WHEAT STUDIES

OF THE

FOOD RESEARCH INSTITUTE

VOL. III, NO. 10 SEPTEMBER 1927

SURVEY OF THE WHEAT SITUATION

APRIL TO JULY, 1927

DEVELOPMENTS in the world wheat situation during the period under review were dominated chiefly by changes in new crop prospects. Prices rose sharply during May as the seeding of wheat was delayed in North America, but declined slowly and erratically during June and July with favorable prospects for spring wheat in the United States and Canada. Importers restricted their purchases partly in view of higher prices, but partly because heavy arrivals in Europe had built up stocks and fair crops of native wheat were in prospect. Exports, which during April and May had run high as the exceptionally heavy mid-winter movement continued and navigation opened on the Great Lakes, declined sharply to a low level in June and July.

The outlook for trade and prices in 1927–28, though obscured by the lateness of Canadian and European crops and uncertain prospects in the Southern Hemisphere, is for a normal wheat year. Carryovers, especially in Canada, Argentina, and Australia, were larger this year than last. According to present indications, European crops of rye, wheat, and potatoes are larger in 1927–28 than in 1926–27, and the North American wheat crop is but little smaller. With reductions in importers' requirements balanced by reductions in exportable surpluses, present indications point to a smaller volume of international trade in 1927–28 than in 1926–27; to a fairly easy international position, not unlike that of last year but not so easy as in 1923–24; and to a fairly stable level of prices but little different from that of 1926–27. But exceptionally large or small crops in the Southern Hemisphere would alter the general outlook fundamentally.

PALO ALTO, CALIFORNIA

STANFORD UNIVERSITY BRANCH

September 1927

WHEAT STUDIES

OF THE

FOOD RESEARCH INSTITUTE

The central feature of the series is a periodic analysis of the world wheat situation, with special reference to the outlook for supplies, requirements, trade, and prices. Each volume includes a comprehensive review of the preceding crop year, and three surveys of current developments at intervals of about four months. These issues contain a careful selection of relevant statistical material, presented in detail in appendix tables for reference purposes, and in summary form in text tables and charts.

Each volume also includes six special studies bearing on the interpretation of the wheat situation and outlook or upon important problems of national policy. Typical subjects are listed on the fourth cover page of this issue.

The series is designed to serve the needs of all serious students of the wheat market, in business, government, and academic circles, by summarizing and interpreting basic facts and presenting current developments in due perspective.

The ten issues of Volume IV will be published monthly from November 1927 to September 1928, except in April 1928. Ordinarily each issue will reach subscribers in North America early in the month designated. The subscription price for the volume, including a temporary binder, is $10.00. Individual issues may also be purchased separately. Address: Food Research Institute, Palo Alto, Stanford University Branch, California. European subscriptions, at £2 2*s*., will be accepted by the Northern Publishing Co., Ltd., 16, Fenwick Street, Liverpool, England.

Entered as second-class matter February 11, 1925, at the post-office at Palo Alto, Stanford University Branch, California, under the Act of August 24, 1912.
Published by Stanford University for the Food Research Institute.

SURVEY OF THE WHEAT SITUATION

APRIL TO JULY, 1927

International trade continued very heavy during the last third of the crop year. Total shipments were maintained at the record level of January–March during April and early May, as importers continued their heavy purchases and large quantities of Canadian wheat were released upon the opening of navigation in the Great Lakes in mid-April. But rising prices, particularly in the last two weeks of May, together with heavy arrivals in Europe which reconstituted stocks, led importers to curtail their purchases; and shipments declined sharply to a comparatively low level in July. Shipments to ex-European destinations, however, were unusually large in the aggregate.

Price movements on the whole were dominated by changing prospects for North American crops. Throughout April and May, as seeding was delayed in the North American spring-wheat belt and the United States winter-wheat crop deteriorated, prices rose to the highest point for many months. Under the influence of favorable growing weather for spring wheat and harvesting weather for winter wheat in North America from the end of May to the end of July prices moved erratically downward, though not to the December–March level. The notable slackening of European demand as arrivals of import wheat attained large volume after the first of June was also influential. During July occasional reports and rumors of rust damage in the North American spring-wheat belt were circulated, whereon prices responded sharply.

The world's carryover of old-crop wheat was apparently moderately large this year. In Canada, Australia, and Argentina, exportable surpluses were of exceptionally large size. In the United States total stocks were about average, with more than the usual amount of good quality old-crop wheat in the hands of mills. European countries apparently possessed considerably more import wheat this year than last, though probably not unusual quantities. Little is known of stocks of domestic wheat in Europe, but these were probably near exhaustion in central and northern countries but of fair to good size in France, Italy, Spain, Roumania, and Russia.

Available evidence on stocks and production suggests that net exports, net imports, exportable surpluses, and importers' requirements for the crop year 1927–28 will all prove smaller than in 1926–27. European requirements promise to be smaller since the crops of wheat and rye are considerably larger and carryovers in appear to be larger also. The potato crop also promises better. The ex-European requirements, always difficult to estimate, are likely to fall below last year's chiefly in view of a larger crop in China. Notable increases in exports cannot be expected from India, North Africa, or North America, where this year's crops exceed last year's but slightly; and decreases in the production and exports of the Southern Hemisphere may roughly balance the increased production and decreased imports of importing countries. The international position may prove to be about as easy as in 1926–27, much easier than in 1924–25 and 1925–26, but tighter than in 1923–24. Such forecasts, however, rest upon assumptions respecting the outcome of European and Canadian crops, neither of which is made, as well as upon production in the Southern Hemisphere, where the wheat plant is still in the early stages of growth. Distinctly favorable or unfavorable developments in any of these areas would fundamentally alter the prospective situation; and in view of the lateness of Northern Hemisphere crops and the inevitable uncertainty now surrounding the accuracy of official and unofficial estimates of

CONTENTS

production, current information is to be accepted with even more reserve than is usually necessary at this season.

Our analysis of the international position implies a level of prices close to that of 1926–27; but the probability is no more than a statistical expectation, subject to wide alterations in the light of actual developments. Prices in the United States promise to remain on an export basis, except for No. 1 Dark Northern Spring and soft red winter wheat. Durum wheat is unlikely to carry the high premiums characteristic of 1926–27, since the crop is of record size. The higher grades of Canadian wheat will probably not be sold in world markets at premiums as high as those which prevailed in 1926–27.

I. INTERNATIONAL TRADE

Volume and Course of Trade

The heavy international movement of wheat and flour characteristic of the crop year 1926–27 continued in the four closing months. Broomhall recorded shipments of 283 million bushels during April–July, as compared with the record movement of 299 million in December–March. Shipments during the last four months were larger than those of August–November by 50 million bushels, chiefly because of the effect of an extreme advance of ocean freight rates during September–November in restricting trade during those months.[1] Broomhall's figures for international shipments are as follows, in million bushels:

Crop year 1926–27	Total	To Europe	To ex-Europe
Aug.–Nov. (17 weeks)	232.8	196.3	36.5
Dec.–Mar. (17 weeks)	299.1	252.8	46.3
Apr.–July (18 weeks)	283.1	233.9	49.2

Approximately the same facts appear from statistics of net exports from the leading exporting countries, which run as follows, in million bushels:

Crop year 1926–27	Total	United States	Canada	Argentina	Australia
Aug.–Nov.	227.8	103.9	109.3	7.8	6.8
Dec.–Mar.	262.8	41.5	100.6	69.4	51.3
Apr.–July	243.9[a]	50.5	82.8	66.3[a]	44.3[a]

[a] Partially estimated from Broomhall's shipments.

Broomhall's data for shipments for the crop year and for April–July, together with comparable data for previous years, are summarized in Table 1 and Chart 1. Total shipments during the crop year 1926–27 were by far the largest since the war, and indeed the largest in history. Large crops in exporting countries, only average wheat crops and poor crops of rye and potatoes in Europe, low world stocks at the beginning of the crop year, and attractively low prices, together with more obscure influences in the form of upward trends in population and the consumption of white bread, and improvement in financial and industrial conditions in Europe, have combined to create a situation which explains the exceptionally large volume of international trade. Broomhall's figures presumably understate the volume of trade in 1926–27 to an unusual degree, in view of movements by rail and river from Russia and the Danubian countries especially during the period of high ocean freight rates.

April–July shipments attained the largest volume recorded for a similar period since 1920–21, the year 1923–24 excepted. In that year prices were very low, and pros-

Table 1.—International Wheat and Flour Shipments (Broomhall) by Destination*

(Million bushels)

Year	April–July (18 weeks)			August–July (52 weeks)		
	Total	To Europe	To ex-Europe	Total	To Europe	To ex-Europe
1920–21	235.3	214.6	20.8	591.0	541.5	49.5
1921–22	206.1	181.3	24.8	647.1	546.7	100.4
1922–23	231.7	200.7	31.0	676.4	585.9	90.5
1923–24	283.3	246.0	37.2	775.3[a]	626.5[a]	148.8[a]
1924–25	188.2	169.3	19.0	715.2	639.7	75.5
1925–26	225.4	190.0	35.4	667.6	532.3	135.3
1926–27	283.1	233.9	49.2	815.0	683.0	132.0
Average						
1909–14	218.2	189.7	28.5	624.7	542.7	82.0
1920–26	228.3	200.3	28.0	678.8	578.8	100.0

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

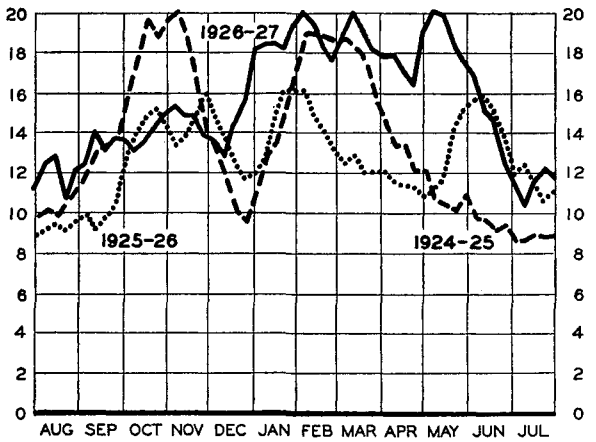
[a] Fifty-three weeks.

[1] See Wheat Studies, January 1927 and May 1927, III, 152–56; 271–72. During April–July ocean freight rates have approached approximately normal levels.

pects for a poor crop in Europe in 1924 encouraged importers to purchase heavily until a sharp rise in prices in June and July. This year, as appears from Chart 1, shipments were of record size in April and early May, but fell rapidly to a fairly low level in June and July. The heavy shipments in April and May account for the large total for the period—a total larger than earlier appeared possible in view of the extraordinary movement of December–March and current information on European requirements. The April–May figures reflect, on the one hand, a continuation of the heavy midwinter movement which, after the harvest of a record crop in the Southern Hemisphere, followed the artificially restricted fall movement; and on the other, the opening of navigation on the Great Lakes on April 15 and the consequent release of large quantities of Canadian wheat. Apparently, however, European crops of bread grains and potatoes were officially underestimated in certain countries, so that requirements, and hence purchases and movements, were somewhat larger than had appeared probable on the basis of available information.

CHART 1.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR, WEEKLY FROM AUGUST 1924*

(Million bushels; 3-week moving average)



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

The abruptness of the decline in shipments, from 22 million bushels in the first week in May to only 10.4 million bushels in the last week in June, is especially striking. Heavy arrivals in Europe,[1] a sharp rise in prices culminating late in May and a higher level thereafter, together with prospects for fairly good crops of domestic wheat, encouraged European buyers to curtail their purchases drastically. So sharp a decline apparently came somewhat as a surprise to many American traders, who had seemingly accustomed themselves to the expectation that European requirements were so large and stocks so low that a continuation of the abnormally heavy movement of the earlier months, though with allowances for a seasonal decline, was inevitable.

IMPORTS AND THEIR DISTRIBUTION

Table 1 and Chart 2B (p. 424) show the distribution of shipments between European and ex-European destinations for April–July and the crop year as a whole. Ex-European takings at 132 million bushels have proved to be almost as large as those of last year, and well above average, though smaller than those of 1923–24, when 149 million bushels were shipped under the stimulus of very low prices. Information on production, stocks, and movements in ex-European countries is too scanty to provide adequate explanation of these differences. The comparatively large total for the year —large in view of the ocean freight rate situation and the wars in China, influences which tended to restrict importation at least in the first half of the year—was swelled by the exceptionally heavy shipments of April–July. During this period ex-European takings were 49 million bushels as compared with 46 and 36 million in the preceding periods—a figure more than 10 million bushels larger than was recorded for any April–July period in the past seven years. The exceptional size of ex-European takings in April–July was in part due to large shipments to the Orient. Broomhall's figures show shipments of 9.6 million bushels to that area as compared with 5.7 million in 1925–26, a year of large ex-European takings.[2] Apparently the comparatively large April–July shipments to the Orient largely represent a dislocation of seasonal

[1] See below, p. 436.

[2] Shipments to the Orient in 1923–24, when ex-European takings at 149 million bushels were the largest in recent years, were not separately recorded by Broomhall.

movement. The disturbances in China seriously reduced December–March takings (shipments to the Orient were only 8.9 million bushels during the period this year, as against 20.6 million in 1925–26), while quicter conditions, the shipment of supplies to foreign troops, more stable ocean freight rates, and continuing attractive prices gave rise to unusually heavy shipments during April and May.

Shipments to Europe for the crop year, at 683 million bushels, were the largest in history, more than 40 million larger than in 1924–25, the post-war year of next largest shipments. They would appear larger still if Broomhall's data were more complete for Russian and Danubian exports. Shipments to Europe during April–July, however, were smaller than record shipments in 1923–24. It is of interest that, though total April–July shipments this year were of almost the same size as in 1923–24, shipments to Europe were smaller, to ex-Europe larger. On the one hand this circumstance reflects the unusual situation in the Orient leading to abnormally large seasonal imports; on the other, smaller European takings in 1926–27 than in 1923–24 reflect the earlier advance in prices this year.[1] The European situation in stocks and crop prospects was similar in the two years.

Continental countries have continued to absorb unusually large quantities, as appears from the following figures (Broomhall's shipments, in million bushels):

Year	August–July (52 weeks)			April–July (18 weeks)		
	To United Kingdom	To Continent	To orders	To United Kingdom	To Continent	To orders
1923–24	188.4	305.7	132.4	70.1	108.8	67.1
1924–25	160.2	312.6	167.0	47.6	80.1	41.5
1925–26	162.8	260.1	109.4	58.7	93.6	37.7
1926–27	176.5	355.2	151.3	65.1	107.9	60.9

Sources of Exports

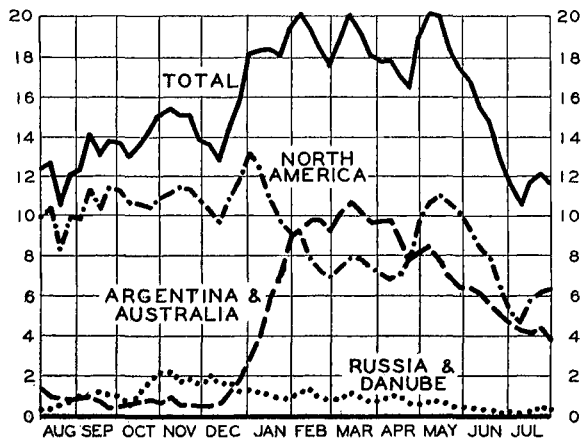
Broomhall's data on export shipments during April–July, by areas of origin, together with net export data for the United States and Canada, are summarized in Table 2.[2] Chart 2 A shows the course of shipments by areas of origin since the beginning of the year.

North America has furnished about half of the total shipments, a proportion smaller than in any other year except 1923–24. In that year, as in 1926–27, Southern Hemisphere crops were unusually large and provided large supplies for export. Net exports

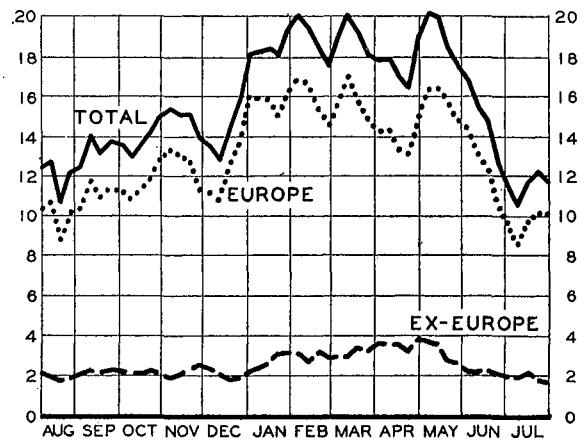
Chart 2.—International Shipments of Wheat and Flour, Weekly, August–July 1926–27*

(Million bushels; 3-week moving average)

A. By Principal Areas of Origin.



B. By Areas of Destination.



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

[1] See Chart 3, p. 434.

