to higher levels, and with the rise a price readjustment would have probably occurred that placed either Canada or the United States or both in a position to export more freely from the ample supplies available for export. Holders of wheat or wheat futures in North America seem to have expected a distinctly high level of world wheat prices to prove characteristic of the crop year 1929–30; apparently Europeans have not envisaged so high a level as the appropriate one. The cleavage of opinion was in fact notably sharp. The difference appears most clearly with respect to what import requirements may be for the crop year 1929–30. Thus, for illustration, Broomhall on October 23 estimated import requirements for the year at 696 million bushels; on November 30 the general sales manager of the Canadian Pool stated that this estimate was much too low, and advanced an estimate of 770 million bushels. Of course it is impossible accurately to summarize the divergent views held by the traders in North America and in Europe who "take a position" on the market. Yet it seems fairly clear that in North America many have believed that import requirements could be satisfied only with difficulty and at high prices if carryovers should stand at an average level at the end of the year; whereas Europeans have inclined to the opinion that the requirements could be filled without particular difficulty, and outward carryovers left at least at average levels.

Other factors aside from divergent views on import requirements merit brief comment. Perhaps the Pool has supported Canadian prices in a manner that would not have been possible in its absence. Perhaps the Federal Farm Board has exerted a similar influence in the United States, not only by means of statements but by means of the announcement of loans to co-operative associations and of basic prices at which loans would be made available to farmers.[2] For the present we see no way of adjudging the effectiveness of these organizations with any precision; one cannot determine whether or not the international price relationships that have prevailed in their presence would have prevailed in their absence. It is impossible to say whether or not Winnipeg prices would have ruled above Liverpool prices if the Canadian crop of 1929 had been 50 million bushels larger, or if rainfall had been abundant rather than scanty in the autumn months, thus making for a more favorable outlook for the crop of 1930. Yet it seems reasonable to conclude that these organizations did a good deal to encourage holders of wheat and wheat futures in North America, and contributed to the extraordinary international wheat price structure. But this is not to say that their influence was more noteworthy than was the existence of heavy stocks in Argentina, or the several circumstances that made for lessened import requirements in 1929–30. The Pool and the Federal Farm Board were not the painters of the picture so much as they were parts of the necessary background.

One other feature of the spreads between futures prices in different markets merits brief comment before we consider the general course of prices. The Liverpool–Buenos Aires spread appears in Chart 8 to have narrowed appreciably in the course of the period under review, especially during October and November. In some degree this narrowing was more apparent than real, on account of the fact that the chart shows the

[1] For an analysis of the reasons why Argentina is characteristically a weak holder of wheat, see WHEAT STUDIES, December 1929, VI, pp. 66–67.

[2] On October 26, the Federal Farm Board stated that it would loan to qualified wheat co-operatives approximately $100,000,000 available for the purpose, possibly more, and set forth the loan basis prices. On December 20, the newly formed Farmers' National Grain Corporation posted bids at Chicago for wheat at the loan basis prices announced earlier by the Federal Farm Board. These developments were coincident with sharp upturns in futures prices, and may reasonably be supposed to have caused them in considerable part.

course of the December future in Liverpool, but (by necessity) of successive futures in Buenos Aires. In the first week of October, for example, the spread between the Liverpool December future and the Buenos Aires October future, as shown on the chart, was 22.2 cents; but the spread between the Liverpool October future (not shown on the chart) and the Buenos Aires October future was 16.1 cents. In the first week in December the spread between December futures in both markets was 14.8 cents. There was a greater spread in August than in October, for the spread in the third week of August between the October futures in both markets was 20.7 cents, whereas this spread was only 16.1 cents in the first week of October. Thus it is clear that Buenos Aires futures prices tended to rise in relation to Liverpool futures prices, though not in so marked a degree as the chart suggests. That it occurred at all was possibly a reflection of the fact that Liverpool prices showed independent weakness on account of the huge stocks of Argentine wheat that were accumulating in England; but it was probably due chiefly to the fact that ocean freight rates from Argentina to Liverpool declined sharply during the period under review.[1]

If we disregard for the moment numerous minor movements, some of them of considerable magnitude, the course of prices during August–November may be said to have displayed three main phases. There were erratic fluctuations around a fairly high level during August and the first half of September; an interrupted decline from mid-September to November 12; and a sharp upswing during the remainder of November. This upturn culminated on December 4, and was followed by a sharp decline which on December 20 brought prices almost to the low point of November 12.

During August and early September, the dominating influences upon prices (aside from changes in the technical position of the market, which appear throughout the whole of the period under review to have exerted a good deal of influence) were on the one hand the rapid marketing of wheat in the United States, the concomitant sharp increase in North American visible supplies, the prevailing lethargy of European demand together with accumulating evidence that the European crop was a very large one, and the continuation of heavy shipments from Argentina; on the other, reports of drought in Argentina and of low yields in Canada. It was in early August that heavy marketings in the United States seem to have exerted their greatest influence, though at this time rains in the North American spring-wheat belt contributed to the sharp break in prices between August 1 and August 7. Perhaps the Federal Farm Board, which on August 7 advised farmers to hold their wheat, served to arrest this decline. The very sharp upturn of prices between August 14 and 17 seems to have been due largely to news of poor threshing returns in the North American spring-wheat belt; but at this time receipts at primary markets in the United States slackened, export and mill demand seems to have become more active, and a good deal of attention was paid to the continued drought in Argentina. After August 17, the combined effect of growing visible supplies in North America and congestion at terminals, together with reports of big crops in Europe, served about to offset the continuing drought in Argentina.

