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

OF THE FOOD RESEARCH INSTITUTE

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MAY 1931

SURVEY OF THE WHEAT SITUATION

DECEMBER 1930 TO MARCH 1931

INTERNATIONAL wheat prices declined sharply in December 1930, but remained strikingly stable at an extremely low level in January–March 1931. The decline in December was occasioned largely by a shrinkage in European demand following a heavy accumulation of stocks. Although available wheat supplies in the exporting countries continued extraordinarily large in January–March and European demand remained inactive, the international market was not subjected to severe selling pressure. Ex-European countries imported relatively large quantities; exports from Russia fell off sharply; sales were not pressed from the Southern Hemisphere and Canada; the price of wheat was pegged (under a valorizing rather than a stabilizing operation) by the Grain Stabilization Corporation in the United States, so that exports from the United States were strikingly small.

The outlook for developments in April–July 1931 is full of uncertainties. Under ordinary weather conditions—which, of course, may not prevail—the Northern Hemisphere and world wheat crops of 1931 seem likely to fall below those of 1930. If so, international wheat prices may reasonably be expected to rise, the more so because European demand may become more active, while selling pressure on the international market may be no heavier than it was in January–March. The volume of international trade in April–July may exceed that of December–March; and world net exports in 1930–31 may approximate 805 million bushels. Year-end stocks in the four major exporting countries, in Europe ex-Russia, and afloat to Europe seem likely in the aggregate to exceed the heavy stocks of August 1, 1930, but to fall below those of 1929. Relatively the heaviest stocks may be held in the United States, Canada, and Australia; relatively the lightest, in the European importing countries as a group.

STANFORD UNIVERSITY, CALIFORNIA

May 1931

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

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. Subjects of issues published in recent volumes are listed inside the back cover.

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The Food Research Institute was established at Stanford University in 1921 jointly by the Carnegie Corporation of New York and the Trustees of Leland Stanford Junior University, for research in the production, distribution, and consumption of food.

SURVEY OF THE WHEAT SITUATION

DECEMBER 1930 TO MARCH 1931

In comparison with most earlier years, the volume of international trade in wheat and flour in December-March 1930-31 was rather small, though not so small as in 1929-30. A heavy accumulation of import wheat stocks prior to December enabled European importers to restrain their purchases later; as a result, and also because Russian and North American shipments declined at about the same time, the course of trade showed a decline much larger than usual between November and December, and remained at a relatively low though a rising level in January-March. The ex-European countries in the aggregate took quantities notably large in contrast with their takings in August-November 1930 or December-March 1929-30, and indeed in contrast with average takings in December-March. Available supplies considered,

Australia was perhaps relatively the most active of the major exporting countries, though it is impossible to ascertain whether or not Russian exports were heavy or light in proportion to the supplies available for export. Exports from the United States were strikingly small on account of the manner in which domestic prices were held above international prices by the operations of the Grain Stabilization Corporation.

As of the end of March, wheat stocks in Europe ex-Russia, afloat to Europe, and in the four major exporting countries appear in the aggregate to have stood at the highest level of post-war years except 1929. The aggregate stocks in the importing countries and afloat to Europe appear to have been small rather than large. The exporting countries (aside from Russia, about which inferences cannot be well founded) held the notably large stocks, and among these relatively the heaviest accumulations were in the United States, Canada, and Australia. A good deal of wheat, however, was held

on farms in the United States and Canada, and possibly in Argentina; and in the United States a large fraction of the total stocks was owned by the Grain Stabilization Corporation, which may be described as a firm holder.

After a break in December when shrinkage in European demand was an important factor, international wheat prices remained strikingly stable at a very low level throughout January-March. The slower pace of the export movement from Russia, the rather active demand from the Orient, less of a disposition to press export sales from the Southern Hemisphere and Canada than might have been expected to appear on the basis of the large supplies in those areas, and in the United States the price-pegging operations of the Grain Stabilization Corporation, combined to prevent

severe selling pressure on the international market even in the face of inactive demand from Europe. These developments in turn were affected by weather conditions, the course of marketing from farms, and other factors considered in some detail in subsequent pages.