[2] See also Appendix Tables VI and VII.

from the United States at 51 million bushels were surprisingly large in view of available data on disappearance, especially since the July exports, unlike those of last year, were fairly small and contained little new-crop wheat. Australian shipments at 49 million bushels were the largest since the war for a similar period, in spite of restraining influences such as relatively high freight rates and an unfavorable seeding season. Exports from Canada and Argentina were of normal volume, size of crop considered, though large in absolute figures. Russia and the Danubian countries contributed little, while India exported somewhat more than might have been expected in the light of preliminary estimates of production.

TABLE 2.—INTERNATIONAL SHIPMENTS AND NET EXPORTS OF WHEAT AND FLOUR FROM PRINCIPAL EXPORT AREAS, APRIL–JULY, 1921–27*

(Million bushels)

April–July	International shipments (Broomhall's)							Net exports	
	Total	North America	Argentina	Australia	Russia, Danube	India	Other	United States	Canada
1921	235.3	146.9	37.8	46.5	1.2	2.9	...	111.6	31.7
1922	206.1	106.1	60.5	36.9	1.9	.0	.7	54.6	47.8
1923	231.7	131.8	60.6	16.1	2.8	18.5	2.0	44.3	66.2
1924	283.3	143.6	86.7	30.0	7.4	12.0	3.5	27.7	103.0
1925	188.2	104.1	30.8	44.4	.0	4.4	4.5	43.4	54.2
1926	225.4	139.1	42.1	22.4	11.0	3.6	7.2	45.9	84.0
1927	283.1	141.7	71.1	48.7	9.0	7.5	5.1	50.5	82.8

* Shipments are for 18 weeks, from Broomhall's *Corn Trade News*. Net exports are official data.

ADVANCE ESTIMATES AND REPORTED MOVEMENTS

Although official statistics of net exports and imports for the past crop year are as yet incomplete, sufficient data are available to permit some comment upon the accuracy of advance estimates of international trade made earlier in the year, as well as upon some apparent slight discrepancies in trade statistics.

Table 3 shows Broomhall's successive estimates of shipments for the crop year as compared with actual reported shipments. Each estimate was larger than its predecessor; and not until May 24, rather late in the crop year, did Broomhall reach an estimate approximately in accord with the final reported figure of 815 million bushels. All observers have been forced to increase their estimates as the year progressed; the huge volume of international trade, especially in the last third of the crop year, has proved surprising to most students. In our judgment the statistical evidence indicated as early as the middle of December a record volume of trade for the year. Our December 13 estimate of net exports from the principal exporting areas, as shown in Table 4 (p. 426), was for 790 million bushels, while Broomhall's December 14 estimate (of shipments as shown in Table 3, which are usually below net exports) was for only 736 million bushels. But we failed to anticipate, in either our December or our April estimate, so heavy a movement as

TABLE 3.—BROOMHALL'S SUCCESSIVE ESTIMATES OF SHIPMENTS FOR 1926–27 COMPARED WITH REPORTED SHIPMENTS*

(Million bushels)

Exporting area	Sept. 14	Dec. 14	Mar. 22	May 24	July 5	Reported shipments
North America	440	440	456	480	480	484
Argentina	96	128	128	144	136	139
Australia	64	64	80	96	104	104
Russia	40	40	48	48	48	44
Danube basin	40	40	32	32	32	30
India	16	16	8	6	9	10
Other countries	8	8	8	6	6	4
Total	704	736	760	812	815	815

* Data from Broomhall's *Corn Trade News*. Broomhall's first estimate, dated August 10, is not shown in this table.

actually occurred. As appears from Table 4, somewhat incomplete statistics indicate that some 850 million bushels of wheat and flour as wheat were exported, net, from the principal exporting areas—about 55 million bushels more than seemed probable even so late as April 16. The discrepancy would appear larger if more complete data were available.

Even in retrospect the reasons for such unexpectedly heavy trade are not altogether clear. A brief comparison of our April estimate of net exports with the officially reported totals for several countries will show why advance estimates are subject to error. Every country or area listed in Table 4, except Canada, exported more

TABLE 4.—FOOD RESEARCH INSTITUTE AND U.S.D.A. ADVANCE ESTIMATES OF NET EXPORTS OF WHEAT AND FLOUR FOR 1926–27, COMPARED WITH REPORTED EXPORTS*

(Million bushels)

Exporting area	U.S.D.A.			F.R.I.		Reported
	Oct. 25	Dec. 20	Mar. 14	Dec. 13	Apr. 16	
United States.	180–220	180–220	195–220	170	190	203
Canada.....	270–300	270–300	275–300	290	295	293
Argentina ...	.....	120–140	110–130	140	130	144[a]
Australia	.....	90–110	90–115	95	90	102[a]
Russia	.....	25–30	35–45	40	45	48[b]
Danube basin	30–51	35–50	36–52	40	35	38[c]
India	.....	.....	5–7	10	6	14
Others	5–10[d]	7–20[e]	4–6[d]	5	4	...
Total.....	.....	727–870	750–875	790	795	850[f]

* U.S.D.A. estimates are for years ending June 30. F.R.I. estimates and reported exports are for years ending July 31, except United States figures which are for years ending June 30.

[a] Partially estimated from Broomhall's shipments.

[b] July–June figures, as quoted from *Ost Express* in *Corn Trade News*, July 19, 1927.

[c] Net exports, August–June for Hungary, August–March for Jugo-Slavia; gross exports, August–April for Roumania. Data on Bulgarian exports not available.

[d] North Africa only.

[e] North Africa and Chile.

[f] Approximation allowing for unreported exports.

than was anticipated. We may neglect, however, the small underestimates of exports from Russia and the Danubian countries. Our underestimate of United States exports was due fundamentally to a shift in procedure, made in 1925, in the official basis for estimating United States crops, which complicates the process of constructing disposition tables. With the third consecutive report of the Census Bureau on stocks held by city mills on June 30, fairly conclusive evidence appears that this shift resulted in official underestimates of the crops of 1925 and 1926.[1] Our underestimate of Argentine exports was due largely to calculations based upon reported exports of 30.1 million bushels in January and February; in May these figures were revised to 40.4 million. It further appears that a considerable amount of the poor-quality wheat of the 1925 crop was mixed for export with the better wheat of the 1926 crop, a fact not apparent until recently and still not generally recognized. The Indian crop turned out larger than was expected on the basis of both official and unofficial forecasts, and exports of over 7 million bushels were made in June and July. These developments, largely statistical and entirely unpredictable, explain in large part the notable discrepancy between forecasts and final reports of net exports. It is probable, but not demonstrable as yet, that Australian exports exceeded anticipations partly on account of the political situation in the Far East.[2]

Statistics both of shipments and net exports thus indicate not only that the international movement of wheat and flour was the heaviest in history, but also that it surpassed the expectations of both students and traders, expressed as late as March and April. The explanation commonly advanced is that European requirements proved unexpectedly large. There is much truth in this view. Within recent months it has become increasingly evident that crops were smaller in some European countries[3] than had been supposed, and the requirements larger than available statistics of production would indicate. Presumably upward trends in population and in consumption of white bread, as well as gradual improvement in financial and industrial conditions,

[1] See below, pp. 440–41.

[2] See the comments on shipments to ex-European destinations, pp. 423–24.

[3] The French crop estimate was revised downward in June from the previous estimate (October) of 249 million bushels to 232 million; and traders view the unrevised estimates for Germany, the central European countries in general, and the United Kingdom as too high. Probably rye as well as wheat crops were overestimated in several countries.

were factors which exerted an unperceived influence in increasing European requirements. Yet heavy shipments were in some part due to large takings by ex-European countries.

Net imports to the principal European countries, August–June, appear in Table 5, together with data for previous years and a comparison with our December estimate. The data are not complete for the crop year, but some facts seem established. Our estimates for Italy and Germany had been exceeded by the end of June; and July figures will probably show that our estimates for the British Isles, the Netherlands, and Switzerland were slightly too low. Other countries appear to have imported about what we estimated or a little less.[1] Poland, usually a small net exporter, had imported 7.5 million bushels net up to July 1. Nevertheless it is difficult to reconcile net import statistics with net export statistics. Total reported net exports apparently exceed our estimate by about 55 million bushels; but available data appear to indicate that our estimate of total net imports will not be exceeded by more than 30 million bushels. It remains to be seen if more complete data for the countries listed in Table 5, as well as for other European and ex-European countries, will serve to explain this slight discrepancy.[2] The explanation is not to be found in an unexpected increase in stocks of wheat afloat. Our April estimate of total net exports at 795 million bushels and of total net imports at 785 million allowed for an increase of 10 million; but Broomhall reports stocks afloat at 46.1 million bushels as of August 1, only 7.5 million above last year.

TABLE 5.—NET IMPORTS OF WHEAT AND FLOUR BY LEADING EUROPEAN COUNTRIES, AUGUST–JULY*

(Million bushels)

Importing area	Average 1921–26	1924–25	1925–26	F.R.I. Dec. estimate 1926–27	Aug.–June 1926–27
British Isles[a]	219.4	227.9	209.9	235	217.9
Italy	87.5	88.7	62.9	75	79.0
Germany	55.2	80.9	57.4	80	81.6
France	36.9[b]	58.5[b]	10.3[b]	65	52.0[b]
Belgium	39.7	39.0	39.5	40	35.9
Netherlands	24.9	26.8	27.2	27	26.4
Scandinavia[c]	20.8	22.7	18.8	22	17.5
Switzerland	15.3	13.9	15.6	15	14.9
Czecho-Slov'kia	17.2	21.5	21.7	22	18.5
Baltic States[d]	6.1[e]	7.3	7.7	8	7.1
Total	523.0[e]	587.2	471.0	589	550.8

* Data from official sources and International Institute of Agriculture.

[a] Includes Irish Free State.

[b] International Institute figures for 1924–25 and 1925–26 adjusted for wheat imported under decree of December 30, 1924. See WHEAT STUDIES, May 1926, II, 211 n. Figure for 1926–27 probably too low. See footnote to this page.

[c] Norway, Sweden, Denmark.

[d] Esthonia, Finland, and Latvia.

[e] Excluding Esthonia.

II. NEW CROP DEVELOPMENTS

New crop prospects, ordinarily important in their bearing on trade, prices, and stocks from April to September, have been more difficult to evaluate than usual on account of delayed seeding and retarded growth in many countries of the Northern Hemisphere. By mid-August a roughly reliable knowledge of wheat crops can usually be obtained. But this year, late harvests everywhere, and the presence of rust as well as the possibility of frost damage in the North American spring-wheat belt, combine to render any statement of the supply situation even more tentative than usual. It seems certain, however, that European crops are larger than those of last year, though not so much larger as was earlier expected. The United States crop appears to have fulfilled earlier expectations. The outturn in Canada and in European countries at present constitutes the major uncertainty in the wheat situation for the immediate future, while production in the Southern Hemisphere, of fundamental significance in later months, is as yet entirely problematical.

[1] Data on French imports understate the facts because millers have largely declared their importations under "temporary admission" clauses in the tariff law, and much wheat which has come into the country will not be recorded in the customs returns until it is reported as consumed and the duty is paid. Our correspondent reports that actual imports have reached 62–65 million bushels; and Broomhall records direct shipments to France at 51 million.

[2] We shall return to this matter in a later issue of WHEAT STUDIES.

India and North Africa

Available information indicates that the wheat crops of India and North Africa, the countries of the Northern Hemisphere where harvest is earliest, have proved to be somewhat larger than was expected earlier in the year. Deficient rainfall in India during January and February gave rise to trade reports that the crop of 1927 would fall far below the 325 million bushel crop of 1926; but the first official forecast, issued in April, indicated an outturn of 325 million bushels, the same as that of last year; and the final estimate showed an increase of 9 million bushels. The Indian crop is thus of moderate size, about the same as the crops of 1925 and 1926, 25–45 million bushels smaller than the good crops of 1920 and 1922–24, and some 55–85 million larger than the poor crops of 1919 and 1921. Quality is reported to be excellent, much superior to that of last year. A moderate amount of Indian wheat has been exported in recent weeks; but, as was the case last year, the exportable surplus is small.

In Morocco, Algeria, and Tunis, crop developments have been uncertain, following a fall and winter when seeding operations were disturbed. Earlier expectations were for a crop slightly smaller than last year's; but recent estimates indicate that the Moroccan and Algerian crops are fully 50 per cent larger, though that of Tunis is less than half as large. The outturn in these countries now appears to exceed that of last year by about 11 million bushels—a crop well above average size and exceeded only by those of 1923 and 1925. From this source France will presumably draw a moderate volume of imports of desirable wheat.

United States Winter Wheat

The area of winter wheat remaining for harvest in the United States, officially reported at 38.2 million acres as of July 1, is apparently over a million acres larger than that of 1926, and the largest since 1923. Following a mild winter, abandonment at 8.4 per cent was relatively small as compared to the 1922–26 average of 13 per cent, though not so small as in 1924 and 1926, when the figures were 7.4 and 5.7 per cent. As is shown in Table 6, private statisticians as of April 1 forecast winter-wheat production at 576 to 585 million bushels, a good crop of much the same size as those of 1921–24, far larger than the short crop of 1925, but below the exceptional 627 million bushel crop of 1926.

Table 6.—Official and Private Estimates of Winter-Wheat Production in the United States, April 1–August 1, 1927*

(Million bushels)

Estimator	April 1	May 1	June 1	July 1	August 1
U.S.D.A.	...	594	537	579	553
Bryant	584	600	540	546	528
Cromwell	576	597	569	558	558
Murray	585	603	563	576	562
Snow	584	589	568	565	555

* Data compiled from official and unofficial crop reports and the *Daily Market Record*, Minneapolis.

Growing conditions during April were on the whole favorable, despite excessive rains in the Ohio and Mississippi valleys, some deficiency of rainfall in an area centering in western Kansas, and a cold wave toward the end of the month in the Pacific Northwest. Early in May private statisticians raised their forecasts of production to 589–603 million bushels. The first official forecast of production as of May 1 placed the crop at 594 million, and condition was placed at 85.6 per cent, the highest May 1 figure since 1921.[1] Developments during May, however, were distinctly unfavorable. Rust, Hessian fly, green bugs, hail, and especially drought injured the growing crop in Texas, Oklahoma, and western Kansas, areas where a large part of the increase in acreage over 1926 had occurred. Excessive rains prevailed in the Ohio Valley, but favorable weather continued in most of Kansas, in Nebraska, and in the Pacific region. The June 1 forecasts of trade statisticians ranged from 540 to 569 million bushels, the reduction from May 1 forecasts averaging over 40 million bushels; and the official forecast was reduced from 594 to 537 million bushels. Condition as of June 1 was placed at only 72.2 per cent, the lowest June 1 figure (except that of 1925) for the past seven years, and well below the 10-year average figure of 78.1 per cent.

[1] See Appendix Table II.

Harvest began in the Southwest at the usual season, late in May. Frequent rains in the middle of June hindered operations in this area, where outturns, as was expected, proved mediocre. Better weather for harvest prevailed toward the end of June as the harvest moved northward to southern Nebraska. Rust did some damage in the soft red winter-wheat regions of the central Mississippi and lower Ohio valleys. But damage in these areas was offset by favorable weather in others, notably Kansas and Nebraska. On July 1 private statisticians raised the range of their forecasts of production slightly, small reductions by Snow and Cromwell being more than offset by the increased estimates of Bryant and Murray. The official forecast, based upon a condition figure of 75 per cent (somewhat lower than the 1926 figure of 77.4 per cent and the 10-year average of 77.6 per cent) was raised from 537 to 579 million bushels.

Threshing returns during July were somewhat below earlier expectations in southern and eastern portions of the winter-wheat belt, but served to confirm reports of excellent yields in Nebraska and in the Pacific region. On August 1 private statisticians estimated the total winter-wheat crop at 528 to 562 million bushels, and the official estimate was for 553 million. According to present indications, the crop of 1927 is thus some 74 million bushels smaller than the exceptional crop of 1926, despite a larger acreage this year. It is fully 151 million bushels larger than the poor crop of 1925, and about the same as the crops of 1922–24.

So far as can be ascertained, the distribution of the winter-wheat crop among its various classes[1] differs little from earlier expectations, though some significant contrasts appear with the distribution obtaining in 1926. Production of hard red winter wheat, while above average, is apparently some 40 million bushels below that of last year because of the reduced output in Texas, Oklahoma, and Kansas, for which increased production in Nebraska fails to compensate. The crop of soft red winter wheat, largely as a result of reduced acreage in the Ohio Valley, but partly because of comparatively unfavorable growing and harvesting weather, apparently falls about 50 million bushels below the crop of 1926, and is perhaps smaller than any crop of the past seven years except that of 1925. On the other hand, the outturn of soft white wheat in the Pacific region apparently runs 25–35 million bushels above that of 1926 and is larger than in any year since 1923.[2] The crops of soft white and hard red winter wheats may be expected to furnish considerable quantities for export, but little if any soft red winter promises to be available.