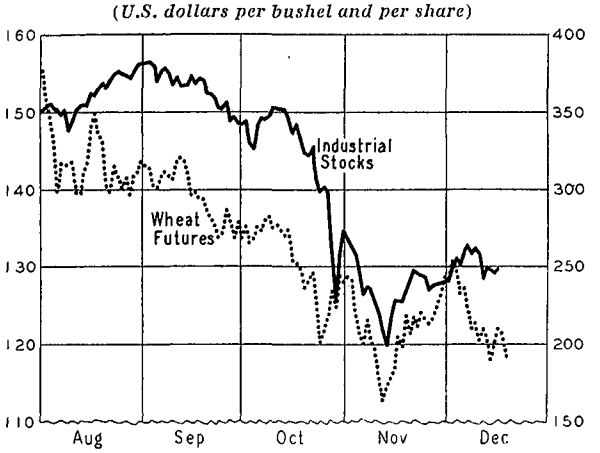
The interrupted decline from September 14 to November 12 appears to have been due largely to improvement in Argentine crop prospects and weakness in the securities market in the United States, though the heavy visible supplies in North America and the small demand from Europe were also influential. It is impossible, of course, to determine precisely what factors dominated the sentiment of traders at particular times. Chart 9, however, is of some interest in illustrating the relation of the break in stock prices to the wheat market. This chart shows the course of the Chicago December wheat future in relation to the course of the Dow-Jones average of stock prices (industrials). Apparently it was not until about mid-October, when stock prices weakened notably, that the securities markets began to exert a striking influence upon the wheat futures markets.

[1] According to Broomhall's data, the freight rate in August averaged roughly 16 cents per bushel, but only 10.6 cents in November.

Thereafter, perhaps until about the middle of November, wheat prices seem to have moved fairly closely with stock prices, though even in this period there were days when the two markets moved in opposite directions. Prior to mid-October, and especially during the last half of September, the movement of wheat prices appears to have been dominated by reports from Argentina.

CHART 9.—COMPARISON OF CHICAGO DECEMBER FUTURE PRICES WITH AVERAGE STOCK PRICES, AUGUST–DECEMBER 1929*

(U.S. dollars per bushel and per share)



* Futures prices from *Daily Trade Bulletin*, Chicago. The stocks prices are the Dow-Jones averages of 30 industrials, compiled from *Chicago Journal of Commerce*.

The drought in that country was broken on September 14. The general decline in wheat prices from September 14 to November 12 was interrupted by two bulges, one in early and one in late October. The former seems to have reflected temporarily increased demand from Europe, together with some unfavorable reports from Argentina; the latter, in so far as it was not due to Argentine crop news and a technical reaction, perhaps reflected in some degree the Federal Farm Board's announcement on October 26 of its plans for loans to wheat co-operative associations.

The upward movement from November 12 to December 4 was apparently dominated by the stream of reports from Argentina depicting the spread of rust infestation in that country. These reports seem to have caused European importers to purchase more heavily than before, and this contributed to the rise. The rise was coincident with relative firmness in the securities markets; and in the United States the heavy discounts of cash wheat prices under futures prices had diminished as storage facilities became less congested.

The upswing of late November was followed by a decline almost as extensive, apparently induced by relaxation in the demand of importers, together with a rather sudden cessation of the unfavorable reports from Argentina. On December 20 the Chicago December future fell to 116 cents per bushel, only three cents above the low point reached on November 12. From this point there was a sharp upturn, induced in part by offers of the Farmers' National Grain Corporation to buy wheat, and in part by the sensationally low official estimate of the Argentine crop.

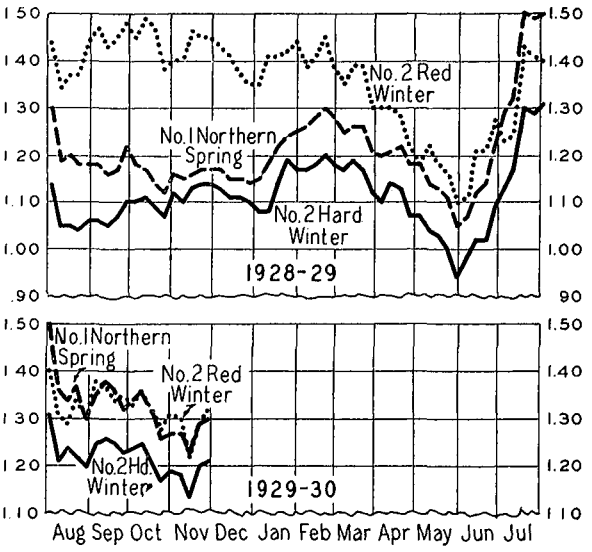
A striking feature of the situation in futures prices was the relatively wide spreads between the near and the distant futures, the distant standing at high premiums. In Chicago on December 2 the price of the May future was 11 cents higher than that of the December future; the spread was 7.5 cents on December 1, 1928, and this was a notably wide one. In Winnipeg on the same dates, the May stood 8.1 cents above the December in 1929, and 6.8 cents above in 1928. In Liverpool the contrast is much more striking: this year the May stood 14 cents above the December, whereas last year it stood only 1.8 cents above. The factors that govern these spreads are different in the several markets. In the United States and Canada, the larger spread this year may be taken to indicate the consensus among traders that larger stocks are to be carried through the winter. In Liverpool, where the December future is usually a Northern Hemisphere crop option, and the May future a Southern Hemisphere crop option, the December future this year was essentially a Southern Hemisphere crop option. It was depressed below the May future because of the exceptionally large supplies immediately available of old-crop Argentine wheat, and the prospect of relatively small supplies in the spring.