In the United States, the operations of the Grain Stabilization Corporation, which are to be described as valorization rather than as stabilization, kept the price of the Chicago old-crop futures far above the corresponding Liverpool futures, reducing United States exports to a minimum. It now appears that the compelling motive in this valorization was support of public psychology in the downward phase of the trade cycle, and support of banking institutions—not support of the wheat price alone. It was credit support rather than price support. In retrospect the motives that instigated the action may assume importance, for price-pegging as a credit measure presumably provokes but limited appeal as a precedent;

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in the light of the compelling motive, the announced intention not to support prices of the crop of 1931 follows more logically than otherwise it would do. The pegging of the price reacted unfavorably upon such cash grain merchants as lean heavily upon hedging accounts, and also upon the milling industry. The pegged old-crop wheat price and the unpegged new-crop price have rendered the conduct of milling uneconomical and hazardous, depriving millers of customary hedging during the remainder of the crop year and exposing them to a potentially precipitous price decline in transition to the new crop year. This need not have occurred, and does not seem to lie within the intent of the Agricultural Marketing Act. It is publicly known that some steps have been taken to relieve the embarrassment of the milling industry, but thus far such steps seem to have accomplished little other than to facilitate flour exports, mostly from the Pacific Coast.

As usual, the outlook for significant developments in the world wheat situation during the closing four months of the crop year is full of uncertainties. Briefly, current available information and analysis of developments in earlier years, together with certain assumptions and predications as to developments in the trade cycle and the feed grain situation, lead us to suppose

that with ordinary weather conditions, the Northern Hemisphere and world wheat crops of 1931 are somewhat more likely to fall below than to equal or to exceed those of 1930. If so, international wheat prices may reasonably be expected to rise, the more so because European demand may become more active, while selling pressure on the international market may be no heavier than it was in January-March, when prices remained stable. The volume of international trade in April-July seems likely to exceed that of December-March; for the crop year as a whole, it now seems probable that world net exports may approximate 805 million bushels. Year-end stocks in the four major exporting countries, in Europe ex-Russia, and afloat to Europe seem likely in the aggregate to exceed the heavy stocks of August 1, 1930, but to fall below those of 1929. Relatively the heaviest stocks—indeed, stocks of record post-war size—may be held in the United States, Canada, and Australia; relatively the lightest, in the European importing countries as a group. Needless to say, these conclusions rest upon necessary assumptions, particularly as to weather conditions, that may well prove to be unsound, and upon current information that, as usual, is in many respects incomplete and in some respects of uncertain reliability.

I. INTERNATIONAL TRADE

VOLUME AND COURSE OF TRADE

As measured by Broomhall's shipments of wheat and flour, the volume of international trade during December-March was some 50 million bushels larger than during the corresponding period last year; nevertheless, this volume appears small in comparison with shipments in several recent years, as may be seen in Table 1. For the first two-thirds of the present crop year, however, total shipments (almost 105 million bushels higher than during the same months of 1929-30) do not appear notably small.

These facts suggest that the course of trade during August-March deviated from the usual course, a situation clearly portrayed by Chart 1, which shows the relation-

ship between the monthly shipments of 1930-31, 1929-30, and average shipments by months for the period 1921-22 to 1929-30, in total, to Europe, and to ex-Europe. As is apparent in the chart, total shipments of December-March 1930-31 were decidedly smaller than the shipments of the preceding August-November, whereas under ordinary circumstances the reverse relationship obtains. During the past decade such a disturbance of the normal seasonal movement occurred only once before, in 1929-30. Despite the fact that the monthly movement of trade in the present season has deviated less markedly from the average monthly movement than it did last year, several strikingly unusual features characterize the curve for 1930-31. Aside from the generally higher level of trade during August-No-

TABLE 1.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR TO EUROPE AND TO EX-EUROPE, AUGUST–MARCH AND DECEMBER–MARCH, 1920–21 TO 1930–31*

(Million bushels)