The harvest of winter wheat in the Southwest appears to have been conducted under as favorable weather conditions as was the case last year, and presumably even a larger number of "combines" were employed. But the movement of new-crop wheat to market during July was considerably smaller than the exceptional movement of last year; receipts at primary markets[3] during the month were only 59 million bushels as against 77 million bushels last year. This decline was due chiefly to the much smaller crop in Texas and Oklahoma; but contributing factors were a much less active demand from exporters at gulf ports than was evidenced last year, and the disposition of farmers to hold their grain in view of the uncertain outlook for the North American spring-wheat crop and the chance of higher prices.

The quality of the winter-wheat crop as a whole is probably about average, but much poorer than that of last year. Weight per bushel and protein content of hard red winter wheat are lower than last year, though baking characteristics are said to

[1] Precise quantitative information on the distribution of the United States winter-wheat crops by classes is not available. Useful approximations, not entirely dependable because based largely upon acreage distributions of 1924 and 1923, may be found in the U.S. Department of Agriculture's *Foreign News on Wheat: World Wheat Prospects for the 1927 Harvest*, July 16, 1927, p. 6, and *Foreign News on Wheat: World Wheat Crop and Market Prospects*, August 18, 1927, p. 7. Our statements above are based partly on these calculations, partly on an analysis of production by states as shown in WHEAT STUDIES, September 1926, II, 332.

[2] Experienced observers of crop developments in the Pacific region regard the official estimate as considerably too low. Developments during August lead us to believe that deterioration in the hard red spring and durum crops will prove to be approximately offset in final estimates of production by increases in the estimate of crops in the Pacific Northwest, so that the total United States wheat production of 851 million bushels will on the whole be maintained.

[3] See Appendix Tables IV and V.

be quite as satisfactory. There is, however, a larger proportion of Blackhull wheat. There is much smutty and light-weight grain in the crop of soft red winter. The large crop of Pacific white wheat, however, is said to be exceptionally clean and of good weight, though not of unusually high protein content.

United States Spring Wheat

The seeding of spring wheat in the United States was greatly delayed by excessive rainfall during April and early May. Grain was sown even up to the end of May, in some localities fully a month later than the usual date. But the heavy spring rainfall, added to an unusually heavy precipitation during the fall and winter, furnished the most satisfactory supply of subsoil moisture known in recent years. On March 1 farmers had expressed intentions to plant 19.9 million acres of spring wheat, an increase of 300 thousand acres over last year. The unfavorable seeding season gave rise to reports that no such increase would be possible; but the official estimate of acreage as of July 1 indicated that 20.3 million acres had been sown—about half a million acres more than was harvested last year, and the largest acreage since 1921 except that of 1925.

Weather conditions after the completion of seeding were on the whole unusually favorable. In contrast with the situation in most years, complaints were heard of deficiency in precipitation only during the first week in July. During the greater part of the growing season rainfall was ample but not excessive, and temperatures were moderate. The late seeding and ample moisture supply gave rise during July to occasional reports of appearance of black rust and rumors that it was likely to do great damage, and more authentic reports were circulated in the first two weeks of August. Unquestionably rust infestation was present in more than the usual degree, and undoubtedly the lush growth and somewhat retarded development of the wheat plant were such as to favor the spread of rust infection. But the hot and humid weather in which the rust spore thrives best seldom prevailed; and, though the extent of rust damage cannot as yet be ascertained, it appears from present indications that deterioration since August 1 has not proved serious. The greatest damage has been suffered in southern Minnesota, southeastern North Dakota, and northeastern South Dakota.

As of June 1, private statisticians forecast United States spring-wheat production from 225 to 250 million bushels; as of July 1, in consequence of the favorable weather during June, their forecasts ranged from 241 to 278 million bushels. The first official forecast of 274 million bushels as of July 1 was based in part upon a larger acreage figure than most of the private statisticians and the trade in general had anticipated, and was regarded as distinctly bearish. Favorable weather during July gave rise to rumors that the spring-wheat crop might reach 300 million bushels, if damage from rust should not occur. Despite the delay in seeding, harvest of early sown wheat began in South and North Dakota at about the usual date in the last half of July. On August 1 private statisticians estimated the crop between 274 and 309 million bushels; the earlier rumors of a crop approaching 300 million bushels were thus supported. Further confirmation appeared in the official estimate of 298 million as of August 1, issued on August 10.

In view of the unusually large proportion of late-sown fields this year, as well as the uncertainty respecting damage by rust early in August, the August 1 estimates of production are perhaps subject to revision in a larger degree than is ordinarily the case. Nevertheless it is certain that the United States spring-wheat crop is one of the largest since the record crop (356 million bushels) of 1918. It probably exceeds the outturn of 1926 by about 80 million bushels, and is slightly larger even than the very good crops of 1922, 1924, and 1925. As compared with last year, all important producing areas except Washington and Minnesota show higher outturns than in 1926, and in these states the decreases are in part due to reduced acreage. Production in South Dakota, which suffered from drought during the growing season of 1926, is this year estimated at 35 million bushels as against 10 million last year; and in North Dakota the crop of 1927, even if the official August 1

estimate of 123 million bushels is reduced, appears fully 35 million bushels larger than the crop of 1926.

Production of durum wheat, estimated at 84 million bushels, apparently exceeds the outturn of 1926 by 35 million bushels. The crop is certainly the largest since that of 1922—perhaps the largest in history. The premium on durum wheat during 1926–27, combined with a continued trend toward increase of durum acreage and the desirability this spring of planting early ripening and rust-resistant wheat, brought about an expansion of acreage from 4.9 to 5.6 million acres.[1] The acreage in other spring wheat is reported slightly lower this year than last; but since yield per acre is much higher, the outturn much exceeds that of last year. Present indications point to a crop of hard red spring wheat of some 165 million bushels,[2] about 35 million bushels larger than that of last year. In contrast with the crop year 1926–27, some quantities of lower-grade hard red spring wheat will be available for export in 1927–28; and the large crop of durum will furnish exceptionally large quantities. The quality of Marquis wheat on the whole is reported to be good, though not exceptionally high in protein content, and there is some shriveled grain on account of rust infestation.

Canadian Spring Wheat

The vicissitudes of the spring-wheat crop of Canada, though usually notable for their effect upon world markets, were this year such as to excite exceptional attention.

Seeding, which in 1926 began in certain areas as early as March 25, had scarcely been attempted before April 25 this year on account of lingering snow and cold weather. Rain and snow hindered operations during the first week in May, and in view of the risks from pre-harvest frosts incident to planting after about May 20, expectations of reduced acreage and production were current early in the month. Progress with seeding during the remainder of May was further hampered by occasional heavy rains, which water-logged the soil already supplied with an abundance of moisture. By the end of May the *Manitoba Free Press* estimated that a tenth of the acreage still remained to be sown, and that the total acreage of the Prairie Provinces would reach only 17.9 million acres as compared with the official figure of 21.9 million acres in 1926. But seeding continued up to the middle of June, a week or 10 days later than had been anticipated, and it became increasingly apparent that the reduction in acreage would prove smaller than had been feared. On June 13 the Canadian Pacific Railway estimated acreage in the Prairie Provinces at 19.5 million acres; and on June 18 the *Manitoba Free Press* raised its estimate to 19.4 million acres. The official estimate as of June 30 for the Prairie Provinces was higher still at 20.4 million acres. For Canada as a whole, according to the official returns as of June 30, the acreage in wheat in 1927 at 21.4 million acres fell below that of 1926 by 1.6 million, a decrease of only 7 per cent as contrasted with earlier expectations of a decrease of 10 to 25 per cent. As of July 31, the figure was raised to 22.3 million, only slightly over half a million acres below the final estimate for last year. Decreases were most marked in Saskatchewan; in Alberta the acreage is reported to be larger this year than last.

Once sown, the crop made satisfactory progress. Rainfall during June and July was ample. As in the spring-wheat region of the United States, cool weather prevented any extensive damage from rust, though rust infestation in its incipient stages was reported from Manitoba and parts of Saskatchewan every few days during July and early August. A heavy hailstorm on July 9 did some damage in central Sas-

[1] The official estimates of acreage and production are apparently not comparable over a series of years. The original figures for 1924–26 have been revised downward sharply, presumably on the basis of the census of 1925, while the figures for 1917–23 remain unchanged. See *Crops and Markets, Monthly Supplement,* December 1926, III, 407, and *Agriculture Yearbook, 1925,* p. 748. If revision of the 1922 figures should be undertaken, it might well appear that the durum crop of that year, estimated at 88 million bushels, was little larger than the crops of 1924 and 1925.

[2] The total spring-wheat crop was officially estimated at 298 million bushels as of August 1. With durum production at roughly 80 million bushels and production in the predominatingly soft spring-wheat states of Idaho, Washington, and Oregon at 40 million bushels, the residue of hard red spring wheat is some 175 million. The progress of rust infestation in August will probably reduce the outturn by at least 10 million bushels.

katchewan and Alberta, and toward the end of the month the prevalence of weeds was mentioned as detrimental. By early August observers agreed that the harvest would not be so late as might have been expected from the delay in seeding, though cutting was certain to begin a week or ten days later than usual—probably not until the last week of August. Hail did some damage early in the month; and frosts were reported on August 1, 7, and 15. The frost of August 7 gave rise to reports that damage was heavy.

The official forecast of Canadian wheat production as of June 30 placed the crop of the Prairie Provinces at 305 million bushels, but the low figure failed to influence the trade in view of the favorable growing weather of early July. The second forecast, as of July 31 (issued August 10), was for 335 million bushels for the Prairie Provinces, 357 million for Canada as a whole. This forecast was considerably below those of other observers.[1] The extent of the damage caused by the frost of August 7 cannot as yet be ascertained, but recent reports indicate that no serious reduction in estimates need be made. With average weather until the completion of harvest, the Canadian crop promises to reach 380 to 400 million bushels, rather more than less. But such an estimate is scarcely other than a guess. Nothing is known of quality as yet; but only an exceptionally wet harvesting season would give rise to a crop as poor as that of last year.

Europe, Excluding Russia

Crop developments in Europe (excluding Russia) during April–July have on the whole resulted in smaller production than was anticipated in the spring. Present indications point to a total crop midway between the average outturn of last year and the record crop of 1925, although acreage is somewhat larger than last year. A mild and damp winter in most countries, with small abandonment, was favorable for heavy production. Throughout northern and western Europe, as in Canada, crops are somewhat late. The situation is difficult to evaluate since the harvest has not been completed in some countries, and estimates of production are still tentative in view of the lack of reliable reports on threshing returns.

In western Europe, crops are apparently larger than last year in all major producing or consuming countries except Italy, where the indicated reduction is only 5 million bushels, and outturns are above average though well below production in 1925. Drought during May reduced yields in southern Italy and Sicily, but the reduced outturn for the country as a whole is partially compensated for by good quality as a result of excellent harvesting weather during late June and July. Last year a wet harvest injured the grain. In France growing conditions were most favorable up to the middle of June, and a crop of large size and good quality was expected. But rainy weather, with local floods, prevailed thereafter to nearly the end of July. Growth was retarded, some lodging occurred, grain cut early was injured, and for a time reports of production were pessimistic. Better weather in August improved prospects. The indications are that the crop will exceed last year's poor yield by around 35–50 million bushels, and will be of average size and fair quality. In Germany weather conditions in the early part of the growing season were less favorable than in France. The cold and rainy weather prevailing in April–June retarded growth but apparently caused no damage; and in July and August warmer weather was beneficial, though local storms did some damage. The crop is somewhat late and estimates of production are of uncertain value. With increased acreage and a fairly favorable late growing season, the outturn might well approximate 115 million bushels, some 20 million bushels above last year's and well above average. In the United Kingdom, May and June were rather unseasonably cold, and

[1] As of August 1, Murray estimated production in the Prairie Provinces at 410 million bushels, while Bryant's estimate was for 384 million. Reports from the Canadian Pacific Railway, the Canadian National Railway, and the *Manitoba Free Press* were equally optimistic at the end of July and the first week of August, before the frost. In view of the possibility that the official figure was compiled to take account of the lateness of the season, the tendency for July 31 official returns to prove too low, subsequent favorable weather, and advices that frost damage was not notable, we are disposed to believe that final outturns will exceed the official July 31 estimate, unless harvesting weather is distinctly bad.

growth was retarded, while rains were too frequent in July. The crop, though somewhat larger than last year's, is apparently only of average size. Other western European countries are harvesting crops larger than those of 1925, and estimates of production have tended upward as a result of the more favorable weather of recent weeks. Much the same may be said of the countries of central and eastern Europe—Poland, Czecho-Slovakia, Austria, and the Baltic States. Latest advices, however, indicate that heavy rains are damaging quality. In the importing countries of Europe as a whole, if allowance is made for some degree of overestimation of last year's production, the crop of 1927 appears to exceed that of 1926 by 70–80 million bushels—a crop distinctly above average in size, but over 100 million bushels smaller than the record crop of 1925.

Except in Jugo-Slavia, crop developments have on the whole proved favorable in the Danubian basin. Drought during May and frosts late in the month created apprehension, and the growing rye crop was seriously damaged. Wheat apparently suffered little except in Jugo-Slavia and in some regions of Roumania; in other regions rains early in June were beneficial. Hot and dry weather during most of the harvesting season was on the whole beneficial to quality; and the trade comments upon wheat of high test weight and strength from Bulgaria, Hungary, and Roumania. In Roumania last year's crop was of light weight and was little sought by importers. Official estimates place the outturn of Bulgaria above that of last year; the Hungarian crop at almost the same figure; the Roumanian slightly lower. Trade reports indicate that the Jugoslavian crop is perhaps 20 or 30 per cent lower, and recent advices indicate that the Roumanian estimate is too high. Presumably production in these exporting countries as a group is somewhat smaller than in 1925 and 1926, though well above average. The good quality of the crops is especially notable this year.

Russia

The acreage sown to wheat in Soviet Russia is reported to be 4 per cent above that of last year, the chief increase being observed in the surplus-producing regions of North Caucasia and the Ukraine. The crop wintered well. Up to June 1 prospects were for a crop even larger than last year's, but drought in southeastern areas and cold and rainy weather in central and northwestern areas were injurious. Harvest began late in June, two weeks earlier than last year, and good yields of winter wheat were reported. The spring-wheat crop in the more northerly regions was average or below in condition. Observers agree that the crop, though by no means poor, will not equal the outturn of 1926; but, in the absence of official data, little can be said with precision or confidence.

Russian observers seem of the opinion that, with the harvesting of the crop, the normal pre-war level of producers' stocks of grain will be again attained.

The Southern Hemisphere

The sowing of winter wheat in Argentina, normally conducted in May and June, was hindered by dry weather, especially in May. Heavier precipitation in June permitted normal though somewhat delayed operations in the northern provinces, but satisfactory rainfall did not occur in the southern and western areas until early July. Apparently, however, farmers made shift to plant whenever light rains permitted the soil to be worked, and by the end of June observers were agreed that acreage would not be so greatly curtailed as had seemed probable in May. Sowing continued under favorable circumstances in July, somewhat later than usual. An official forecast, issued August 17, placed the area sown at 19.4 million acres, slightly above the large acreage of the last two years, and far above average. According to recent reports, growing conditions have been satisfactory.

In Australia also dry weather hindered seeding, particularly in the important producing areas of New South Wales and Victoria. As in Argentina, rainfall was somewhat more satisfactory in July. Recent unofficial advices indicate that the reduction in acreage is slight; but deficient subsoil moisture continues to cause apprehension.