UNITED STATES CASH PRICES

Chart 10 (p. 138) shows weekly weighted average cash prices of important grades of wheat in the United States during 1928–29

CHART 10.—WEEKLY AVERAGE CASH PRICES OF TYPICAL WHEATS IN UNITED STATES MARKETS, FROM AUGUST 1928*

(U.S. dollars per bushel)



* No. 2 Red Winter at St. Louis, No. 2 Hard Winter at Kansas City, and No. 1 Northern Spring at Minneapolis. Data from *Crops and Markets*.

and the first four months of 1929–30. The different relationships among the three price series that have prevailed this year as compared with 1928–29 reflect changes in the relative size of crops. Thus No. 2 Red Winter wheat sold at high premiums in the early months of 1928–29 because the crop of soft red winter was relatively small in 1928, but relatively large in 1929. In November 1928 No. 1 Northern Spring sold for smaller premiums over No. 2 Hard Winter than prevailed in November 1929, a reflection of the relatively smaller spring-wheat crop this year. It is interesting to observe that the high premiums on No. 1 Northern prevailing in July 1929 were considerably reduced in the following months as the prospects for the spring-wheat crop showed considerable improvement. The price of No. 2 Amber Durum wheat, not shown on the chart, behaved somewhat like the price of No. 1 Northern Spring. Thus in August–October 1929, No. 2 Amber Durum sold for higher prices than No. 2 Hard Winter; but in the month of November, at lower prices.

V. OUTLOOK FOR TRADE, CARRYOVERS, AND PRICES

Certain aspects of the world wheat situation in 1929–30 have been made moderately clear by the developments during August–November. The statistical position now appears to be a fairly tight one, but certainly not so tight as those of 1924–25 and 1925–26. Import requirements now seem to be distinctly small; but export surpluses, especially in the Southern Hemisphere, are not large. Because of the small import requirements, the volume of international trade will presumably prove to be one of the smallest in recent years. Importers will probably be able to fill their requirements without reducing the carryovers in North America even to an average level. Carryovers in the aggregate, however, will almost certainly prove much smaller than they were at the close of 1928–29. Erratic fluctuations in wheat prices seem to be in prospect in the immediately ensuing four months, but we see no convincing reason to anticipate, in these months at least and in the absence of striking changes in new-crop prospects, a sustained and extensive advance in cash wheat prices on the international market from the average level of September–December, when British parcels prices averaged approximately $1.38 per bushel. A moderate increase from this level, however, is not improbable; and there seems to be little reason to anticipate a severe or prolonged decline. Possibly the prevailing relationships between futures prices in North America will be altered so as to permit a freer flow of wheat to export; but such a development as this may be postponed until the closing months of the crop year. Developments in trade, carryovers, and prices alike, as is inevitable at the time of writing, cannot now be anticipated with much assurance because the new-crop developments in the spring must be expected to exert a profound influence. In the following pages we assume that new-crop prospects will prove neither strikingly favorable nor strikingly unfavorable.

THE VOLUME OF TRADE

In earlier pages we have set forth our view that import requirements for the crop

year 1929–30 are relatively small, and have stated that the volume of trade actually recorded in the first third of the crop year seems to us properly to be regarded not as exceptionally small or large in view of requirements, but as approximately normal.[1]

In recent years the volume of trade (Broomhall's shipments) transpiring in August–November has constituted from 28.6 to 35.7 per cent of the shipments finally reported at the end of the several crop years. The precise figures are as follows:

1921–22	33.6	1925–26	31.1
1922–23	32.3	1926–27	28.6
1923–24	28.6	1927–28	31.8
1924–25	35.7	1928–29	30.7

It is to be noted that the highest percentage of August–November shipments to total shipments appeared in 1924–25, a year when the European crop was very short and panicky buying occurred in the earlier part of the year. The lowest percentages appeared in 1923–24 and 1926–27. In 1923–24 very low prices prevailed in mid-winter, the season when Oriental purchases are normally heaviest; and that year, moreover, contained 53 weeks, so that the 17-week shipments in August–November formed a rather smaller proportion of the year's shipments for this reason alone. In 1926–27, the small percentage of the year's total shipped in August–November was clearly the result of an extreme bulge in ocean freight rates that occurred in the early months of the crop year. There seems to be good reason, then, for regarding all three of these crop years—1923–24, 1924–25, and 1926–27—as far different from the present year. An average of the percentages of August–November shipments to yearly total shipments in the remaining five years is 32 per cent (31.9 per cent, to be precise). We are disposed to assume that this figure, taken in conjunction with the volume of trade that has already transpired in August–November 1929, provides as satisfactory an indication as any of the total shipments that are likely to be made in 1929–30, for one reason because the aggregate movement of wheat and flour in international trade, at least within the crop year, is one of the most stable elements in the world wheat situation. August–November shipments totaled some 219 million bushels; if these are to constitute 32 per cent of the year's total, the total must reach a little less than 685 million bushels. Total net exports always exceed Broomhall's shipments; hence total net exports in 1929–30 may approximate 720 million bushels. This figure we regard as about the middle of the probable range, not the minimum or the maximum. Net exports were somewhat smaller than this in 1921–22, 1922–23, and 1925–26, but were larger in all other years of the past eight. In 1928–29 they reached 940 million bushels, some 220 million bushels more than our tentative estimate for 1929–30; and in 1927–28 they were nearly 100 million bushels more.

To anticipate net exports of only 720 million bushels more or less will possibly seem unreasonable to some North American commentators on the world wheat situation. Such an estimate rests, of course, in part upon our analysis of import requirements, which differs from many others by reason of the importance which we feel impelled to ascribe to the inward carryover in Europe and the ample supplies of the feed grains and rye. Here it is desirable to point out further that import requirements in 1929–30 can be satisfied in some part by a reduction of the stocks which were afloat for Europe at the opening of the crop year, and of stocks of Canadian wheat in store at that time in lake and Atlantic seaboard ports of the United States. Both of these categories of stocks were recorded in the net exports of 1928–29; and the amount by which they may be reduced in 1929–30 goes also to reduce the net exports of 1929–30.[2] A reduction of these stocks implies also that net exports in 1929–30 will fall below those of 1928–29 by an amount greater than the probable reduction of net imports in 1929–30 as compared with those of 1928–29.[3]

[1] See above, pp. 125–127.