Year	December–March (17 weeks)			August–March (34 weeks)		
	Total	To Europe	To ex-Europe	Total	To Europe	To ex-Europe
1920–21..	181.4	164.9	16.5	355.6	326.9	28.7
1921–22..	223.6	180.8	42.8	441.0	365.4	75.6
1922–23..	225.9	196.0	29.9	444.7	385.2	59.5
1923–24..	270.1	203.0	67.1	492.0	380.5	111.5
1924–25..	272.0	242.1	29.9	527.0	470.5	56.5
1925–26..	234.7	175.6	59.1	442.2	342.3	99.9
1926–27..	299.1	252.8	46.3	531.9	449.1	82.8
1927–28..	272.7	222.9	49.8	524.6	443.8	80.8
1928–29..	346.1	245.3	100.8	631.2	477.3	153.9
1929–30..	188.4	140.0	48.4	407.6	312.0	95.6
1930–31..	241.6	169.6	72.0	512.0	397.6	114.4
Average						
1909–14..	189.9	161.9	28.0	406.5	353.0	53.5
1925–30..	268.2	207.3	60.9	507.5	404.9	102.6

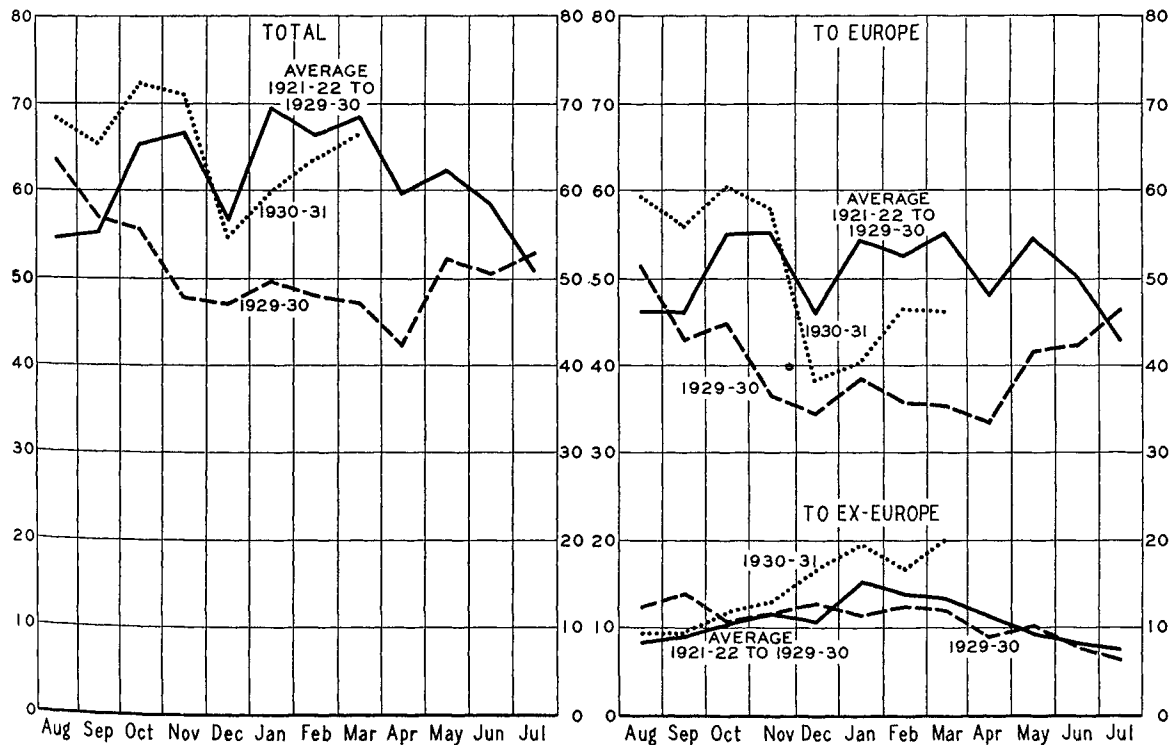
* Data from Broomhall's *Corn Trade News*.

ember as compared with December–March, the large decline in shipments from November to December was striking (during the preceding nine years the change between those two months had been larger only in 1922–23 and 1924–25); and while the increase from December 1930 to January 1931 was smaller than average, shipments increased between January and February 1931, whereas in previous years they have usually declined.