III. WHEAT PRICE MOVEMENTS

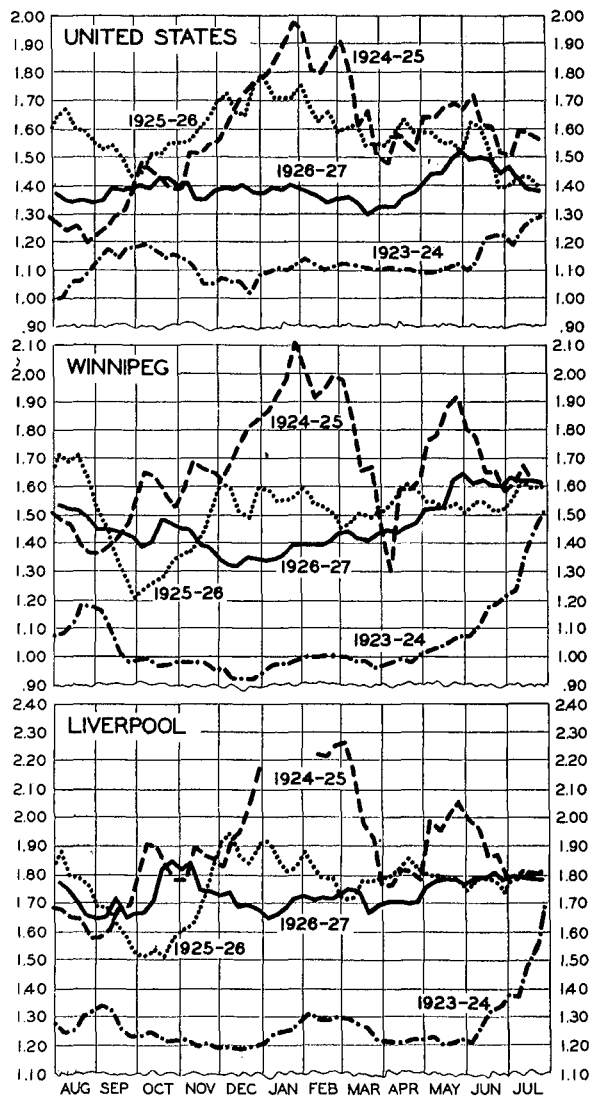
The General Level of Prices

The general level of world wheat prices during the crop year as a whole has ranged far below the level of 1924–25, somewhat below that of 1925–26, but far above that of 1923–24. This is shown broadly in Chart 3. Different margins of exportable surpluses over import requirements in the different years account largely for the contrast.[1] The description of the general level of world prices as shown in Chart 3 is somewhat distorted, however, since No. 1 Northern Manitoba wheat, though usually a premium wheat, has been sold at a premium even higher than usual this year because of the pressing demand for strong wheats in importing countries and the comparatively small proportion of the Canadian crop grading No. 1. The premium has been higher toward the end of the crop year. If price series comparable in comprehensiveness and weighting to the United States series were available for Winnipeg and Liverpool, Chart 3 would probably show a somewhat lower level of 1926–27 prices. The use of the more representative United States price series in depicting the level of world wheat prices for the past few years is misleading in that the United States was on a domestic basis during 1925–26.

Until the end of March, prices in all three markets during 1926–27 fluctuated but slightly. This was in marked contrast with the two preceding years, when a tighter international position and sudden and extensive changes in crop prospects caused wide fluctuations during the winter months. The single large fluctuation in prices during July–March occurred in Liverpool during parts of October and November as a result of a steep advance in ocean freight rates. From April to July, however, 1926–27 prices showed less stability. From the low point late in March to the high point late in May, prices in all three markets rose 20 cents or more—a movement smaller (in Winnipeg and Liverpool) than the sharp increases recorded in 1923–24 and 1924–25, but larger than the fluctuations of April–July last year.

Chart 3.—Weekly Average Cash Prices of All Classes and Grades of Wheat in Five Principal United States Markets, and of No. 1 Manitoba Northern in Winnipeg and in Liverpool, from August 1923*

(U.S. dollars per bushel)



* Data from *Crops and Markets*, direct from the U.S. Department of Agriculture, from the *Grain Trade News*, and from the *Corn Trade News*. The United States prices are weekly weighted averages for six markets since the first week in January 1927. There were no quotations for parcels afloat at Liverpool during January and the first two weeks of February 1925.

In the United States, on the other hand, the amplitude of the April–July price fluctu-

[1] Broomhall's final estimates of margins for the past four years are as follows, in million bushels:

1923–24	232	1925–26	62
1924–25	76	1926–27	115

ations has been much the same during the past four years. The stability of Liverpool and Winnipeg prices in these months of 1925–26 was not reflected in the United States, where a sharp decline in June was recorded as the country returned to an export basis.

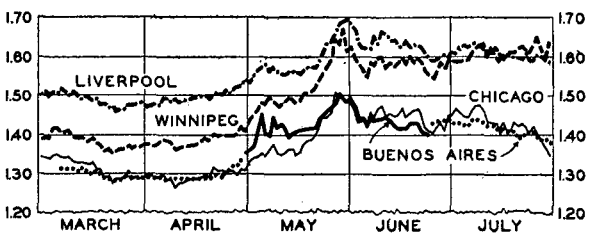
The Course of Prices

The dominant influences on the course of prices during April–July have been new crop developments and fluctuations in importers' demand, operating at times in the same direction, at other times in opposite directions.

Chart 4 shows the course of July futures prices in the world's principal markets. In a broad view, prices in all markets rose from a low point on March 22 to a high point in the last days of May, though a brief recession occurred in the second week in May. From the end of May to the end of July the general course was irregularly downward, except in Winnipeg. On that market, after a sharp recession from the end-May peak, prices tended to move upward, at variance with the course in other markets.

Chart 4.—Daily Closing Prices of July Wheat Futures in Liverpool, Chicago, and Winnipeg, and of June, July, and August Futures in Buenos Aires, March–July 1927*

(U.S. dollars per bushel)



* Data from *Chicago Journal of Commerce* and *Daily Trade Bulletin*, Chicago.

During late March and the first half of April, the gradual upward tendency of prices accompanied active purchasing by European importers. This activity continued during the last half of the month, and its influence was reinforced by delay in seeding the United States spring-wheat crop as well as by a brief spell of freezing weather in the southwestern winter-wheat belt. In the first week in May, a sharp upturn occurred, led by the North American markets. This was due primarily to a snowstorm in Canada on May 2 and 3, which gave rise to fears that seeding, already none too forward, would be delayed further. During this week notably sharp fluctuations were recorded in Buenos Aires prices; in Argentina a special influence existed in a long-continued drought which had hindered the seeding of winter wheat. The slight recession common to all markets in the second week of May was due chiefly to favorable crop developments in North America. The final phase of the advance culminating at the end of May was a sharp rise; from May 16 to the peak at the end of the month,[1] prices rose by 10 to 19 cents, a greater advance in two weeks than had occurred in the preceding six weeks. Delayed seeding in Canada was the principal cause of the advance; but heavy purchasing by importing countries (in part induced by the seeding situation in Canada), and deterioration of the United States winter-wheat crop in the Southwest, were contributing factors. Speculative activity, at least in the United States and Canada, increased during May, especially toward the end of the month.[2] The erratic decline from early June to the end of July was due largely to improvements in North American crop prospects, but a decided slackening of European demand was not without influence. Drought in the southwestern United States was relieved early in the month, and in Canada the seeding of an acreage much larger than had been expected was completed under favorable conditions. Throughout June the weather was for the most part favorable for the harvesting of United States winter wheat, and growing

[1] These peaks were reached on different days in the different markets.

[2] The average daily volume of trading in wheat futures in all United States markets from April to July 1923–24 to 1926–27 has been as follows in million bushels:

	April	May	June	July
1923–24	18.0	14.4	34.0	53.3
1924–25	59.3	60.3	67.6	56.2
1925–26	55.8	48.8	46.3	57.5
1926–27	33.8	50.4	44.8	40.7

For the week ending May 28 the average daily volume of trading was 60 million bushels, as against an average of 35 million for the two preceding weeks.

conditions in the North American spring-wheat belt were excellent.[1] Reports and rumors of the presence of black rust in either the United States or Canada caused most of the sharp advances in prices on particular days in July. But on the whole, with favorable weather, prices tended to sag. Hedging pressure was a factor in the United States toward the end of July.

Throughout both June and July, after a week of heavy purchasing at the end of May, European importers largely withdrew from the market. The higher level of prices —about 10 cents above the March–April level—combined with improved crop prospects in Canada, was doubtless influential. But the large volume of arrivals of wheat and flour in Europe placed purchasers in a favorable situation. Arrivals during March, April, and May, at 15 million bushels per week, had been heavy as compared to a weekly average of 12 million for August–February, while in the six weeks after June 1, arrivals averaged 17 million bushels, with 43 million arriving during the first two weeks of June. The port of Hamburg was so congested that prices in Germany fell below world parity. Partly as a result of the liberal available supplies, even forward purchases from the United States were curtailed,[2] in marked contrast with last year, when Europeans were active purchasers of new-crop winter wheat.

During most of the April–July period, futures prices at Winnipeg displayed a marked tendency to advance more rapidly than prices in other markets. During April, Liverpool prices ranged about 10 cents above Winnipeg prices; but by the end of May the spread was reduced to 2 or 3 cents, and by the end of July prices in Winnipeg were higher than those in Liverpool. This was due largely to the fact that the Winnipeg future, unlike the Liverpool, is based upon No. 1 Northern Manitoba wheat as deliverable on futures contracts, and deliverable grades have been relatively scarce this year. The encroachment of Winnipeg futures upon the Liverpool is shown, though in less marked degree, by comparison of October futures in the two markets (see Chart 5). As might be expected, new crop developments in Canada exerted more influence at home than abroad. A discussion of the influence of Pool policy on price developments must be reserved for a subsequent issue of WHEAT STUDIES.

[1] During June, American traders were inclined to ascribe the weakness of prices in part to the discouragement of speculation induced by the Kessinger bill pending before the Illinois legislature. This bill was thought to involve rigid restriction, perhaps abolition, of futures trading in Chicago. It was defeated on June 30. We find no evidence that the proposed legislation affected the course of prices.

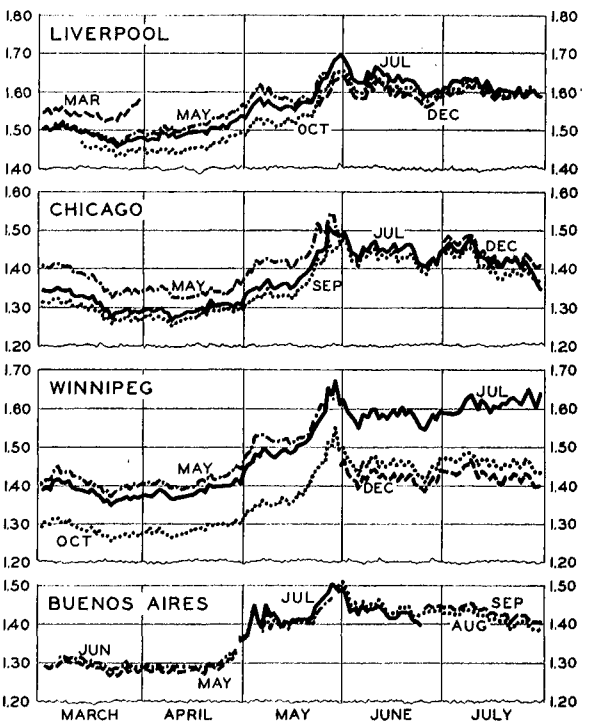
[2] *The Price Current-Grain Reporter* of July 27, 1927, stated that "there is less wheat sold for shipment during August and September than for a number of years."

RELATIONS OF NEAR AND DISTANT FUTURES

Futures prices as quoted in the world's principal markets during March–July are given in greater detail in Chart 5. In Chicago and Liverpool, new-crop (September or October and December) futures have run only slightly below old-crop (May or July)

CHART 5.—DAILY CLOSING PRICES OF PRINCIPAL WHEAT FUTURES IN FOUR LEADING MARKETS, MARCH–JULY 1927*

(U.S. dollars per bushel)



* Data from *Chicago Journal of Commerce* and *Daily Trade Bulletin*, Chicago.

futures, in general reflecting trade opinion that the level of 1927–28 world prices would differ but little from that of 1926–27, and that the international position would remain fairly easy. The relationship contrasts sharply with the situation during April–July last year.[1] In Liverpool, new-crop futures ran from 10 to 15 cents below old-crop futures in view of the then prevailing tightness of the international position and the prospect for a radical change in prices when promising new crops were harvested. The same situation was reflected in the relationships at Winnipeg. In Chicago the spread was even wider in view of a prospective shift from a domestic to an export basis. Only at Winnipeg this year have near futures ranged at a marked premium over the distant, and this has probably been due to a comparative scarcity of wheat grading No. 1.

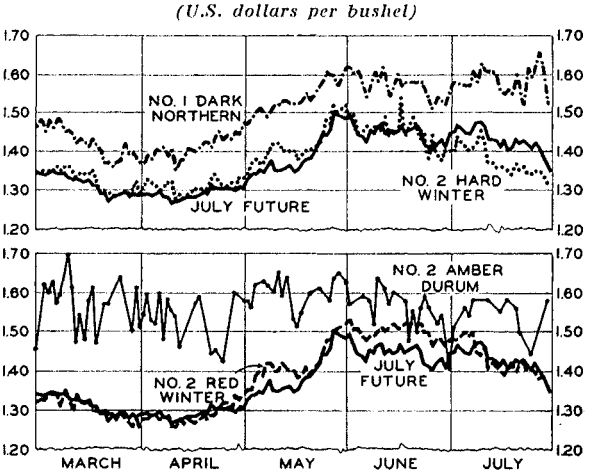
The closing out of futures at Liverpool presents some features of interest. The March future closed at a moderate premium over the July and October; the May at a negligible premium; the July precisely with the October and December. This reflects an increasing abundance of stocks in near positions, caused by arrivals during April–July continuously too heavy to be absorbed by millers. In March arrivals almost as large had passed rapidly into consumption, so that stocks remained small.

United States Cash Prices

In sharp contrast with the transition from an old- to a new-crop basis last year,[2] cash prices of the representative United States wheats during April–July, as shown in Chart 6, have with minor exceptions moved with the course of futures prices, and have presented few peculiarities. No. 1 Dark Northern has continued at a premium not so large as might have been expected in view of the short crop of spring wheat, since the substitution of hard red winter wheat of excellent quality has tended to reduce the premium on hard red spring. As a result of growing certainty that the durum crop of 1927 would prove exceptionally large, the prices of No. 2 Amber Durum at Minneapolis during April–July showed a stronger tendency to decline than was shown for other classes. During parts of May and June, No. 2 Soft Red Winter ranged at a premium over both the July future and No. 2 Hard Winter, apparently because of the comparatively poor prospects for new-crop red winter wheat. When new-crop wheat came on the market in July, cash prices of both classes fell below prices of the July future. A discount naturally appeared earlier on hard than on soft red wheat; but soft red wheat remained at a premium over hard red because of poorer crop prospects for the former class.

Chart 6.—Daily Cash Prices of Representative Wheats in United States Markets, and Closing Prices of the July Future in Chicago, March–July 1927*

(U.S. dollars per bushel)



* No. 2 Hard Winter at Kansas City, No. 2 Red Winter at St. Louis, No. 1 Dark Northern Spring, and No. 2 Amber Durum at Minneapolis. Data from *Chicago Journal of Commerce, Crops and Markets*, and direct from the U.S. Department of Agriculture.

European Prices

Prices of domestic wheat in most countries of Europe during April–July moved broadly with the prices of import wheat in consequence of the comparative stability of exchanges since the beginning of the calendar year. The highest levels of the period were reached in late May, as in exporting

[1] See Wheat Studies, September 1926, II, chart on p. 337.

[2] In 1925–26 the United States was on a domestic basis, and fluctuations in the prices of cash wheats were exceptionally large. See Wheat Studies, September 1926, II, 338–40.

countries, or in early June. In Italy prices fell sharply in June as new-crop wheat came on the markets and unexpectedly large supplies of old-crop wheat were offered. In France also free offering of old-crop wheat depressed prices somewhat during June. In Germany, domestic wheats became so scarce that prices were not quoted at Berlin during the last half of June and early July.

IV. VISIBLE SUPPLIES AND OUTWARD CARRYOVERS

Available information indicates that the stocks of wheat at the end of the crop year were about average in the United States, high in Canada and the Southern Hemisphere, and above the average in afloat positions. Stocks of import wheat were apparently considerably higher in European countries this year than last. Stocks of domestic wheats, though probably exhausted in central and northern European countries, were of fair size in Spain, France, Italy, Roumania, and Russia. On the whole, the world's carryover appears larger this year than last.

VISIBLE SUPPLIES

Chart 7 shows the course of visible supplies in various positions during the past three crop years. Supplementary data on commercial stocks of wheat and flour as of July 1 are summarized, with further comparisons, in Table 7.

For the crop year 1926–27 as a whole, total visibles have run much higher than in 1925–26, when European crops were larger, import requirements and export surpluses smaller, and the United States crop much smaller. The course throughout the year has been similar to that of 1924–25, though visibles have run smaller in the first third of the year and larger in the last third. These differences resulted chiefly from the advance in ocean freight rates in September–November 1926, which restricted the normal movement of wheat and caused stocks afloat to run low in those months; but the decline of rates later led to a prolongation of the seasonally heavy winter movement which helped to maintain stocks afloat at high levels in May and June.

United States visibles (Bradstreet's) have ranged above those of 1925–26, roughly in accord with differences in the size of crops. The low point at the end of the year was reached late in June, at about the same time as last year, but earlier than usual because increasing use of "combines" has apparently hastened the marketing movement. The rise from the low point was less sharp this year than last, partly because the crop of winter wheat in the Southwest is much smaller this year, and partly because farmers have been disposed to restrain their marketings in hope of higher prices.