[2] This, of course, is true of Broomhall's shipments only with regard to the stocks afloat for Europe.

[3] Since annual net import statistics can never be reconciled with annual net export statistics, we make no attempt to estimate the probable net imports of different countries. By comparison with the recorded net imports of 1928–29, we anticipate that the figures for 1929–30 will show the most striking reductions with regard to the net imports of India, China, Egypt, South Africa, and Asia Minor among the ex-European countries; and of Spain, France, Italy, and the Scandinavian and Baltic countries in Europe.

Sources of Probable Exports

It is next of interest to inquire whence net exports of some 720 million bushels are likely to be drawn. The principal difficulty in appraising this matter seems to lie in formulating an opinion regarding the quantities likely to be exported from Canada and the United States respectively. The prospects may be somewhat clarified if we consider first the situation in other exporting countries than these.

Perhaps approximately 75 million bushels may be exported net from the four countries of the Danube basin. This is a high figure as compared with earlier years; during the preceding seven years, the largest net exports, 45 million bushels in both years, were made in 1925–26 and 1926–27. In those years international wheat prices were higher than they have been thus far in 1929–30. Nevertheless several aspects of the situation in this region suggest that decidedly heavy net exports are probable. First is the fact that they have already been larger than in any recent year. Further, the wheat crop of 1929 was apparently the second largest since the war; the inward carryover was in our judgment a distinctly big one; and the feed grain crops of 1929, especially corn, were notably large. All told, net exports of 75 million bushels more or less seem reasonably in prospect, especially if international wheat prices should increase from the average level of September–December.

The exporting countries of northern Africa may furnish around 15 million bushels from their large crops. Probably India will be a net importer for the year as a whole, though much depends upon the outcome of the crop of 1930. Despite recent exports, Russia probably need not be regarded as a significant source for the crop year as a whole.

Our preliminary estimates of the disposition of wheat crops in the four leading exporting countries in 1929–30 appear in Appendix Table X, which includes much of the data upon which the discussion in the following paragraphs is largely based. Australia is apparently in a position to export net some 70 million bushels. December–July net exports averaged 58 million bushels for the four years 1922–23, 1923–24, 1925–26, and 1927–28; in these years the average crop was 117 million bushels, or only about 5 million larger than the crop of 1929. Since some 15 million bushels had been exported in August–November 1929, around 70 million bushels would appear to be a reasonable estimate of the net during the whole of the crop year. Exports of this size would leave stocks on August 1, 1930, of approximately 38 million bushels, at least if, as seems probable, the stocks on August 1, 1929, were about 45 million bushels. Year-end stocks of 38 million bushels on August 1, 1930, would almost exactly equal the average August 1 stocks of the five preceding years.

The prospects for Argentine net exports are necessarily obscured because of the uncertainties surrounding the size and quality of the crop of 1929. In the following calculations we assume that the crop approximates 200 million bushels and is good enough in quality for European millers to be able and willing to use; and we also assume that Argentina alone among the leading exporting countries may be expected to export wheat as freely as importers will take it[1] and as the shipping facilities permit. The crops of 1922, 1924, 1925, and 1926 averaged 200 million bushels; December–July net exports following these crops averaged 105 million bushels, a figure somewhat lower than it would have been if the crop of 1925 had not been of very poor quality. Hence December–July net exports in 1929–30 of 105 million bushels would not appear unreasonable to expect; and since August–November exports have reached 73 million bushels, the total for the year might approximate 178 million. Net exports of this size might result in slightly smaller stocks on August 1, 1929, than appear to have remained in Argentina in any of the past six years (unless our estimate of stocks on August 1, 1929,[2] is too low, as seems probable); accordingly we employ a somewhat smaller figure, 170 million bushels, but regard it as a moderately conservative one if the crop of 1929 reaches 200 million bushels. With allowance for domestic utilization, stocks of about 60 mil-

[1] The recently concluded D'Abernon convention between Great Britain and Argentina may be expected to facilitate the flow of wheat from Argentina.

[2] See Appendix Table X.

lion bushels, equal to the average for 1924–27, could remain in Argentina on August 1, 1930; but such stocks would be much smaller than the abnormally large ones of 1928 and 1929, which seem to have been approximately 90 and 120 million bushels respectively. If the Argentine crop of 1929 actually reaches only about 150 million bushels, Argentine net exports during 1929–30 must fall well below 170 million bushels, but probably not as much as 50 million bushels below. Our calculations include a conservative estimate for the inward carryover and a fairly liberal one for the outward carryover.

Thus far, then, it seems reasonable to suppose that about 330 million bushels may be exported net from the Danube basin, northern Africa, Australia, and Argentina in 1929–30. If total net exports are to approximate 720 million bushels, some 390 million must be exported from the United States and Canada.

There is not much doubt that net exports in this amount could be supplied without reducing the outward carryover of either country to the average level of 1923–28. On the other hand, there is not much doubt that net exports of 390 million bushels must result in a carryover out of 1929–30 considerably smaller than the inward carryover, in one country or the other or in both. In the United States, the crop of 1929 plus the stocks on July 1, 1929, approximated 1,069 million bushels. One may estimate the quantity of wheat likely to be used domestically for food, seed, and feed and waste at about 680 million bushels; hence about 389 million bushels seem to be available for export and carryover. The average carryover in 1923–28 was 138 million bushels. Hence about 251 million bushels could be exported in 1929–30 and a carryover of average size retained at the end of the crop year; but this carryover would fall about 124 million bushels below the huge carryover of July 1, 1929. In Canada, the crop of 1929 plus the stocks on August 1, 1929, equaled some 398 million bushels; domestic utilization for food, feed, and feed and waste for the crop year may be estimated as about 110 million; hence some 288 million bushels seem to be available for export and carryover. The average carryover in 1923–28 was 46 million bushels, so that around 242 million bushels could be exported in 1929–30 and a carryover of average size retained; but this carryover would fall 58 million bushels below the huge one of August 1, 1929. Thus, if the North American carryover out of 1929–30 is to be of average size, something over 490 million bushels seem to be available in both countries to supply exports of some 390 million. If Argentina proves to be able to furnish some 30 or 40 million bushels less than we have assumed, then North America would be called upon for some 420–430 million bushels. This quantity also can be exported without reducing the outward carryover to the average level of 1923–28.