Since shipments to ex-European countries in December–March were larger than in the corresponding period of any post-war year other than 1928–29, and since unusually large supplies were available for export in the major exporting countries, it is evident that the moderate volume of international trade during the period is to be ascribed mainly to relatively inactive import demand for wheat in Europe. To Europe also must one look, in the main, for

CHART 1.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR IN TOTAL, TO EUROPE, AND TO EX-EUROPE, BY MONTHS, AUGUST 1929–MARCH 1931, AS COMPARED WITH AVERAGE SHIPMENTS 1921–22 TO 1929–30*

(Million bushels)



* Compiled from Broomhall's weekly shipments published in the *Corn Trade News*. See Appendix Table IX for weekly shipments during December–March 1930–31.

an explanation of the reversal of the ordinary relationship between August–November and December–March shipments. On the other hand, the special peculiarities of the monthly movement of wheat during December–March are probably to be attributed chiefly to the weather factors and the wheat supply factors¹ operating to cause a sudden decline in Russian shipments, and to the retardation of the movement of the new Southern Hemisphere crops (especially the Argentine crop) caused by heavy rains in December and January.

A number of circumstances probably combined to restrict the import demand of European countries during December–March. Of these circumstances presumably none was more important than the large wheat shipments to Europe during August–November. As a result of these shipments the stocks of foreign wheat on December 1 were unusually large in the United Kingdom, Holland, Belgium, Italy, and a number of smaller importing countries; hence during December–March importers and millers were in a position to draw upon local stocks of imported wheat, if they wished, rather than to continue to import as heavily as before. December–March shipments (see Chart 1) indicate that in many countries the choice was to reduce stocks. In practically all of these countries the choice was probably influenced by a general anticipation that selling pressure from the Southern Hemisphere would develop sometime during February–April, and by considerable uncertainty felt abroad regarding the future selling policy of the United States Farm Board. In Germany, France, and several minor importing countries which had quota laws and high tariffs in force throughout August–March, net imports of wheat during August–November were not heavy; hence on December 1 stocks of foreign wheat presumably were not large enough to warrant much reduction during the ensuing four months. Since, however, the quota laws and high tariffs continued in effect during December–March, net imports of wheat and flour (ex-

cept in France) remained small by contrast with most post-war years; native wheat supplies were presumably being used up more rapidly than in past years when no such quota laws existed, or than they would have been this year in the absence of quota laws.

It is theoretically possible that European imports have been restricted during the past four months not only by the factors mentioned above, but also because of a decline in the per capita consumption of wheat. Data of total supplies available for the entire period August–March suggest that available supplies this year have not been strikingly smaller than normal, trend considered; but such data do not throw much, if any, light upon the actual utilization of wheat, since no consumption index, or other reliable index of the size of European stocks, exists.

Among the more important factors to be considered are the European rye and feed grain positions. In so far as one may safely generalize about a situation as complex as the European cereal position, one may perhaps say that in most countries during most of the present season, the price spreads between wheat on the one hand, and rye and each of the feed grains on the other hand, have not been so narrow as in 1927–28, nor quite so wide as in 1929–30; however, in percentage terms, which are probably more important, the relationships prevailing this year between wheat prices and the prices of other cereals have resembled more closely the relationships prevailing in 1929–30 than those prevailing in 1927–28; thus there appears to have been little price incentive to feed wheat this year. However, during February–March (mainly March) the general feed grain position became considerably tighter, and price relationships in these months may have encouraged some feeding of wheat. Moreover, in France, Germany, England, and the Netherlands at least, the wheat crops of 1930 were of poor quality. Other things being equal, this would have induced considerable feeding of wheat, but the milling regulations in France and Germany presumably kept wheat from being fed in those countries as extensively as otherwise it would have been.

¹ These factors are not as yet entirely clear. More evidence in regard to the wheat supply position of Russia will be available later in the season after Russian shipments for April–July are recorded.