TABLE 7.—SUMMARY OF PRINCIPAL ITEMS IN WORLD VISIBLE SUPPLIES, JULY 1, 1920–27*

(Million bushels)

July 1	United States	Canada	United Kingdom ports	Afloat to Europe	Total
1920.....	53.2	14.6	10.7	71.3	149.8
1921.....	29.0	13.4	12.0	65.4	119.8
1922.....	42.8	29.7	9.1	51.7	133.3
1923.....	61.9	25.6	5.3	50.5	143.3
1924.....	62.0	45.4	8.4	55.9	171.7
1925.....	51.4	38.4	8.8	42.2	140.8
1926.....	35.8	36.4	4.2	49.1	125.6
1927.....	46.2	45.5	8.4	50.9	151.0
Average 1910–14.....	43.8	15.4	14.7	41.5	115.4
1920–26.....	48.0	29.1	8.4	55.1	140.6

* From Broomhall's *Corn Trade News* and the *Daily Trade Bulletin.*

In late April and early May, Canadian visibles, which during most of the year ran above visibles in 1925–26, declined sharply following the opening of navigation on the Great Lakes. But in late June and July, as demand from importers fell off and shipments declined, visibles ranged higher than in either of the two preceding years. The size of the visibles figures throughout the year, but notably in the closing weeks, indicates that the crop of 1926 was somewhat underestimated.[1] Canadian visibles have run high partly because the large proportion of damp wheat in the crop made early movement from farms to terminals with

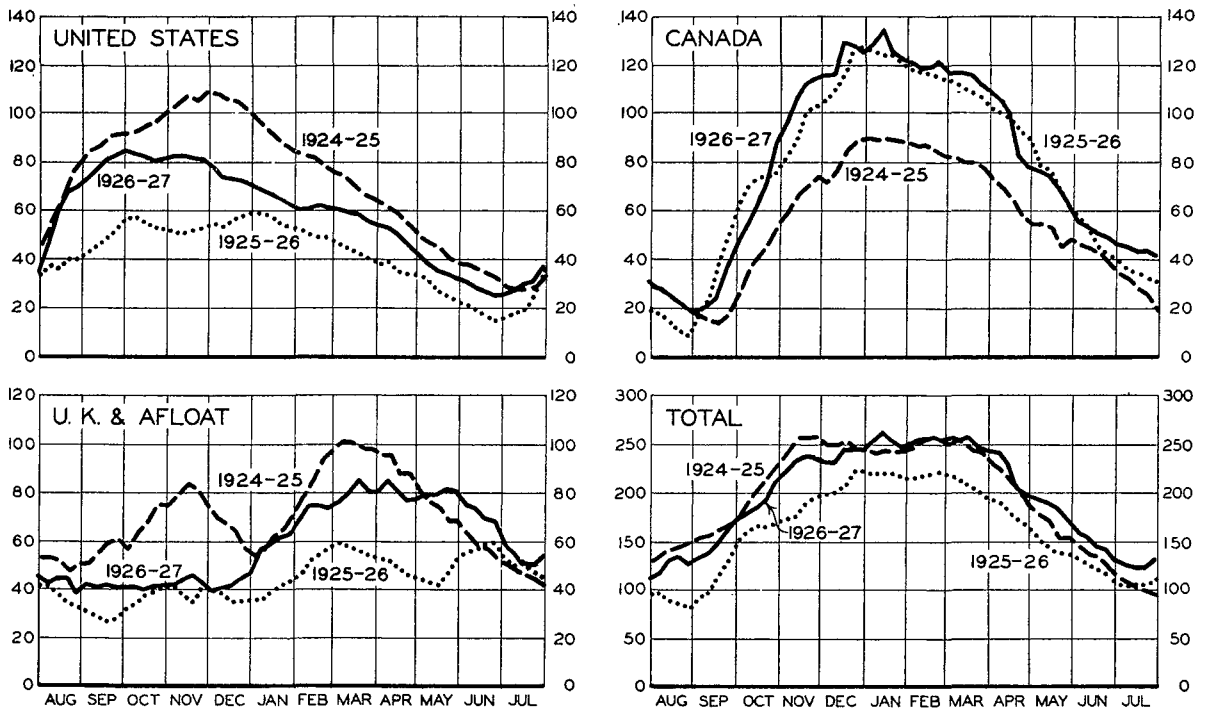
[1] See p. 441 for further discussion.

drying facilities desirable, and partly because the ocean freight rate situation in the autumn curtailed the export movement; but the merchandising policies of the Pool have apparently restricted exportation to some extent in anticipation of higher prices.

Stocks of wheat afloat for Europe and in ports of the United Kingdom ran much above last year's figures in April and May afloat and in ports of the United Kingdom,[1] at 53.9 million bushels, were only 11 million above those of last year. Stocks afloat are larger than in the preceding four years, but not so much larger as might have been expected earlier in the season. Port stocks, which at 8.4 million bushels on July 1 (see Table 7) were nearly twice as large as those of last year following the heavy shipments

CHART 7.—VISIBLE WHEAT SUPPLIES IN THE UNITED STATES, CANADA, UNITED KINGDOM PORTS, AND AFLOAT TO EUROPE, WEEKLY FROM AUGUST 1924*

(Million bushels)



* Data from *Price Current-Grain Reporter* and *Canadian Grain Statistics*.

as a result of the heavier shipments from the Southern Hemisphere, which remain afloat for six or eight weeks, and the earlier opening of lake navigation this year. In March 1924–25 these visibles were higher than in March this year because shipments from the Southern Hemisphere were larger (126.5 million bushels, December–March, as against 110.3 million for the same period this year); but April and May visibles in 1924–25 were smaller than in 1926–27 since in that year the quantities of Canadian wheat available for export from the short crop of 1924 were small at the opening of navigation. By August 1, however, stocks of May and arrivals of June, had declined to 7.8 million on August 1, following the declining shipments of June and July, and stand about 80 per cent above last year's low figure.

UNITED STATES STOCKS, JUNE 30, 1927

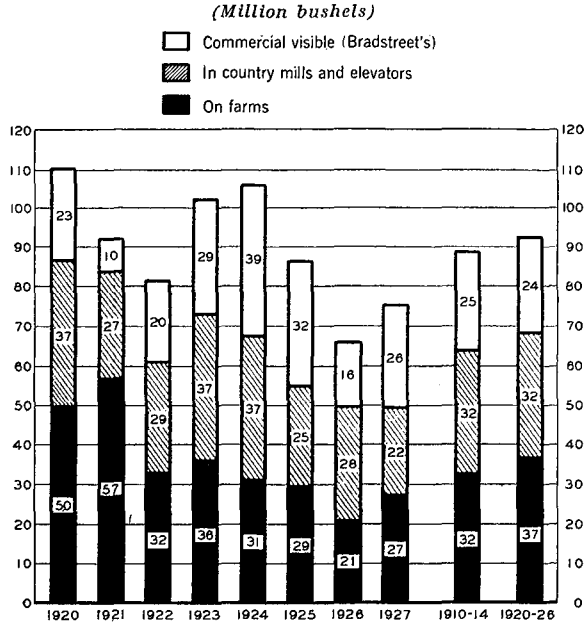
The Department of Agriculture's estimates of wheat stocks on farms and in country mills and elevators, together with Bradstreet's visible, are combined in Chart 8 (p. 440) to show an incomplete statement of the United States carryover on June 30 for

[1] See Appendix Table IX.

recent years. The data are not strictly comparable, for the figures for stocks in country mills and elevators in 1926 and 1927 have apparently been compiled on a new basis.[1] The revised estimate of 1926 stocks is nearly 25 per cent above the figure published last year, and the estimates are now stated to include only old-crop wheat. The total United States carryover, so far as is indicated by these data, is but little larger

CHART 8.—WHEAT STOCKS IN THE UNITED STATES, JULY 1, 1920–27, WITH COMPARISONS*

(Million bushels)



* Official data except Bradstreet's visible, as tabulated in Appendix Table X. Country mill and elevator figures for 1926 and 1927 are estimated on a new basis, and probably are not strictly comparable with figures for earlier years.

this year than last, and somewhat below average size. Stocks on farms and commercial visibles are larger than last year, stocks in country mills and elevators smaller.

The Census Bureau's statement of stocks of city mills as of June 30, with comparable data for the two preceding years in which such information has been compiled, is shown in Table 8. The stocks of the third and fourth items, which are not reported elsewhere, were nearly 18 million bushels above last year's figures. This year mills have accumulated large stocks of the old-crop winter wheat of good quality, in view of the probabilities that new-crop wheat would prove considerably lower in protein content. The carryover calculated to include these stocks as well as visibles and stocks in country mills and elevators and on farms reaches about 145 million bushels as compared with 117 million last year and 135 in 1925—a quantity about average for the post-war period, so far as can be ascertained from incomplete data.

TABLE 8.—UNITED STATES CENSUS REPORTS ON MILL STOCKS OF WHEAT AND FLOUR, JUNE 30, 1925–27

(Million bushels)

	1925	1926	1927
Wheat stocks:			
In country elevators	2.16	2.52	2.56
In public terminal elevators	3.44	3.00	3.88
In private terminal elevators, in transit, and in mills	26.72	30.32	46.15
Total	32.31	35.83	52.59
Wheat-flour stocks in wheat equivalent (*4.7 bu.=1 bbl.*)	15.73	14.67	16.76
Total wheat and flour as wheat	48.04	50.51	69.35

The appearance of the Census Bureau's data for the third consecutive year provides a reasonable basis for adjudging the accuracy of crop estimates for 1925 and 1926. Reasonably accurate information may now be obtained for all items of disposition except feed and waste, for which no direct estimate is made.[2] For 1925, the sum of the Department of Agriculture's present estimates of stocks on farms and in country mills and elevators, of Bradstreet's visible, and of the third and fourth items of the Census Bureau's statements raised to 100 per cent to account for mills not reporting, yields a figure for carryover of 135 million bushels. This figure plus the crop estimate yields total available supplies of 811 million bushels. Deductions for exports, consumption as food, seed requirements, and carryover out (similarly computed) total 786 million bushels. The residue, which must cover feed and waste plus changes in unreported stocks (a minor item in view of the

[1] Details of the new methods of estimation are not as yet available. The 1926 figure was revised from 23 to 28 million bushels, while figures for earlier years have not been corrected.

[2] See Appendix Table XIII.

items now accounted for), is only 26 million bushels. For 1926–27, this residue is 22 million.

These figures seem impossibly low to cover feed and waste. Little is known of this item of disposition. But in 1923 the Department of Agriculture estimated the normal use for feed on farms at 8.1 per cent of the crop—a figure which, if correct, implies a customary usage of 55–65 million bushels yearly for crops ranging from 700 to 800 million. In Canada, moreover, direct estimates are secured for grain lost in cleaning and unmerchantable grain; and these estimates for the past few years yield figures ranging from 4 to 8 per cent of the crop. In the United States feed and waste presumably constitute a higher proportion of the crop than in Canada; and figures for this item of disappearance falling below 4 per cent of the crop, as do the figures for 1925 and 1926, clearly reflect on the accuracy of the crop estimates. In our judgment the crops of 1925 and 1926 were estimated below the truth. They are certainly not comparable with the estimates of the three previous crops, which on similar computation allow an average of 90 million bushels for feed and waste each year, over 10 per cent of the crops. If the estimates for 1922–24 were approximately correct (the figures appear not unreasonable, though they are perhaps somewhat too high) the estimates for 1925 and 1926 must have been some 60 million bushels too low.[1]

Canadian Carryover, July 31

The outward carryover of Canadian wheat (exclusive of flour) on July 31 is officially estimated at 50.6 million bushels in all positions.[2] The figure, well above average, is some 15 million bushels larger than last year's and exceeds even that of 1924, when the record crop of 474 million bushels was harvested. So large a carryover indicates either that the Pool has had difficulty in disposing of poor quality grain, or that its policy has been to restrict the movement to export by asking high prices in anticipation of a poor crop and high prices in 1927–28.

The data on stocks provide material essential for adjudging the accuracy of the crop estimate. If official data on exports, domestic consumption for food, seed, and loss in cleaning and unmerchantable grain[3] are subtracted from the carryover in and the crop estimate, the residue, which should represent the carryover out, is 38 million bushels, some 12 million below the carryover out as estimated directly. It therefore appears that the crop of 1926 was somewhat underestimated. The discrepancy might appear smaller if errors have occurred in the estimation of other items of the calculation.

Southern Hemisphere Supplies, August 1

Statistical information on stocks in Australia and Argentina is as usual deficient. Broomhall's report of visible supplies for Australia,[4] which covers a larger proportion of stocks in all positions than does his report for Argentina, indicates that stocks are higher this year than last. On August 1, visibles were reported at 12.7 million bushels as against 6.2 million in 1926 and a 1920–26 average of 17.6 million. Total stocks, however, can be ascertained only by a process of subtraction. Exports were 102 million bushels. On the assumptions that stocks in all positions were about 28 million bushels on August 1, 1926,[5] that domestic disappearance has been of normal size, and that the crop estimate is accurate, we conclude that the carryover out lies close to 40 million bushels. This figure is above average in view of the large size of last year's crop, and over 10 million bushels above last year's carryover; but it is considerably smaller than seemed probable earlier in the year. Australian wheat has been exported in unusual volume during the past four months, for reasons not altogether clear. Of the available supplies, 15–25 million bushels will probably be available for export.

The stocks position in Argentina is difficult to evaluate on account of deficient in-

[1] The general problem will be further discussed in a forthcoming issue of Wheat Studies.

[2] See Appendix Table X.

[3] See Appendix Table XIII and *Monthly Bulletin of Agricultural Statistics*, April 1927, XX, 121.

[4] See Appendix Table IX.

[5] For the calculations on which this figure was reached, see Wheat Studies, September 1926, II, 343.

formation and conflicting views respecting the disposition of a large quantity of wheat of poor quality from the crop of 1925. Hitherto we have allocated this wheat partly to domestic utilization, partly to carryover in. We are now informed by reputable grain dealers and millers of Europe that a large part of this wheat has been mixed with exports from the good-quality crop of 1926. Accepting the official estimates of production, official data on exports, and raising the official estimates of domestic utilization slightly,[1] we reach a figure for carryover into the crop year 1926–27 of 74 million bushels, and a carryover out, as of August 1, 1927, of 76 million. This figure agrees fairly well with the official estimate of an exportable surplus of 52 million bushels as of July 1, since this figure implies an exportable surplus of about 40 million bushels on August 1 and wheat retained for domestic consumption during August–December must amount to over 30 million bushels if normal requirements are to be met. An indeterminate quantity of the exportable surpluses—probably a small quantity, if our informants are correct respecting the extent of admixture during the past seven months —is of poor quality. Nevertheless it appears certain that Argentine stocks are of unusually large size, and that 25–40 million bushels may be exported before the crop of 1927 is harvested. Our calculations, however, are necessarily tentative.

European Stocks

Little is known of European stocks of import or domestic wheats, neither of which is reported. In view of heavy arrivals in Europe during June and July, following the extraordinarily heavy shipments of April and May, import stocks are apparently of fair size in all major importing countries—certainly larger than last year. Supplies of domestic wheat are reported to be large in central and southern Italy. The free marketing of wheat in France during recent months, and the fluctuation of prices with the international movement, indicate no shortage of domestic supplies in that country. Roumania has exported comparatively little from a large exportable surplus of wheat of mediocre quality, and stocks are apparently large. Spain presumably has stocks of appreciable size, since crops have been large for two successive years. Russian stocks, in view of good crops in two successive years, limited exportation, and a large carryover in, are probably of large size. Elsewhere in Europe supplies of domestic wheat are apparently small. In Hungary and Jugo-Slavia stocks were exhausted by heavy exportation, mostly in the first third of the crop year. Central European countries, where crops were poor last year, are reported to possess very small supplies. In Germany the scarcity of old-crop wheat has been such that prices have not been quoted in Berlin for two months.

On the whole, the European carryover of import wheat is apparently larger than was the case in the two preceding years, while supplies of native wheats (though conditions vary greatly from country to country) are of moderate size, much the same as last year but larger than in 1925.

V. OUTLOOK FOR THE NEW CROP YEAR

Wheat and Rye Crops

The distribution of Northern Hemisphere wheat crops in 1927, as summarized on the basis of the latest available data in Table 9, differs in size and distribution from that of 1926 chiefly in the heavier production in the importing countries of Europe this year. Russia and China excluded, the crop of the Northern Hemisphere is about 100 million bushels larger than that of 1926, assuming that unreported overestimates of European crops last year were offset by unreported underestimates of North American crops. Production is well above average, 50 million bushels below the record outturn of 1923, and about equal to the excellent crop of 1925. North American crops are probably about the same size as those of last year, especially if the outturn of 1926 was

[1] The official Argentine estimates for domestic utilization for the Argentine crop year (January–December) were 77 million bushels for 1926 and 72 million in 1927. These figures are higher than the usual figure of 70 million bushels, and are apparently calculated to include some of the poor-quality wheat. In our judgment they are somewhat too low.

somewhat underestimated; but Canadian production remains uncertain.