Net exports from Canada and the United States together totaled some 136 million bushels in August–November 1929 — approximately a third of the quantity that seems likely, at least on such grounds as have been set forth above, to be exported in the course of the crop year. If in the remaining two-thirds of the crop year some 255 million bushels are to be exported net, the usual seasonal movement of net exports from both countries must be considerably modified. Thus some 66 per cent of the year's net exports from the two countries combined must be made in the last eight months of 1929–30; but, over the period 1921–22 to 1928–29, December–July exports from Canada have averaged only 59 per cent of the yearly totals, and from the United States only 47 per cent. To state the matter in another way, the reported net exports from the United States and Canada in August–November, taken in conjunction with the average post-war seasonal movement, suggest that the United States may export net in December–July only about 59 million bushels, and Canada only about 100 million—a total of 159 in these months as against our estimate of 255 million. We are disposed to believe, in short, that the average seasonal movement will in fact be disturbed,[1] and that this will

[1] This is suggested partly by the futures price relationships prevailing in December 1929. Ordinarily the spreads in December between December futures in North America and Liverpool are considerably wider than the spreads in December between the May futures. This year, however, the situation is altered, principally because the May future at Liverpool has been selling at a more exceptional premium over the December than is true in Chicago or Winnipeg.

necessitate at some time in the ensuing eight months a change in the August–November relationships between Chicago and Liverpool and/or Winnipeg and Liverpool futures prices.

We know of no statistical device through which it is possible to foresee approximately, in the event of net exports of some 390 million bushels from North America, how much is likely to go from Canada, how much from the United States. To anticipate these figures with any precision predicates foresight as to whether it will be the Chicago-Liverpool or the Winnipeg-Liverpool futures price relationship that changes first and more sharply. The timing and extent of any adjustments that may occur probably depend very largely upon sentiment, and alterations in this factor are hardly to be foreseen. Since, however, the steps necessary to be taken in order to change the Chicago-Liverpool relationship seem to be less extreme than those required to alter the Winnipeg-Liverpool relationship, and also because the outlook for the crop of 1930 will be clarified earlier in the United States than in Canada, we are disposed to guess that the adjustment between Chicago and Liverpool may come first, and hence that the average seasonal movement of net exports from the United States will be departed from more radically than the Canadian. On this assumption one may envisage total net exports from the United States in 1929–30 as approximately 180 million bushels, from Canada as about 210 million. These figures compare with estimates based upon the average seasonal movement of 126 million from the United States and 170 million from Canada.

Table 9 brings together our tentative estimates of net exports in August–July 1929–30, in comparison with Broomhall's estimates of probable shipments and the United States Department of Agriculture's estimates of July–June net exports. In general our estimates agree better with Broomhall's than with the Department's, though we anticipate a larger movement from Australia and the Danube countries, and a smaller one from Canada.

Our estimates, of course, are to be regarded as approximately the middle points of rather wide ranges, though the estimate of total net exports is in our judgment rather above than below the middle of the range. The events of earlier post-war years seem not to constitute a distinctly dependable guide to probable developments in 1929–30, when the world wheat situation is certainly characterized by many unusual or unprecedented features.

TABLE 9.—NET EXPORTS OF PRINCIPAL EXPORTING COUNTRIES IN 1928–29, WITH FORECASTS FOR 1929–30*

(Million bushels)

Exporting area	Net exports 1928–29	Forecasts for 1929–30		
		U.S.D.A. Dec. 20	Broomhall Nov. 27	F.R.I. Dec. 28
United States...	150	230–250	176	180
Canada	406	220–240	232	210
Argentina	224	195–210	176	170
Australia	109	65–75	56	70
Russia	...	0	...	...
Danube basin[a]..	37[b]	40–59	40	75
India	...[c]	0	...	...[c]
Others	14	0–5[d]	16	15[e]
Total	940	750–839	696	720

* Net export data are from official sources and International Institute of Agriculture; U.S. Department of Agriculture forecasts from *Foreign News on Wheat*, November 18 and December 20, 1929. Figures are for crop year August–July, except U.S. Department of Agriculture estimates which are for the year July–June. Totals are for items listed in table, and are not strictly comparable with each other.

[a] Roumania, Bulgaria, Hungary, and Jugo-Slavia.
[b] Partially estimated.
[c] Net import.
[d] Algeria.
[e] Algeria, Tunis, Morocco, Chile.

OUTWARD CARRYOVERS

The foregoing analysis carries the implication that in most countries carryovers at the end of 1929–30 are likely to prove smaller than were stocks at the beginning of the year. Reductions seem probable in many of the importing countries of Europe, the British Isles possibly excepted. In the Danube basin, Australia, and especially Argentina, stocks on August 1, 1930, must fall far below those of the preceding year if the export movement approximates what we have set forth as probable. Yet even in these countries the outward carryovers of 1929–30 may stand about at an average level, not strikingly below. In the United States and Canada, the outward carryovers

would decline to approximately 214 and 79 million bushels respectively if both our calculations of trade and domestic utilization, and official estimates of crops and stocks, are correct. Carryovers of this size would be smaller than those of 1929 in both countries by 48 and 25 million bushels respectively, but otherwise the largest in post-war years. In the event that our estimate of North American net exports should be exceeded by 50 million bushels, the data suggest that the outward carryover in North America would still stand well above the average. In the event that Argentina exports some 30–40 million bushels less than we have assumed, and in addition total world net exports exceed our tentative estimate by 50 million bushels shipped from North America, the outward carryover in North America could still remain about of average size.