Other factors not generally present, or else not present to so marked a degree in previous post-war years, may have affected the per capita utilization of wheat during the past eight months. Business and trade were depressed. Increased unemployment reduced the purchasing power of the average European workman. High tariffs on wheat kept wheat prices at a high level in many importing countries, despite the low prices prevailing in exporting, and in free-trade importing, countries. Various governmental milling regulations presumably led to the production of bread of lower quality, not so pleasing to the average consumer. Finally, the winter of 1930-31 in Europe was, on the whole, unusually mild; and per capita food requirements, therefore, were probably slightly smaller than usual. These factors may have combined to reduce the per capita human consumption of wheat; several of them may have encouraged the substitution of other cereals for wheat, especially of rye in Germany and other northern European countries, and of corn in Italy. But while per capita consumption of wheat in Europe may have been somewhat smaller than normal during the past eight months, such historical evidence as is available suggests that the decrease was probably slight, if, indeed, there was a decrease. Most competent observers appear to believe that year-to-year changes in the per capita consumption of wheat are generally exceedingly small, that the demand for wheat for human consumption is quite inelastic, and that the demand for wheat for animal feed depends mainly upon the relationship between wheat prices and the prices of feed grains, and upon the size of the supplies of the lower grades of wheat. Consequently, in attempting to account for the small European imports of December-March it appears unreasonable to attach much significance to a possible decline in per capita consumption.

DISTRIBUTION OF IMPORTS

As is apparent in Chart 1 (p. 297), shipments of wheat and flour to ex-European countries were strikingly large during December-March, while shipments to European destinations, though larger than in 1920-21 or 1929-30, were relatively small.

In earlier post-war years, ex-European shipments for the corresponding weeks were larger only in 1928-29.¹

Table 2 (p. 300) shows the specific destinations of ex-European shipments in December-March, and in August-March, 1926-27 to 1930-31, the only years for which such a distribution of the shipments is available. It is notable that shipments to the group of countries designated as Central America were larger in December-March 1930-31 than in any of the preceding four years; and that shipments to China and Japan were larger than in any of the years except 1928-29. For the period August-March also, shipments to both of these groups were unusually heavy in 1930-31, though they had been still heavier in 1928-29. Since information is not available in regard to the distribution of shipments among the various countries included within the group designated as Central America, any attempt to explain why shipments to that group were large during December-March 1930-31 must rest upon uncertain grounds. At present it seems reasonable, however, to hazard the guess that shipments to the Dutch East Indies, and to other countries of the "Central American" group likely to draw wheat from Australia, may have been unusually heavy because large quantities of Australian wheat were available for export at low prices after December 1930. This guess appears reasonable mainly because December-March shipments to Central America have been heavy, since 1926, only in years when the Australian crop has been fairly large.

Shipments to "Central America" would perhaps have been even larger during December-March 1930-31 if wheat and flour tariffs had not been increased in Bolivia and Colombia.²

The large shipments to China and Japan represent, in the main, unusually large

¹ See Table 1, p. 297.

² Bolivia, which had previously permitted flour-mills to import wheat free of duty, imposed a wheat tariff of approximately 20 cents per bushel, and increased the duty on flour from \$2.82 to \$5.19 per barrel, in December 1930. In February, Colombia raised the duty on wheat from 27 to 53 cents per bushel and increased the duty on flour from \$3.46 to \$4.90 per barrel. In Uruguay a law was passed prohibiting the importation of wheat in case the price of domestic wheat goes below 95 cents per bushel.

Chinese imports. In view of the large Chinese wheat and rice crops of 1930, and of the depreciation in Chinese exchange, it appears especially notable that China should have taken such large quantities of wheat and flour during the present season. The explanation probably lies mainly in the strikingly low world wheat prices. In

import statistics as well as Broomhall's estimates of shipments are available, at least through February 1931. Table 3 shows shipments of wheat and flour to specified European countries during December–March and August–March 1925–26 to 1930–31; and Table 4 (p. 302) shows the net wheat and flour imports of a number of European

TABLE 2.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR BY EX-EUROPEAN DESTINATIONS, DECEMBER–MARCH AND AUGUST–MARCH, 1926–27 TO 1930–31*

(Million bushels)