India, North Africa, and the Danube basin have crops in the aggregate well above average but little larger than last year's; but quality is said to be much better than in 1926, especially in India, Hungary, and Roumania. The importing countries of Europe, however, promise to reap harvests distinctly smaller only than those of 1921 and 1925, and about 80 million bushels larger than last year's. The chief difference appears with respect to Germany and France, where this year's crops promise to be more than Australia as a result of drought during the sowing season, the combined Argentine and Australian crops may be expected on general statistical principles to prove smaller this year than last. But how much smaller, no one can tell at present.

Rye production in Europe apparently exceeds that of 1926 by a substantial amount. Official estimates for thirteen countries, including Poland, total 391 million bushels as against 346 last year. Numerical estimates for Germany, the European country of largest production (Russia excepted) are not available; but the crop will probably

TABLE 9.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING AREAS, 1920–27*

(Million bushels)

Year	India	North Africa	United States	Canada	Soviet Russia	Lower Danube[a]	Other Europe	Northern Hemisphere ex-Russia	Australia	Argentina	World ex-Russia[b]
1920	378	63	833	263	...	173	775	2,543	146	156	2,893
1921	250	99	815	301	172[c]	212	1,004	2,733	129	191	3,109
1922	367	76	868	400	202[c]	229	815	2,809	109	196	3,163
1923	372	107	797	474	327[c]	267	994	3,063	125	247	3,489
1924	361	85	864	262	382	204	847	2,673	165	191	3,080
1925	331	105	676	433[d]	713	305	1,096	2,998	113	191	3,357
1926	325	90	833	410	810	298	910	2,915	161	221	3,345
1927	334	101[c]	851	400[f]	...	292[c]	989[c]	3,015[c]	...	...	.....
Average 1909–13	352	92	690	197	759	330	1,018	2,725	90	147	3,005
1920–26	341	89	812	363	...	241	920	2,676	135	199	3,205

* Compiled from official data, as published by U.S. Department of Agriculture.

[a] Hungary, Bulgaria, Roumania, Jugo-Slavia.

[b] Excluding China, Turkey in Europe, Brazil, and a number of small producers.

[c] Excluding Transcaucasia and Turkestan.

[d] Includes officially reported apparent underestimate of 21.8 million bushels.

[c] Partially estimated.

[f] Rough approximation used in preference to July 31 official estimate of 357 million bushels.

60 million bushels larger than in 1926. For other countries, a decrease in Italian production is more than offset by increases in smaller producers. Spain, never an important factor in international trade, has a good crop for the third consecutive year.

The crop of Russia, as yet not estimated but probably smaller than that of last year, bids fair more than to suffice for domestic needs. In the Japanese Empire production in 1927 is about the same as last year, slightly below average. Recent advices indicate that production in China and Turkey, countries from which official reports are not available, is considerably larger than in 1926. In view of the record crop of the Southern Hemisphere in 1926 and the possibility of some reduction in acreage in exceed that of 1926. Canada and the United States have crops of good size, some 25 million bushels larger than the poor crops of last year. Present indications point to Northern Hemisphere crops (Russia excluded) nearly 100 million bushels larger than last year's, with most of the increase in Europe. European import requirements of wheat promise to be smaller than last year's in so far as the poor rye crop of 1926 enhanced demand for wheat, though the carryover of rye, especially in Germany, is smaller this year than last.

INTERNATIONAL TRADE

The size and distribution of wheat and rye crops and available information on stocks suggest that international trade in

wheat and flour in 1927–28 will be about of average volume, smaller than in 1926–27 but larger than in 1925–26.

European importing nations, with wheat crops some 75 million bushels larger than last year's and rye crops and stocks of import wheat considerably larger, are likely to import quantities smaller than were taken in 1926–27. The small volume of international trade in recent weeks, coupled with the reluctance of Liverpool wheat futures to follow price advances in Canada and the United States, indicates that European importers are at present well supplied with stocks and that they feel momentarily secure in view not only of oncoming European harvests of better size than last year's, but also of considerably larger carryovers in exporting countries. Serious deterioration of the Canadian crop or poor yields in the Southern Hemisphere might of course alter the situation radically. But if the Canadian crop reaches 380–400 million bushels and an average crop of 320–330 million (some 50–60 million smaller than that of last year) is harvested in the Southern Hemisphere, we are disposed tentatively to adjudge European net imports for 1927–28 between 550 and 600 million bushels.

These figures are of course subject to extensive revision. They are designed merely to express numerically our conviction that European requirements will by no means run as large as requirements in 1926–27, which exceeded our April estimate of 645 million bushels. European importation will be governed not only by the stocks position and the size of crops of wheat and rye at home and abroad, but also by the course of prices and various restrictions of trade. Presumably the French tariff will be raised somewhat, though milling regulations have been slightly relaxed. The Italian tariff will probably continue high, and the high rate of extraction and admixture in flour of other cereals with wheat are still enforced. Poland and Germany will apparently continue to restrict importation of wheat and flour. On the whole, trade restrictions bid fair to be almost as stringent as was the case last year, with relaxation in some countries offset by new measures in others.

Ex-European requirements are always difficult to estimate in view of deficiencies in statistics of production and trade. The evidence indicates, however, that smaller imports will be required this year than last. The Chinese crop is reported to be considerably larger than last year's and trade with the Orient is disturbed by the wars in China. On general statistical principles it seems improbable that so heavy a movement will occur as took place in 1923–24, when prices were very low, or in 1925–26, when crops of rice and wheat were short in China. But importation will probably be fairly large rather than distinctly small, especially if, as seems probable, prices remain at approximately the level of 1926–27.

Exportable surpluses promise not to differ greatly in size and distribution from those of 1926–27, so far as available information indicates. North America, with aggregate crops of about the same size and with carryovers somewhat larger, is apparently in a position to furnish exports about as large as last year's, some 480–500 million bushels, if carryovers out are not materially changed. United States exports bid fair to contain smaller proportions of hard red and soft red winter wheats, larger proportions of Pacific white, durum, and possibly hard red spring. As was the case last year, India has only a small surplus. If the Southern Hemisphere crop is only of average size, supplies available for export may fall some 20–40 million bushels below those of 1926–27, since the smaller crop would not be offset by larger inward carryovers. In Soviet Russia stocks in the hands of peasants at the close of the year were again large. The crop is apparently smaller than last year's, though not in the areas from which exports are made. One cannot anticipate exports either appreciably larger or appreciably smaller than those of last year.[1] Much the same may be said of the Danubian countries. Hungarian and Jugoslavian exports promise to be smaller in view of the smaller rye crop in Hungary and the reduced wheat crop in Jugo-Slavia; but Roumanian exports may increase in view of the much better quality of this year's crop and a carryover apparently of

[1] Russian opinion inclines strongly to the view that larger exports are in prospect; but the world has not forgotten the breakdown of the Russian program in 1925–26.

good size. Russian and Danubian exports may perhaps be facilitated by the operation of an internationally active organization which in effect insures both importers and exporters of the fulfilment of contracts.[1] Prospects are of course uncertain for both Russia and the Danube basin, but on the whole exports can hardly be expected to exceed those of last year.

In summary, we are disposed to estimate that net exports, net imports, exportable surpluses, and importers' requirements will all prove smaller in 1927–28 than in 1926–27. The most notable differences promise to lie in a reduction of French and German imports and in exports from the Southern Hemisphere. The international position, as indicated by the margin of exportable surpluses over importers' requirements, promises to be moderately easy—much the same as was the case last year, considerably easier than in 1924–25 and 1925–26, but much less easy than in 1923–24. The year 1927–28 bids fair to be a normal wheat year, with fewer striking features than any of the last four, and not unlike 1926–27 except for the disturbance of trade and prices caused by the advance in ocean freight rates in that year. These conclusions, admittedly tentative, rest on the assumptions that the Canadian and European crops will prove of much the same size as appears probable from present indications, and that crops in the Southern Hemisphere will be of average size. General improvement in crop prospects might well create a situation not unlike that of 1923–24, when export surpluses were exceptionally large, European requirements only of medium size, and prices very low. General deterioration might create a situation similar to those of 1924–25 and 1925–26, when the international position was tight and prices fluctuated widely.

[1] This organization, the General Superintendence Co., Ltd., with headquarters at Geneva, is handling each year an increasing proportion of European grain imports.

Prices

The level of world wheat prices which will be characteristic of the crop year 1927–28 cannot be foreseen while production, especially in the Southern Hemisphere, but also in certain European countries and Canada, remains uncertain. The statistical expectation, which involves the assumption of an average crop in the Southern Hemisphere and a crop of 380 to 400 million bushels in Canada, is that the level will approximate that of last year. As was the case last year, fluctuations in prices may prove small in the winter months. Actual developments, however, seldom coincide with statistical expectations. It is impossible to foresee either how far or in which direction actual changes in supplies and requirements will deviate from what may reasonably be expected; consequently the level of prices in 1927–28 may prove to be either higher or lower than seems probable at present.

Somewhat more may be said of prices in the United States. It seems clear, in view of the slow movement to export of a crop of large size, that prices in general must remain upon an export basis throughout the coming year. Soft red winter wheat, however, may command a premium as in 1925–26, unless the carryover of this class was disproportionately large. Durum wheat is unlikely to carry the high premium characteristic of 1926–27, since the crop is distinctly large. Premiums for protein are likely to range higher than last year for all classes of winter wheat except Pacific white.

In Italy, France, Belgium, Hungary, and Roumania, where stability of currency has been largely achieved during the past year, prices of domestic wheat will probably fluctuate more in accord with international prices than has been true since the war. The higher grades of Canadian wheat are unlikely to be sold at the exceptionally high premiums of the latter half of 1926–27.

This survey has been written by M. K. Bennett, with substantial assistance from Alonzo E. Taylor and Holbrook Working, and with the aid of Margaret Milliken and the statistical staff of the Institute

APPENDIX

TABLE I.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING AREAS, 1919–27*

(Million bushels)

Year	United States	Canada	India	Australia	Argentina	Chile	Uruguay	Hungary	Bulgaria	Jugo-Slavia	Roumania	Soviet Russia	Mexico
1919	968.0	193.3	280.3	46.0	217.0	19.9	5.9	....	29.8	51.0	66.0	.....	14.2[a]
1920	833.0	263.2	377.9	145.9	156.1	23.2	7.8	38.3	30.0	43.0	61.3	.....	15.0
1921	814.9	300.9	250.4	129.1	191.0	23.6	9.9	52.7	29.2	51.8	78.6	171.7[b]	10.0
1922	867.6	399.8	367.0	109.5	195.8	25.9	5.2	54.7	37.7	44.5	92.0	202.4[b]	13.6
1923	797.4	474.2	372.4	125.0	247.0	28.1	13.3	67.7	36.2	61.1	102.1	326.9[b]	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	381.7	10.4
1925	676.4	433.2[c]	331.0	113.4	191.1	27.5	10.0	71.7	49.6	78.6	104.7	713.0	9.4
1926	832.8	409.8	324.9	160.9	220.8	23.3	10.1	74.9	41.1	71.4	110.9	809.6	10.2
1927	851.1	357.4	334.1	.....	.....	....	....	75.1	44.8	....	108.0	.....	11.1
Average 1909–13	690.1	197.1	351.8	90.5	147.1	20.1	6.5	71.5	37.8	62.0	158.7[d]	758.9	11.5[d]
1920–26	812.4	363.3[c]	340.6	135.5	199.0	25.2	9.5	58.8	35.5	58.3	88.6	372.2	11.8

Year	Morocco	Algeria	Tunis	Egypt	United Kingdom	France	Germany	Italy	Belgium	Netherlands	Denmark	Norway	Sweden
1919	16.4	21.0	7.0	30.1	69.3	187.1[e]	79.7	169.8[f]	10.6	5.9	5.9[f]	1.07	9.4
1920	17.9	8.4	5.2	31.7	56.8	236.9	82.6	141.3	10.3	6.0	7.4	1.00	10.3
1921	23.2	28.2	10.6	37.0	73.8	323.5	107.8	194.1	14.5	8.6	11.1	.97	12.3
1922	12.9	22.6	3.7	36.6	65.2	243.3	71.9	161.6	10.6	6.2	9.2	.64	9.4
1923	20.0	36.2	9.9	40.7	58.5	275.6	106.4	224.8	13.4	6.2	8.9	.59	11.0
1924	28.7	17.2	5.2	34.2	53.9	282.4	89.2	169.8	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	53.0	231.8	95.4	220.6	12.2	4.8	8.8	.60	12.4
1927	25.3	33.0	5.5	....	52.5[g]	.....	.....	215.2	14.5	...	....	.51	....
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
1920–26	20.4	24.1	8.5	36.2	59.3	274.8	95.9	193.3	12.6	6.0	8.7	.68	10.8

Year	Spain	Portugal	Switzerland	Austria	Czecho-Slovakia	Poland	Finland	Latvia	Esthonia, Lithuania	Greece	Japan, Chosen	South Africa	New Zealand
1919	129.2	8.2	3.9	5.1	15.4[h]	22.2[i]	.26	....	3.12	9.8	41.1	5.1	4.6
1920	138.6	10.4	3.6	5.4	26.4	22.7	.27	.39	2.60	11.2	41.1	7.3	6.9
1921	145.2	9.4	3.6	6.5	38.7	37.4	.45	.78	3.27	11.2	39.7	8.4	10.6
1922	125.5	10.0	2.3	7.4	33.6	42.4	.71	.96	4.04	9.6	39.2	6.1	8.4
1923	157.1	13.2	3.6	8.9	36.2	49.7	.69	1.64	3.70	13.4	34.7	6.0	4.2
1924	121.8	8.6	3.1	8.5	32.2	32.5	.79	1.58	3.86	8.3	37.3	7.1	5.4
1925	162.6	11.5	3.5	10.7	39.3	57.9	.93	2.16	6.08	14.2	40.0	8.3	4.6
1926	146.6	8.5	4.0	9.4	34.2	47.1	.92	1.86	5.18	11.2	38.7	8.0	7.5
1927	148.9	11.3	4.3	9.7	....	50.6	.86	....	....	13.3	37.8	...	....
Average 1909–13	130.4	11.8[j]	3.3	12.8	37.9	63.7	.14	1.48	3.63	16.3[j]	32.0	6.0[j]	6.9
1920–26	142.5	10.2	3.4	8.1	34.4	41.4	.68	1.34	4.10	11.3	38.7	7.3	6.8

* Data of U.S. Department 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] Unofficial estimate.
[b] Excluding Transcaucasia and Turkestan.
[c] 1925 figure revised to include official figure of 21.8 million bushels apparent underestimate.
[d] Four-year average.
[e] Includes only part of Alsace-Lorraine.
[f] Old boundaries.
[g] England and Wales.
[h] Bohemia and Moravia only.
[i] Former Russian Poland.
[j] One year only.

TABLE II.—UNITED STATES WHEAT CROP CONDITION ESTIMATES, PRE-WAR AND POST-WAR*

(Percentages of normal)

Date	1909–13 average	1922	1923	1924	1925	1926	1927
	a) WINTER WHEAT						
Dec. 1	88.7	76.0	79.5	88.0	81.0	82.6	81.8
Apr. 1	83.7	78.4	75.2	83.0	68.7	84.1	84.5
May 1	84.7	83.5	80.1	84.8	77.0	84.0	85.6
June 1	79.8	81.9	76.3	74.0	66.5	76.5	72.2
Harvest	79.1	77.0	76.8	77.9	65.9	77.4	75.0
Yield per acre (bu.)	15.6	13.8	14.5	16.6	12.9	17.0	14.5[a]
	b) SPRING WHEAT						
June 1	94.4	90.7	90.2	82.3	87.1	78.5	86.8
July 1	78.2	83.7	82.4	81.9	88.1	64.8	89.7
Aug. 1	75.4	80.4	69.6	79.7	73.9	60.2	86.4
Harvest	74.9	80.1	65.1	82.3	75.0	58.4	....
Yield per acre (bu.)	13.3	14.1	11.2	16.1	13.1	10.5	14.7[b]

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

[a] Preliminary estimate.

[b] Based on August 1 condition estimate.

TABLE III.—CANADIAN WHEAT PRODUCTION FORECASTS AND ESTIMATES, 1922–27*

(Million bushels)

Date	1922	1923	1924	1925	1926	1927
June 30	339	366	319	365	349	325
July 31	321	383	282	375	317	357
Aug. 31	389	470	292	392	399	...
Oct. 31	391	470[a]	272	422	406	...
Dec. 31	400	474	262[b]	411[c]	410	...