The Price Outlook

Most of such probable developments in the price situation as we are able to envisage have been set forth in earlier pages, and here these may be summarized briefly. On the assumption that changes in new-crop prospects will not prove startling in the next three or four months (January–March or January–April 1929) we anticipate neither a prolonged nor a drastic departure of international cash wheat prices (British parcels) from the average level of September–December, some $1.38 per bushel. The international statistical position is seemingly too tight to permit a sustained and pronounced decline, especially because the stronger holders of wheat must be drawn upon rather freely for imports in the absence of a big crop in Argentina. The position seems on the other hand not tight enough to permit a sustained and pronounced rise, at least prior to late April or May, for requirements are small and many importing countries, Germany and Italy perhaps excepted, seem already to have placed themselves in a position enabling them to avoid at least for some months the necessity of continuous heavy purchases in North America. Erratic price fluctuations are to be expected in view of the numerous uncertainties in the situation and the wide differences of opinion that appear still to prevail regarding the price levels justified by the existing conditions; but the movements of January–March may prove less wide than those of August–December if only because similarly sensational crop developments are unlikely to occur. By late spring, however, when stocks have been further reduced, the position may become tight enough to lead to a sharp rise in prices if moderately unfavorable crop news appears. Again in the absence of startling changes in new-crop prospects, it seems possible that the international futures price relationships of August–December may not change greatly in the ensuing three or four months, though some indications of an adjustment appeared in early January. These relationships on the whole seem rather more likely to be altered in the closing three or four months of the crop year, in such a manner that a more rapid movement of North American wheat to export will be possible. The alteration would naturally accompany the accumulation of evidence that must appear regarding the prospects for the crops of 1930 in the Northern Hemisphere. If these crop prospects are distinctly favorable, adjustment of futures price relationships may reasonably be expected to occur while the level of international prices remains much as it was or slightly lower than it was in September–December. If crop developments are distinctly or even moderately unfavorable, the adjustment will probably take place at a higher level.

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

APPENDIX

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

(Million bushels)

Year	United States	Canada	India	Australia	Argentina	Chile	Uruguay	Hungary	Bulgaria	Jugo-Slavia	Roumania	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	757.4	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	899.4	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	751.9	11.9
1928	914.9	566.7	290.9	159.7	283.0	27.0	15.2	99.2	50.7	103.3	115.5	783.2	11.0
1929	806.5	293.9	317.6	112.0	144.0	....	....	71.8	34.5	95.0	99.8	.....	11.6
Average 1909–13	690.1	197.1	351.8	90.5	147.1	20.1	6.5[a]	71.5	37.8	62.0	158.7[a]	756.9[b]	11.5[a]
1924–28	833.0	422.2	328.4	143.6	229.9	26.0	12.1	74.9	39.1	73.5	99.6	732.8	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	27.5	34.0	12.3	45.2	49.6[c]	319.9	115.6	260.7	16.0	4.7	....	.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	Czecho-Slovakia	Poland	Finland	Latvia	Esthonia, 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	5.7	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	6.9	8.8
1929	149.3	11.1	5.8	11.6	48.1	60.3	1.10	2.37	10.09	14.0	39.4	11.2	....
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	7.6	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.

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

[c] Excluding Ireland.

[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				Fort 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	.....	26.3	41.0	51.6	....	6.63	11.81	13.53	....
Jan.	24.6	23.5	22.5	.....	14.0	21.1	11.0	....	6.83	16.49	13.90	....
Feb.	21.0	22.5	28.7	.....	8.6	9.5	2.9	....	4.27	12.54	9.25	....
Mar.	16.6	26.3	27.2	.....	6.3	3.3	5.2	....	5.94	10.50	15.46	....
Dec.–Mar.	84.6	98.8	111.4	.....	55.2	74.9	70.7	....	23.67	51.34	52.14	....
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				Fort William and Port Arthur				Vancouver			
	1926	1927	1928	1929	1926	1927	1928	1929	1926	1927	1928	1929
July	13.79	8.54	7.40	11.45	2.04	2.07	4.28	3.25	.10	.07	.69	.75
	14.25	10.35	14.24	16.49	1.63	2.89	3.14	3.61	.06	.04	.50	.57
	19.26	11.35	18.76	17.84	1.19	3.10	3.07	3.42	.01	.02	.46	.85
	25.25	26.01	23.93	29.69	.92	2.61	3.03	2.89	.05	.00	.72	1.00
Aug.	23.63	24.37	24.87	37.38	.75	.95	1.80	.77	.03	.07	.50	.55
	18.84	19.56	20.18	31.98	.22	.81	1.07	.59	.02	.00	.32	.09
	13.92	16.41	18.56	18.64	.21	.35	.76	.33	.02	.00	.22	.12
	10.89	13.84	15.97	18.55	.15	.21	.41	.17	.03	.01	.10	.11
Sept.	12.92	14.88	15.51	13.81	1.12	.20	.43	.56	.06	.01	.09	.13
	12.47	16.09	15.03	12.02	3.02	.23	.96	2.79	.10	.03	.13	.58
	11.73	19.91	17.67	11.66	6.69	1.01	6.28	8.23	.07	.07	.15	1.68
	9.77	19.57	18.36	10.72	12.49	3.00	12.84	8.47	.03	.15	.52	1.12
Oct.	9.21	20.07	19.68	11.12	13.51	5.19	16.81	7.01	.07	.07	1.42	.92
	8.71	21.20	22.18	9.09	12.48	11.79	19.37	5.63	.24	.33	2.21	1.24
	7.30	17.52	18.36	7.38	10.82	11.54	19.56	6.41	.75	.36	2.97	1.59
	8.68	14.82	22.75	8.32	13.59	8.71	18.38	7.73	1.90	1.61	3.07	1.65
	9.38	14.03	15.00	8.73	14.37	13.30	17.34	6.45	2.92	2.75	2.68	2.04
Nov.	8.27	14.02	12.30	6.38	12.46	19.27	16.05	5.59	3.33	3.38	3.01	1.70
	7.21	10.24	9.28	5.95	14.16	18.21	15.04	4.36	1.45	2.15	3.59	1.20
	6.59	10.54	8.72	4.50	15.00	14.30	17.05	2.87	.92	2.56	3.58	1.24
	5.86	7.91	10.05	3.81	14.92	15.18	18.37	4.14	1.60	2.12	4.04	2.07
				4.23				4.02				1.24