Destination	December–March (17 weeks)					August–March (34 weeks)				
	1926–27	1927–28	1928–29	1929–30	1930–31	1926–27	1927–28	1928–29	1929–30	1930–31
Central America ^a	23.29	19.26	23.38	16.46	25.60	35.71	30.44	44.01	36.40	39.10
China and Japan	9.24	14.60	38.73	14.69	24.18	21.14	21.20	50.01	26.56	40.21
Brazil	6.54	9.45	9.39	9.33	9.50	13.95	17.97	19.04	19.53	17.14
Egypt	3.36	2.53	7.82	2.73	4.22	6.25	5.39	12.69	4.98	7.14
North and South Africa	2.62	2.20	3.44	.81	1.94	4.34	3.75	5.63	1.67	2.86
Chile .....	.07	.01	.03	...	...	.14	.06	.03	...	...
India	1.08	1.45	17.59	3.65	5.62	1.08	1.51	21.33	5.25	7.26
Syria .....	.07	...	...	...	...	.10	.15	.44	...	...
Peru .....	...	.27	.11	.40	.47	...	.38	.24	1.11	.47
Palestine .....	...	...	.27	...	...	...	...	.40	...	...
New Zealand .....	...	...	.02	...	...	.09	...	.02	...	...
Total	46.27	49.77	100.78	48.07	71.69	82.80	80.85	153.84	95.50	114.18

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

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

spite of the depreciation in Chinese exchange, wheat prices were probably lower in terms of Chinese money during October–February 1930–31 than during the same period of any year since 1926 with the exception of 1928–29. Moreover, the prices of other commodities have presumably been somewhat higher during the present season than they were in 1928–29; though probably not so much higher as to make wheat appear relatively cheaper in the present season.¹

December–March shipments to the various other specified ex-European destinations tended to be moderately large. Egypt² and India³ took larger quantities of wheat and flour than in any recent year except 1928–29; and shipments to Brazil were about as large as in any of the preceding four years. For the period August–March, only African shipments, and shipments to several of the minor importers (Chile,⁴ Syria, Palestine, and New Zealand) were notably small.

For many European countries official

countries during December–February and August–February 1926–27 to 1930–31.

A study of these tables reveals what at first appear to be striking discrepancies. Judged by Broomhall's shipments, the takings of the United Kingdom and Holland were notably small during both December–March and August–March; whereas the net

¹ For indexes of wholesale commodity prices in North China and of foreign exchange rates in Tientsin and Shanghai, see the *Nankai Weekly Statistical Service*, published by the Nankai University Committee on Social and Economic Research, Tientsin, China.

² In Egypt duties on wheat and flour were increased twice during December–March. As of December 14 the wheat duty was raised from 20 to 40 cents per bushel and the flour duty was increased from \$1.32 to \$2.11 per barrel. On February 9 sliding-scale tariffs on wheat and flour became effective; with wheat and flour prices at prevailing low levels the new duties represent increases.

³ According to the latest available reports, British India has been collecting (provisionally, pending legislative enactment of a bill now before the Legislature) a wheat duty of about 39 cents per bushel.

⁴ A sliding-scale duty on wheat was introduced in Chile on January 1 to replace the former duty of 9.9 cents per bushel. The duty on flour was increased from \$1.61 to \$4.84 per barrel on February 11, 1931.

imports of the United Kingdom were strikingly large during the same two periods, and the net imports of Holland were of record size during August-February, although only of moderate size during December-February.¹ These apparent discrepancies may be accounted for mainly on three grounds. In the first place, shipments to orders, which are always large,

and net imports into, a given country naturally do not coincide in point of time. The net imports of the United Kingdom were strikingly large during December 1930, for example, mainly because shipments to the United Kingdom (and shipments to orders, later diverted to the United Kingdom) were strikingly large during the latter part of November. In the

TABLE 3.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR BY DESTINATIONS IN EUROPE, DECEMBER-MARCH AND AUGUST-MARCH, 1925-26 TO 1930-31*
(Million bushels)