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

[a] September 30.

[b] There is fairly convincing evidence that the crop of 1924 was officially underestimated by 15–20 million bushels.

[c] The official estimate of 411 million bushels for the 1925 crop was subsequently supplemented by an officially calculated apparent underestimate of 21.8 million bushels. See *Monthly Bulletin of Agricultural Statistics*, January 1927, XX, 23.

TABLE IV.—WEEKLY WHEAT RECEIPTS AT PRIMARY MARKETS IN THE UNITED STATES AND CANADA*

(Million bushels)

Month	United States				Fort William and Port Arthur				Vancouver			
	1924	1925	1926	1927	1924	1925	1926	1927	1924	1925	1926	1927[a]
Apr.	2.28	2.90	2.61	3.78	.41	1.30	.51	.83	.83	.14	1.19	1.15
	2.12	1.80	3.27	3.49	.47	.74	.68	.64	1.68	.38	1.10	1.27
	1.89	2.84	2.79	2.98	.31	.77	.52	.59	1.75	.24	.93	.54
	2.75	1.95	3.52	3.41	1.86	3.50	.29	4.34	1.42	.28	.69	.77
May	2.92	2.85	3.75	3.28	5.08	3.08	.18	6.86	1.68	.44	.86	.94
	3.76	3.19	3.51	3.60	2.86	2.33	2.17	6.42	1.43	.49	.56	.34
	3.53	2.88	3.09	3.89	2.42	1.12	4.00	3.87	1.30	.43	.35	.14
	3.66	5.19	3.60	5.20	3.30	1.09	4.75	2.96	1.41	.39	.22	.49
	2.95	5.45	4.83	4.92	4.83	1.68	5.13	2.82	.62	.34	.07	.50
June	4.49	5.75	3.68	4.93	4.89	.90	4.89	2.49	.73	.28	.06	.23
	3.55	4.83	3.71	4.09	5.30	.83	2.81	1.99	.66	.38	.04	.11
	4.03	4.61	3.51	4.03	5.23	.89	2.94	1.48	.83	.21	.04	.17
	4.10	5.02	5.67	4.15	4.91	1.01	2.74	1.33	.83	.03	.08	.18
July	1.34	4.95	8.80	7.65	4.32	1.33	1.95	1.33	.42	.05	.05	.06
	6.92	7.59	13.79	8.54	4.55	1.80	2.04	2.07	.62	.05	.10	.07
	8.57	7.75	14.25	10.35	3.03	1.90	1.63	2.89	.30	.06	.06	.04
	10.05	11.67	19.26	11.35	1.73	1.31	1.19	3.10	.13	.03	.01	.02
			25.25	26.01			.92	2.61		.03	.05	.00

* United States data are unofficial figures compiled from *Price Current-Grain Reporter;* 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 data begin with figures for weeks ending April 5, 1924, April 4, 1925, April 3, 1926, and April 2, 1927; Vancouver figures are for weeks ending one day earlier.

[a] Receipts at Prince Rupert included.

TABLE V.—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			
	1923–24	1924–25	1925–26	1926–27	1923–24	1924–25	1925–26	1926–27	1923–24	1924–25	1925–26	1926–27[a]
Aug.	65.3	93.0	43.3	71.6	2.0	1.3	1.2	1.5	.00	.21	.55	.12
Sept.	45.3	82.1	57.9	48.7	28.3	7.1	45.7	32.8	.22	.41	.28	.29
Oct.	40.5	88.0	36.1	37.1	67.1	40.9	53.2	56.1	3.23	3.98	7.04	6.37
Nov.	37.2	60.5	34.1	29.8	72.5	42.7	51.5	60.5	3.04	5.05	9.79	7.22
Aug.–Nov.	188.3	323.6	171.4	187.2	169.9	92.0	151.6	150.9	6.49	9.65	17.66	14.00
Dec.	28.4	36.3	34.9	22.4	51.9	20.3	53.5	26.3	6.76	4.21	6.14	6.63
Jan.	15.9	24.7	21.6	24.6	12.7	4.1	10.5	14.0	7.27	3.84	10.03	6.83
Feb.	19.8	19.9	16.2	21.0	3.9	6.2	4.0	8.6	7.32	2.08	7.74	4.27
Mar.	18.0	17.3	15.1	16.6	2.5	8.5	3.2	6.3	8.09	.74	6.98	5.74
Dec.–Mar.	82.1	98.2	87.8	84.6	71.0	39.1	71.2	55.2	29.44	10.87	30.89	23.47
Apr.	10.1	10.4	14.0	14.4	6.4	8.1	1.8	12.6	6.47	1.02	3.58	3.77
May	15.4	17.6	15.7	19.2	15.8	7.0	17.2	17.3	5.24	1.54	1.20	1.53
June	16.4	21.9	21.0	20.7	21.2	4.1	13.6	7.3	3.05	.74	.22	.63
July	35.1	41.8	77.0	58.8	13.1	6.7	6.4	10.7	1.31	.11	.27	.16
Apr.–July	77.0	91.7	127.7	113.1	56.5	25.9	39.0	47.9	16.07	3.41	5.27	6.09
Aug.–July	347.4	513.5	386.9	384.9	297.4	157.0	261.8	254.0	52.00	23.93	53.82	43.56

* 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 data for 1925–26 and 1926–27 are totals for the four or five weeks ending in each month.

[a] Receipts at Prince Rupert included after October 1.

TABLE VI.—WEEKLY WHEAT AND FLOUR SHIPMENTS BY AREAS OF ORIGIN AND DESTINATION, APRIL–JULY, 1927*

(Million bushels)

Week ending	North America	Argentina, Uruguay	Australia	Russia, Danube	India	Other countries	Total	To Europe	To ex-Europe
Apr. 2	6.65	6.06	4.34	.74	.00	.36	18.15	15.02	3.13
9	7.57	6.34	5.76	1.20	.00	.24	21.11	16.77	4.34
16	6.21	4.18	2.65	1.03	.00	.28	14.35	11.10	3.25
23	7.59	4.94	2.47	.47	.00	.16	15.63	12.52	3.11
30	9.63	6.42	2.52	.44	.00	.36	19.37	15.74	3.63
May 7	12.34	5.09	3.18	.82	.00	.48	21.91	17.17	4.74
14	9.85	5.26	2.86	.79	.00	.40	19.16	16.36	2.80
21	10.87	3.51	3.56	.55	.02	.39	18.90	15.85	3.05
28	11.08	3.89	1.72	.31	.03	.25	17.28	14.84	2.44
June 4	8.66	4.01	2.81	.57	.00	.32	16.37	14.00	2.37
11	8.40	4.35	2.62	.42	.83	.14	16.76	14.43	2.33
18	8.19	2.13	2.31	.16	.15	.24	13.18	10.96	2.22
25	7.33	2.78	2.40	.44	1.05	.28	14.28	11.73	2.55
July 2	3.93	2.74	2.77	.02	.75	.15	10.36	8.62	1.74
9	4.66	1.55	1.81	.17	1.82	.14	10.15	8.57	1.58
16	5.51	2.57	1.45	.13	1.22	.16	11.04	8.66	2.38
23	7.45	3.20	1.98	.11	.80	.30	13.84	11.78	2.06
30	5.79	2.05	1.50	.66	.89	.40	11.29	9.77	1.52

* 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.

TABLE VII.—INTERNATIONAL TRADE IN WHEAT AND FLOUR, MONTHLY, FROM JULY 1926*

(Million bushels)

A.—NET EXPORTS

Month	United States	Canada	India	Australia	Argentina	Chile	Hungary	Jugo-Slavia	Poland	Algeria	Tunis	Egypt
July	18.8	20.7	2.30	2.8	4.5	.08	.81	.40	.15	.44	.46	(.87)[a]
Aug.	34.8	11.6	1.18[b]	2.2	2.6	.02[b]	3.50	1.45	.28	.43	.26	(.68)[a]
Sept.	29.3	13.2	.46[b]	1.6	2.1	.02[b]	3.54	2.27	.06	.68	.34	(.84)[a]
Oct.	22.0	34.9	.77	1.5	1.8	.00[c]	3.75	1.79	(.03)[a]	.11	.29	(.78)[a]
Nov.	17.8	49.6	.93[b]	1.5	1.4	.05[b]	2.50	1.43	.03	.17	.24	(.70)[a]
Dec.	13.0	48.8	.50[b]	6.0	2.1	.00	1.95	.74	(.10)[a]	(.11)[a]	.09	(.67)[a]
Jan.	11.8	16.0	.64[b]	15.2	15.2	.00	1.05	.32	(.27)[a]	(.32)[a]	(.01)[a]	(.70)[a]
Feb.	7.9	14.8	(.18)[a]	14.2	25.2	.04	.75	.16	(.38)[a]	(.45)[a]	(.14)[a]	(.81)[a]
Mar.	8.9	21.0	.27[b]	15.9	27.0	.06[b]	.77	.43	(.75)[a]	(.50)[a]	(.08)[a]	(.58)[a]
Apr.	15.0	22.0	.37[b]	12.4	24.0	.03[b]	.67	....	(1.66)[a]	(.47)[a]	(.18)[a]	(.77)[a]
May	13.2	32.3	.35[b]	13.2	18.7	.04[b]	1.29	....	(2.49)[a]	(.55)[a]	(.25)[a]	(1.05)[a]
June	10.8	19.6	2.88	....	13.3	...	.95	....	(2.34)[a]	....	.16	....
July	11.5	8.8	....	....	....	....	....	....	....	....	....	....

B.—NET IMPORTS

Month	Irish Free St.	United Kingdom	France[d]	Germany	Belgium	Italy	Netherlands	Scandinavia	Switzerland	Czecho-Slovakia	Baltic States[e]	Japan
July	1.55	18.65	1.02	12.04	3.89	8.14	2.09	1.22	2.33	2.79	.71	.01
Aug.	1.50	20.98	2.80	13.59	3.51	3.60	2.26	1.37	1.66	.78	.64	.93[b]
Sept.	1.49	17.48	2.62	5.46	2.78	3.30	3.90	1.48	1.62	2.13	.72	.81[b]
Oct.	1.47	14.62	1.99	6.92	2.42	3.46	2.02	1.82	2.10	1.93	.71	1.47
Nov.	1.57	14.82	1.39	5.97	2.76	6.70	2.34	1.64	1.53	1.86	1.02	1.12[b]
Dec.	1.72	16.71	3.02	5.28	2.88	6.68	1.98	1.45	1.03	2.34	.74	1.43[b]
Jan.	1.16	17.35	7.31	4.76	2.98	8.23	2.03	1.48	.81	.77	.55	1.80[b]
Feb.	1.60	15.81	7.89	4.66	3.31	9.41	2.07	1.17	1.38	1.26	.38	1.31
Mar.	1.83	19.90	7.23	5.66	3.83	11.41	2.31	1.36	1.56	1.53	.51	1.97[b]
Apr.	1.72	18.89	4.61	8.44	3.90	8.83	2.18	1.21	1.08	1.23	.44	1.51[b]
May	1.98	19.06	6.54	10.19	3.51	9.73	2.87	2.05	1.00	1.72	.70	1.78[b]
June	1.99	24.28	6.58	10.65	4.00	7.62	2.43	2.48	1.11	2.98	.72	....
July	....	....	....	....	....	....	....	....	....	....	....	....

* Data from official sources and International Institute of Agriculture.

[a] Net imports.
[b] Gross, not net.
[c] Net imports of 1,200 bushels.
[d] Probably understatements.
[e] Finland, Esthonia, Latvia.

TABLE VIII.—WEEKLY VISIBLE SUPPLIES OF WHEAT IN NORTH AMERICA, UNITED KINGDOM, AND AFLOAT, APRIL–JULY, 1927*

(Million bushels)

Date	United States	Canada	U.K. ports	Afloat to Europe	Total	Date	United States	Canada	U.K. ports	Afloat to Europe	Total
Apr. 2	53.8	109.0	4.8	75.7	243.3	June 4	31.1	56.0	8.8	65.9	161.8
9	52.9	104.7	5.2	79.4	242.2	11	28.5	52.9	9.6	64.8	155.8
16	50.5	99.5	4.4	76.2	230.6	18	26.2	50.3	10.4	59.6	146.5
23	46.2	82.3	5.0	71.5	205.0	25	24.5	49.3	10.6	58.0	142.4
30	42.4	78.3	5.7	71.7	198.1	July 2	25.5	46.0	8.4	50.9	130.8
May 7	38.7	76.3	5.2	74.5	194.7	9	27.7	45.4	8.2	47.3	128.6
14	35.6	74.7	5.6	74.2	190.1	16	29.8	42.8	7.8	44.1	124.5
21	34.4	69.0	6.2	75.6	185.2	23	31.1	43.1	7.6	43.1	124.9
28	32.4	63.4	7.2	73.5	176.5	30	37.5	41.5	8.2	46.1	133.3

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

TABLE IX.—WORLD VISIBLE WHEAT SUPPLIES, AUGUST 1, 1920–27, AND MONTHLY, 1926–27*

(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 Aug. 1	42.7	8.2	3.7	27.5	12.8	76.2	50.9	31.2	89.0	171.1	143.6
1921 Aug. 1	56.2	8.9	3.7	30.0	7.6	57.9	65.1	33.7	65.5	164.3	134.3
1922 Aug. 1	43.1	19.3	2.2	3.0	7.1	48.9	62.4	5.2	56.0	123.6	120.6
1923 Aug. 1	73.3	14.1	4.4	18.0	8.2	39.0	87.4	22.4	47.2	157.0	139.0
1924 Aug. 1	72.1	31.6	6.8	30.0	9.9	41.8	103.7	36.8	51.7	192.2	162.2
1925 Aug. 1	57.3	23.4	7.7	8.4	9.2	33.3	80.7	16.1	42.5	139.3	130.9
1926 Aug. 1	64.2	28.3	4.1	6.2	4.3	38.6	92.5	10.3	42.9	145.7	139.5
Sept. 1	117.1	16.6	4.0	3.6	5.8	35.7	133.7	7.6	41.5	182.8	179.2
Oct. 1	135.1	43.4	4.5	1.4	5.4	35.4	178.5	5.9	40.8	225.2	223.8
Nov. 1	137.4	81.3	3.8	0.0	3.7	37.8	218.7	3.8	41.5	264.0	264.0
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 Jan. 1	123.7	123.4	2.6	81.0	4.7	43.2	247.1	83.6	47.9	378.6	297.6
Feb. 1	110.2	118.9	8.1	80.0	4.7	59.1	229.1	88.1	63.8	381.0	301.0
Mar. 1	104.3	116.7	14.7	64.0	4.2	70.1	221.0	78.7	74.3	374.0	310. 0
Apr. 1	88.7	107.3	14.8	53.0	4.9	75.8	196.0	67.8	80.7	344.5	291.5
May 1	68.8	80.5	16.6	43.5	5.7	71.6	149.3	60.1	77.3	286.7	243.2
June 1	55.1	58.0	13.6	31.5	7.5	65.9	113.1	45.1	73.4	231.6	200.1
July 1	46.2	45.5	9.6	22.5	8.4	50.9	91.7	32.1	59.3	183.1	160.6
Aug. 1	65.9	42.7	6.3	12.7	7.8	46.1	108.6	19.0	53.9	181.5	168.8
Average, Aug. 1											
1910–14	58.8	10.8	1.3	5.9[a]	15.4	35.2	69.6	7.2[a]	50.6	127.4[a]	121.5
1920–26	58.5	19.1	4.6	17.6	8.4	48.0	77.6	22.2	56.4	156.2	138.6

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

[a] For Australia, 4-year average, 1911–14.

TABLE X.—UNITED STATES AND CANADIAN CARRYOVERS OF WHEAT, 1919–27*

(Thousand bushels)

Year	United States (July 1)				Canada (August 31, 1919–23; July 31, 1924–27)				
	Total	On farms	In country mills and elevators	Commercial visible (Bradstreet's)	Total	On farms	In elevators	In transit	In flour mills
1919	49,806	19,261	19,672	10,873	.....[a]	2,149	3,305	.....[a]	.....[a]
1920	110,254	49,546	37,304	23,404	.....[a]	2,122	6,930	.....[a]	238
1921	93,840	56,707	27,167	9,966	13,727	2,144	4,831	6,032	720
1922	81,457	32,359	28,756	20,342	20,590	2,360	11,024	4,578	2,628
1923	102,414	35,894	37,117	29,403	11,690	1,441	5,051	2,758	2,440
1924	106,204	30,981	36,626	38,597	45,159[b]	7,363[c]	27,400[b]	5,856[b]	4,539[b]
1925	86,447	29,357	25,287	31,803	26,483	2,709	17,939	3,835	2,000
1926	65,949	20,973	28,490	16,486	35,601	3,987	25,451	3,163	3,000
1927	74,950	27,359	22,075	25,516	50,586	4,264	37,079	5,243	4,000
Average									
1910–14	89,411	32,485	31,600	25,326	.....[a]	.....[a]	.....[a]	.....[a]	.....[a]
1920–26	92,366	36,545	31,535	24,286					

* Bradstreet's visible, and official data of U.S. Department of Agriculture and Dominion Bureau of Statistics. See especially *Agriculture Yearbooks, Canada Yearbooks, Price Current-Grain Reporter*, and press releases.