* United States data are unofficial figures compiled from *Grain World;* 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 July 10, 1926, July 9, 1927, July 7, 1928, and July 6, 1929; Vancouver figures are for weeks ending one day earlier. Beginning October 1, 1926, Vancouver figures include receipts at Prince Rupert.

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

(*Million bushels*)

Date	United States	Canada	U.K. ports	Afloat to Europe	Total	Date	United States	Canada	U.K. ports	Afloat to Europe	Total
Aug. 3	145.5	106.1	6.2	37.6	295.4	Oct. 5	206.9	178.3	13.4	42.4	441.0
10	165.6	103.6	5.7	39.2	314.1	12	208.6	189.3	14.2	41.6	453.7
17	181.7	100.8	5.4	37.5	325.4	19	208.3	201.7	14.4	42.5	466.9
24	190.9	100.2	5.8	40.7	337.6	26	208.4	211.3	15.2	41.5	476.4
31	196.9	102.4	5.0	46.5	350.8	Nov. 2	209.4	215.6	16.8	39.0	480.8
Sept. 7	199.5	115.0	4.8	48.0	367.3	9	206.0	219.6	16.7	35.4	477.7
14	201.1	131.0	6.4	47.0	385.5	16	205.9	219.7	17.6	33.8	477.0
21	203.7	148.5	7.8	46.0	406.0	23	200.9	221.9	18.0	32.9	473.7
28	205.8	166.0	11.2	42.2	425.2	30	198.6	223.1	20.6	28.6	470.9

* United States data are *Bradstreet's;* Canadian data from *Canadian Grain Statistics;* United Kingdom and Afloat data from Broomhall's *Corn Trade News* and *Milling.* 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, DECEMBER 1, 1920–28, AND MONTHLY, AUGUST–DECEMBER 1929*

(*Million bushels*)

Date	United States	Canada	Argentina	Australia	United Kingdom ports	Afloat to Europe	North America	Argentina, Australia	U.K. and afloat	Grand total	Total ex-Australia
1920 Dec. 1	92.2	51.9	.1	6.5	31.6	36.6	144.1	6.6	68.2	218.9	212.4
1921 Dec. 1	107.9	76.6	3.1	6.7	11.1	42.4	184.5	9.8	53.5	247.8	241.1
1922 Dec. 1	125.4	89.3	2.9	10.0	4.5	56.2	214.7	12.9	60.7	288.3	278.3
1923 Dec. 1	139.2	110.5	2.9	1.0	7.8	51.8	249.7	3.9	59.6	313.2	312.2
1924 Dec. 1	168.7	77.1	4.4	2.0	14.3	59.2	245.8	6.4	73.5	325.7	323.7
1925 Dec. 1	109.6	104.5	3.7	.7	3.8	35.1	214.1	4.4	38.9	257.4	256.7
1926 Dec. 1	133.0	123.0	1.8	2.0	3.6	36.9	256.0	3.8	40.5	300.3	298.3
1927 Dec. 1	154.7	120.9	3.6	.7	9.6	57.1	275.6	4.3	66.7	346.6	345.9
1928 Dec. 1	208.0	169.5	4.4	8.0	5.7	63.5	377.5	12.4	69.2	459.1	451.1
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
Average, Dec. 1											
1910–14	111.7	35.2	.5	.6[a]	18.6	36.0	146.9	...	54.6	.....	202.0
1924–28	154.8	119.0	3.6	2.7	7.4	50.3	273.8	6.3	57.7	337.8	335.1

* 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.

[a] Australian figure for one year only.

TABLE VI.—INTERNATIONAL TRADE IN WHEAT AND FLOUR, MONTHLY, JULY–NOVEMBER, 1929*

(*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]	(.02)[a]	1.31	(.66)[a]
Sept.	18.18	9.42	(.05)[a]	4.52	24.46	.18	3.70	2.35	(.02)[a]	.....	1.01	(.73)[a]
Oct.	14.56	23.06	(.10)[a]	....	15.12	...	3.72	....	(.01)[a]	.....	.63	.....
Nov.	16.98	24.48	.....	....	.....	...	....	....	.....	.....	....	.....

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	2.20	3.25	.84	1.95	2.47	1.63	1.09	.91	.37
Oct.	1.73	23.95	....	1.64	4.03	1.22	3.46	2.34	1.02	1.16	.95	1.00
Nov.	....	19.53	....	.....	....	....	....	....	....	....	....	....

* Data from official sources and International Institute of Agriculture.

[a] Net import.

[b] Finland, Esthonia, Latvia.

[c] Imports into Latvia partially estimated.