[a] Not available.

[b] July 31, as for later years.

[c] For 1924 quantities in farmers' hands relate to August 31; for subsequent years to July 31.

TABLE XI.—WEEKLY CASH PRICES OF REPRESENTATIVE WHEATS IN LEADING EXPORTING AND IMPORTING MARKETS, MARCH–JULY, 1927*

(U.S. dollars per bushel)

Month	United States				Canada		Argentina	Liverpool					
	No. 2 Red Winter (St. Louis)	No. 2 Hard Winter (Kansas City)	No. 1 Dark Northern (Minneapolis)	No. 2 Amber Durum (Minneapolis)	No. 1 Manitoba (Winnipeg)	No. 3 Manitoba (Winnipeg)	Barletta (Buenos Aires)	No. 1 Manitoba	No. 3 Manitoba	Pacific White	No. 2 Winter	Argentine Rosafe	Australian
Mar.	1.32	1.35	1.46	1.54	1.45	1.33	1.32	1.74	1.60	1.62	N.Q.	1.54	1.63
	1.33	1.35	1.46	1.63	1.43	1.31	1.32	1.75	1.63	1.64	1.53	1.56	N.Q.
	1.32	1.33	1.42	1.52	1.42	1.30	1.33	1.74	1.62	1.61	1.52	1.56	1.64
	1.26	1.29	1.38	1.58	1.42	1.29	1.31	1.73	1.56	1.59	1.49	1.53	1.60
Apr.	1.27	1.30	1.39	1.54	1.44	1.31	1.33	1.73	1.55	1.59	1.49	1.53	1.61
	1.29	1.31	1.40	1.55	1.45	1.32	1.32	1.71	1.58	1.61	1.49	1.53	1.59
	1.27	1.29	1.39	1.52	1.43	1.31	1.32	1.69	1.55	1.58	1.49	1.52	1.61
	1.28	1.30	1.42	1.54	1.46	1.33	1.34	1.71	1.57	1.59	1.59	1.52	1.63
	1.32	1.32	1.44	1.49	1.47	1.37	1.35	1.70	1.58	1.61	1.59	1.53	1.63
May	1.37	1.36	1.49	1.59	1.54	1.45	1.46	1.78	1.61	1.67	1.64	1.58	1.69
	1.41	1.41	1.52	1.61	1.52	1.44	1.43	1.78	1.63	1.72	1.57	1.64	1.65
	1.39	1.39	1.53	1.54	1.54	1.45	1.45	1.78	1.52	1.68	1.60	1.61	1.64
	1.46	1.45	1.59	1.61	1.67	1.56	1.48	1.86	1.62	1.70	1.65	1.63	1.70
June	1.51	1.49	1.61	1.61	1.63	1.50	1.50	1.82	N.Q.	N.Q.	1.64	1.75	1.73
	1.50	1.45	1.59	1.58	1.62	1.50	1.47	1.83	N.Q.	N.Q.	1.67	1.67	1.71
	1.51	1.45	1.58	1.59	1.61	1.49	1.44	1.79	N.Q.	N.Q.	1.66	1.70	1.70
	1.51	1.44	1.57	1.54	1.58	1.47	1.45	1.80	N.Q.	1.67	1.65	1.66	1.69
July	1.47	1.40	1.53	1.51	1.60	1.51	1.47	1.79	1.65	1.63	1.63	1.63	1.69
	1.47	1.41	1.58	1.56	1.64	1.54	1.48	1.80	1.68	1.61	1.62	1.63	1.68
	1.43	1.39	1.60	1.56	1.60	1.51	....	....	1.68	....	....	1.64	....
	1.41	1.36	1.56	1.53	1.62	1.54	....	....	1.68	....	....	1.61	....
	1.39	1.34	1.61	1.49	1.60	1.52	....	....	1.65	....	....	1.61	....

* United States prices from *Crops and Markets;* foreign prices from *International Crop Report and Agricultural Statistics,* except Rosafé and No. 3 Manitoba at Liverpool, which are from Broomhall's *Corn Trade News,* and No. 3 Manitoba at Winnipeg, which is from the *Grain Trade News.* United States prices are weekly averages of daily weighted prices for weeks ending Friday. Foreign prices are for Friday of each week, except Rosafé and No. 3 Manitoba at Liverpool, which are for Tuesday of the same week. "N.Q." signifies no quotation.

TABLE XII.—MONTHLY PRICES OF DOMESTIC WHEAT IN EUROPE, FROM AUGUST 1924*

(U.S. dollars per bushel)

Month	Great Britain			France (Chartres)			Italy (Milan)			Germany (Berlin)		
	1924–25	1925–26	1926–27	1924–25	1925–26	1926–27	1924–25	1925–26	1926–27	1924–25	1925–26	1926–27
Aug.	1.54	1.53	1.76	1.50	1.62	1.61	1.40	1.88	1.85	1.29	1.55	1.75
Sept.	1.45	1.48	1.46	1.54	1.57	1.77	1.49	1.94	2.03	1.46	1.38	1.71
Oct.	1.52	1.34	1.48	1.62	1.48	1.88	1.77	1.94	2.21	1.47	1.37	1.72
Nov.	1.56	1.45	1.62	1.71	1.37	1.96	1.83	1.99	2.20	1.37	1.49	1.78
Dec.	1.54	1.60	1.55	1.77	1.33	1.78	1.94	2.12	2.31	1.44	1.62	1.74
Jan.	1.66	1.60	1.55	1.87	1.39	1.88	2.21	2.17	2.13	1.64	1.61	1.72
Feb.	1.74	1.54	1.54	1.89	1.42	1.81	2.31	2.16	2.11	1.63	1.60	1.72
Mar.	1.70	1.51	1.52	1.87	1.39	1.70	2.09	2.14	2.11	1.63	1.66	1.73
Apr.	1.58	1.57	1.50	1.77	1.40	1.82	1.86	2.20	2.02	1.60	1.87	1.76
May	1.64	1.75	1.58	1.85	1.39	1.91	1.93	2.19	2.16	1.70	1.92[a]	1.92
June	1.67	1.77	1.65	1.75	1.52	1.88	1.80	2.20	1.99	1.73	N.Q.	1.96[b]
July	1.55	1.84	1.64	1.64	1.53	1.81	1.63	1.98	....	1.74	N.Q.	....

* 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. "N.Q." indicates that no quotation was given.

[a] First half of May. [b] First half of June.

TABLE XIII.—APPROXIMATE DISPOSITION OF WHEAT SUPPLIES IN FOUR LEADING EXPORTING COUNTRIES, 1925–26 AND 1926–27*

(Million bushels)

	United States (July–June)		Canada (Aug.–July)		Argentina (Aug.–July)		Australia (Aug.–July)	
	1925–26	1926–27	1925–26	1926–27	1925–26	1926–27	1925–26	1926–27
Initial stocks	135.0[a]	117.4[a]	25.5[b]	34.8[b]	57.2	73.9	36.2	28.4
New crop	676.4[c]	832.8[c]	433.2[d]	409.8[c]	191.1	220.8	113.4	160.9
Total supplies	811.4	950.2	458.7	444.6	248.3	294.7	149.6	189.3
Seed requirements	83.3	85.0	39.8	40.0			11.0	11.0
Consumption	491.5[e]	492.4[e]	42.3	42.0	80.0[f]	75.4[f]		
Feed and waste	25.8[g]	21.7[g]	17.7	19.9[g]			33.0	33.6
Stocks at end	117.4[a]	144.8[a]	34.8[b]	50.0[b]	73.9[f]	75.7[f]	28.4	42.3
Total deductions	718.0	743.9	134.6	151.9	153.9	151.1	72.4	86.9
Net exports	93.4[h]	206.3[h]	324.1	292.7	94.4	143.6[i]	77.2	102.4[i]

* Based upon official data as far as possible. Data are more comprehensive and accurate for the United States and Canada than for Argentina and Australia.

[a] This figure includes United States Department of Agriculture estimates for wheat stocks on farms and in country mills and elevators; Bradstreet's visible; and the census figures for otherwise unreported city mill stocks of wheat and flour raised to 100 per cent, with flour converted at 4.7 bushels per barrel. (See text, p. 440.) The 1926 and 1927 country mill and elevator figures have been officially estimated on a new basis, and are probably not strictly comparable with the 1925 figure included in the initial stocks figure for 1925–26.

[b] The official Canadian carryover estimate which is not identical with the official figure for stocks of wheat in store on the same date.

[c] For evidence that these official figures are underestimates, see above, pp. 440–41.

[d] Official estimate of 411.4 million bushels plus officially calculated apparent underestimate of 21.8 million bushels. See *Monthly Bulletin of Agricultural Statistics*, January 1927, XX, 23.

[e] Calculated from population estimates, estimates of per capita flour consumption, and rates of extraction reported for identical mills to Census Bureau adjusted to cover all mills.

[f] Arbitrary distribution between domestic use and carryover. The 1925 crop included a large quantity of poor quality wheat, which makes evaluation of the stocks position in that year especially difficult.

[g] Calculated as a residual.

[h] Including shipments to possessions of 2.6 and 3.0 million bushels respectively.

[i] Preliminary estimate.

FOOD RESEARCH INSTITUTE PUBLICATIONS

MISCELLANEOUS PUBLICATIONS

No. 1. STALE BREAD LOSS AS A PROBLEM OF THE BAKING INDUSTRY

By J. S. DAVIS and WILFRED ELDRED

Discusses an important source of financial loss and economic waste, and methods of reducing them.
Published February 1923. 70 pp., 8vo. Paper, 50 cents

No. 2. THE AMERICAN BAKING INDUSTRY 1849-1925

AS SHOWN IN THE CENSUS REPORTS

By HAZEL KYRK and J. S. DAVIS

"A comprehensive commercial analysis of the growth and development of the American baking industry." "An outstanding contribution to the baker and every student of food economics." "Vital information condensed into the form of an interesting narrative."

Published September 1925. 108 pp., 8vo. Cloth, $1.50; paper, $1.00

No. 3. COMBINATION IN THE AMERICAN BREAD-BAKING INDUSTRY

WITH SOME OBSERVATIONS ON THE MERGERS OF 1924-25

By CARL L. ALSBERG

Deals with the striking merger movement in the light of the technical and economic conditions of the industry. Considers its significance for competing bakers, and for flour millers, investors, and the public at large. Not a financial appraisal, an attack, or a defense, but an objective analysis.

Published January 1926. 148 pp., 8vo. Cloth, $2.00; paper, $1.50

RECENT CONTRIBUTIONS

(Reprints available free on request)

G 29. "The Development and Purposes of Farm-Cost Investigation in the United States," M. K. Bennett. *Quarterly Journal of Economics,* February 1926

G 30. "Practical Applications of Correlation Studies of Prices," Holbrook Working. *Journal of Farm Economics,* April 1926

G 34. "Wheat and Wheat Flour," A. E. Taylor. *Annals of the American Academy of Political and Social Science,* September 1926

G 35. "A Criticism of the Index of Farmers' Real Income," Joseph S. Davis. *Journal of Farm Economics,* October 1926

G 36. "Wheat Prices and Marketing Policies," Holbrook Working. *American Co-operation,* 1926

G 37. Review of *The Agricultural Problem in the United States,* by National Industrial Conference Board, J. S. Davis. *Journal of the American Statistical Association,* March 1927

ER 11. "The Structure of Starch Grains from Wheat Grown under Constant Conditions," H. L. Van De Sande Bakhuyzen. *Proceedings of the Society for Experimental Biology and Medicine,* 1926

ER 12. "Studies upon Starch," C. L. Alsberg. *Industrial and Engineering Chemistry,* February 1926

ER 13. "The Crystallization of Starch," H. L. Van De Sande Bakhuyzen. *Proceedings of the Society for Experimental Biology and Medicine,* 1926

ER 14. "Preparation of Starch Solution for Use in Iodimetric Titrations," C. L. Alsberg, E. P. Griffing, and J. Field, II. *Journal of the American Chemical Society,* May 1926

ER 15. "The Crystallization of Starch," Carl L. Alsberg and E. P. Griffing. *Proceedings of the Society for Experimental Biology and Medicine,* 1926

ER 16. "Physiological Phenomena at the Time of Flowering," H. L. Van De Sande Bakhuyzen. *Proceedings of the Society for Experimental Biology and Medicine,* 1926

ER 17. "Growth and Growth Formulas in Plants," H. L. Van De Sande Bakhuyzen. *Science,* December 31, 1926

ER 18. "The Growth Curve in Annual Plants," H. L. Van De Sande Bakhuyzen and Carl L. Alsberg. *Physiological Reviews,* January 1927

ER 19. "The Behavior of the Prolamins in Mixed Solvents: III. The Denaturation of Wheat Gliadin," M. J. Gottenberg and C. L. Alsberg. *Journal of Biological Chemistry,* June 1927

(More complete list on request)

FOOD RESEARCH INSTITUTE PUBLICATIONS

WHEAT STUDIES

Each volume contains a comprehensive review of the world wheat situation during the preceding crop year, three careful surveys of current developments, and six special studies. Individual issues may be purchased separately—the review numbers at $2.00 each, the survey numbers at $1.00 each. The special studies in the completed volumes are listed below.

VOLUMES I and II

DECEMBER 1924—SEPTEMBER 1926

376 and 368 folio pages, respectively, including analytical index, bound in red buckram
Price $10.00 each

Vol. No.

I. 2. *Current Sources Concerning Wheat Supplies, Movements, and Prices: A Select List, with Comments.* January 1925. $1.00
I. 4. *The Dispensability of a Wheat Surplus in the United States.* March 1925. $1.00
I. 6. *Farm Costs of Wheat Production in the North American Spring-Wheat Belt.* May 1925. $1.00
I. 7. *European Wheat Production as Affecting Import Requirements.* June 1925. 50c
I. 8. *Canada as a Producer and Exporter of Wheat.* July 1925. $2.00
I. 9. *The Disposition of American Wheat Supplies: A Critical Appraisal of Statistical Procedures.* August 1925. $1.00
II. 3. *A National Wheat-Growers' Co-operative: Its Problems, Opportunities, and Limitations.* January 1926. $1.50
II. 4. *Protein Content: A Neglected Factor in Wheat Grades.* February 1926. 50c
II. 5. *Price Spreads and Shipment Costs in the Wheat Export Trade of Canada.* March 1926. $1.00
II. 7. *Wheat Acreage and Production in the United States since 1866: A Revision of Official Estimates.* June 1926. $1.00
II. 8. *The Decline in Per Capita Consumption of Flour in the United States.* July 1926. $1.00
II. 9. *A Selected Bibliography of Publications, 1920–25, Relating to the World Wheat Situation.* August 1926. $1.00

VOLUME III

NOVEMBER 1926—SEPTEMBER 1927

Subscription price for ten issues, including temporary binder, $10.00

No.

1. *American Importation of Canadian Wheat.* November 1926. $1.50
2. *The World Wheat Situation, 1925–26: A Review of the Crop Year.* December 1926. $2.00
3. *Survey of the Wheat Situation, August to November, 1926.* January 1927. $1.00
4. *The McNary-Haugen Plan as Applied to Wheat: Operating Problems and Economic Consequences.* February 1927. $1.00
5. *The McNary-Haugen Plan as Applied to Wheat: Limitations Imposed by the Present Tariff.* March 1927. $1.00
6. *Survey of the Wheat Situation, December 1926 to March 1927.* May 1927. $1.00
7. *Comparative Levels of Wheat Prices in the United States and Canada.* June 1927. 50c
8. *India as a Producer and Exporter of Wheat.* July 1927. $2.00
9. *Reactions in Exporting and Importing Countries to Changes in Wheat Prices.* August 1927. 50c
10. *Survey of the Wheat Situation, April to July, 1927.* September 1927. $1.00

For subscriptions, completed volumes, and individual publications, address

FOOD RESEARCH INSTITUTE

PALO ALTO, CALIFORNIA
STANFORD UNIVERSITY BRANCH

European subscriptions to WHEAT STUDIES, at £2 2*s*., will be accepted by the Northern Publishing Co., Ltd., 16, Fenwick Street, Liverpool, England

ANALYTICAL INDEX

ANALYTICAL INDEX