TABLE VII.—WEEKLY WHEAT AND FLOUR SHIPMENTS BY AREAS OF ORIGIN AND DESTINATION, AUGUST–NOVEMBER 1929*

(*Million bushels*)

Week ending	North America	Argentina, Uruguay	Australia	Russia	Danube[a]	India	Other countries[b]	Total	To Europe	To ex-Europe
Aug. 3	6.89	2.61	.59	.....	.21	.02	.57	10.89	8.47	2.42
10	6.74	5.98	1.57	.....	.02	.01	.66	14.98	11.67	3.31
17	5.46	5.69	1.51	.....	.50	.01	.21	13.38	10.49	2.89
24	6.97	6.92	1.35	.....	.51	.02	.46	16.23	13.22	3.01
31	7.61	5.14	.80	.....	.39	.19	.20	14.33	12.26	2.07
Sept. 7	4.09	6.01	1.70	.....	.67	...	.38	12.85	9.75	3.10
14	6.95	3.68	1.40	.....	1.35	.04	.40	13.82	10.29	3.53
21	6.29	5.52	1.04	.....	1.21	...	.53	14.59	11.05	3.54
28	5.22	3.92	.61	.....	1.60	...	.49	11.84	8.70	3.14
Oct. 5	5.36	5.29	.62	.....	1.61	...	.30	13.18	11.27	1.91
12	6.79	4.74	.30	.....	1.50	...	.38	13.71	11.55	2.16
19	6.46	4.61	.23	.....	1.99	...	.48	13.77	10.45	3.32
26	4.66	4.64	.47	.....	1.62	...	.30	11.69	9.87	1.82
Nov. 2	6.58	1.21	.74	.....	.99	...	.33	9.85	7.06	2.79
9	5.64	2.71	.53	.....	1.59	...	.17	10.64	7.68	2.96
16	6.91	2.30	.30	.....	1.90	...	.28	11.69	9.06	2.63
23	8.59	2.06	.82	.....	1.19	...	.27	12.93	10.15	2.78
30	6.58	1.22	.19	.....	1.56	...	.42	9.97	7.51	2.46

* 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] Danube and Black Sea. Includes shipments across land frontiers.

[b] North Africa, Chile, Germany, etc.

TABLE VIII.—WEEKLY CASH PRICES OF REPRESENTATIVE WHEATS IN LEADING EXPORTING AND IMPORTING MARKETS, AUGUST–NOVEMBER 1929*

(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)	Barletta (Buenos Aires)	No. 1 Manitoba	No. 3 Manitoba	No. 2 Winter	Argentine Rosafe	Australian
Aug.	1.47	1.24	1.31	1.21	1.36	1.35	1.50	1.21	n.q.	1.78	1.46	1.45	1.61
	1.46	1.25	1.29	1.24	1.34	1.40	1.53	1.21	n.q.	1.66	1.40	1.39	1.56
	1.42	1.28	1.34	1.22	1.37	1.50	1.51	1.24	1.82	1.76	1.46	1.42	1.56
	1.39	1.23	1.30	1.20	1.30	1.49	1.46	1.22	1.73	1.64	1.39	1.35	1.53
Sept.	1.43	1.28	1.38	1.25	1.35	1.50	1.46	1.25	1.70	1.62	1.41	1.39	1.50
	1.42	1.30	1.37	1.26	1.38	1.53	1.49	1.23	1.69	1.62	1.41	1.36	1.46
	1.43	1.28	1.34	1.25	1.36	1.47	1.43	1.22	1.70	1.60	1.39	1.34	1.47
	1.38	1.25	1.35	1.23	1.32	1.42	1.38	1.20	1.64	1.56	1.36	1.28	1.42
Oct.	1.40	1.26	1.33	1.24	1.34	1.42	1.37	1.19	1.62	1.55	1.32	1.22	1.35
	1.43	1.28	1.36	1.25	1.36	1.44	1.39	1.25	1.64	1.56	1.37	1.29	1.36
	1.38	1.25	1.32	1.21	1.32	1.39	1.35	1.23	1.62	1.55	1.35	1.30	1.39
	1.30	1.19	1.28	1.17	1.26	1.33	1.29	1.19	1.56	1.49	1.30	1.26	1.34
Nov.	1.36	1.21	1.31	1.19	1.27	1.35	1.31	1.20	1.53	1.48	1.31	1.23	1.32
	1.28	1.20	1.30	1.18	1.27	1.28	1.24	1.18	1.52	1.46	1.30	1.22	1.36
	1.25	1.15	1.22	1.13	1.23	1.24	1.20	1.14	1.44	1.38	1.24	1.14	1.30
	1.33	1.23	1.29	1.20	1.29	1.31	1.28	1.20	1.48	1.43	1.30	1.20	1.37
	1.38	1.25	1.32	1.21	1.30	1.34	1.30	1.23	1.53	1.47	1.36	1.25	1.45

* 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.

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	1.84[a]	1.57	1.37	1.49
Dec.	1.29	1.25	....	1.58	1.56	....	1.88	1.87	....	1.53	1.33	....
Jan.	1.29	1.25	....	1.58	1.59	....	1.93	1.92	....	1.52	1.35	....
Feb.	1.26	1.27	....	1.56	1.64	....	1.94	1.96	....	1.49	1.40	....
Mar.	1.27	1.27	....	1.65	1.68	....	2.00	1.95	....	1.59	1.44	....
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; 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.

TABLE X.—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	294
Total supplies	811	942	1,016	1,057	1,069	421	442	528	645	398
Net exports	95	209	194	147	180	324	292	332	406	210
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	70	18	31	34	44	20
Apparent error in crop estimate						—38	—11	...	+2	...
Stocks at end	111	138	142	262	214	35	48	78	104	79
Total disappearance	811	942	1,016	1,057	1,069	421	442	528	645	398

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	120	36	30	34	43	45
New crop	191	221	239	307[a]	200[b]	115	161	118	160	112
Total supplies	247	282	304	397	320	151	191	152	203	157
Net exports	94	143	178	224	170	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	—35	...	...	+7	—10	45	38
Stocks at end	61	65	90	120	60	30	34	43		
Total disappearance	247	282	304	397	320	151	191	152	203	157

* 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] The official estimate, according to current unofficial sources, was revised downward on December 24, 1929, from 307 to 283 million bushels.

[b] Unofficial; the official estimate published December 24, 1929, was 144 million bushels.