Destination	December-March (17 weeks)						August-March (34 weeks)					
	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31
Orders	49.4	65.5	60.6	68.8	41.0	63.9	71.7	90.4	91.3	94.8	89.6	138.2
United Kingdom	54.2	57.1	49.6	49.6	32.0	32.1	104.1	111.3	109.7	107.4	84.1	77.8
France	5.3	19.0	7.5	14.8	6.2	15.1	16.9	37.6	19.5	29.4	13.4	31.1
Belgium	12.8	17.4	18.4	20.1	12.5	13.0	30.5	34.4	43.0	38.3	27.1	27.6
Holland	9.2	21.1	23.1	19.4	10.4	7.1	24.8	44.3	53.5	48.9	21.7	25.4
Germany ^a	11.3	18.1	22.7	19.7	9.3	7.2	26.0	39.4	47.3	46.9	23.0	22.4
Italy	17.8	36.1	24.6	23.1	9.7	16.7	35.0	54.3	44.9	50.9	14.8	41.9
Greece ^b	5.5	6.3	4.8	6.6	4.3	3.2	11.6	11.6	9.8	14.6	10.4	9.5
Scandinavia	3.9	6.2	6.6	10.9	5.1	4.0	10.7	13.0	13.8	18.7	11.2	10.0
Austria ^c	4.8	4.2	4.4	6.8	8.0	5.8	9.1	10.0	9.3	11.8	14.7	12.0
Spain ^d	1.4	1.8	.6	5.5	2.3	1.5	1.9	2.8	1.7	15.6	2.9	1.9
Total	175.6	252.8	222.9	245.3	140.8	169.6	342.3	449.1	443.8	477.3	312.9	397.8

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

^a Includes Poland and Czecho-Slovakia.

^b Includes Turkey.

^c Includes Malta.

^d Includes Spanish Colonies and Portugal.

cannot for past years be distributed according to final destination.² During August-March 1930-31 shipments to orders were larger than in any of the preceding five years; as a result, the United Kingdom, and certain other countries, presumably had a larger part of their takings reported as orders shipments this year than is usually the case. In the second place, ship-

third place, much of the wheat shipped to Holland and Belgium is actually destined to Germany or Switzerland, and therefore does not figure as a net import in Holland or Belgium. Since Germany has imported notably small quantities of wheat this year, it is not surprising to find that shipments to Holland as well as to Germany direct have been small as compared with other years, despite the record size of net imports into Holland during August-February.³

¹ Net imports into Holland during August-February were larger than the August-March net imports of any of the preceding years with the exception of 1927-28.

² Broomhall now distributes the orders shipments according to final destination, but since such distributions are not available for earlier years, precise comparisons are not feasible.

³ In February 1931 the Parliament of the Netherlands passed a law which provided that the government might require the use of between 10 and 25 per cent native wheat in all milling mixtures, and likewise, the use of the same proportion of domestic flour with imported flour. This law has not yet become effective.

⁴ The small shipments to Belgium probably reflect to some extent small German purchases.

During the past four months Germany, Belgium, and Italy have taken but relatively small quantities of wheat and flour, as is apparent both from the shipments and the net import statistics. Italy and Belgium were able to restrict their purchases of foreign wheat during December-March partly, at least, because they had taken large quantities of wheat during August-November.⁴ German net imports, on the other hand, were small during the entire period August-February, a situation probably result-

ing mainly from the high tariff and the strict milling regulations in force in that country.¹

Shipments figures suggest that France was the only European country to take notably large quantities of wheat during

sumably would have imported considerably more foreign wheat during the present season if high wheat and flour tariffs and restrictive milling regulations had not been in operation.² Czecho-Slovakia and Switzerland both imported fairly large quanti-

TABLE 4.—WHEAT AND FLOUR NET IMPORTS OF EUROPEAN COUNTRIES, DECEMBER-FEBRUARY AND AUGUST-FEBRUARY, 1926-27 TO 1930-31*

(Million bushels)

Country	December-February					August-February				
	1926-27	1927-28	1928-29	1929-30	1930-31	1926-27	1927-28	1928-29	1929-30	1930-31
United Kingdom ^a	76.11	74.53	76.98	60.53	77.83	150.06	156.07	142.96	154.80	164.70
Italy	24.32	20.63	20.00	5.86	16.69	41.39	35.41	45.53	10.79	44.23
Germany	14.69	22.01	11.15	22.04	4.60	46.64	53.63	37.67	34.57	17.28
France ^b	19.50	7.56	12.09	.41	11.13	38.23	28.08	33.02	14.62	27.46
Belgium	9.18	9.58	9.44	9.44	8.80	20.64	24.48	24.29	24.67	24.98
Holland	6.08	7.28	7.03	5.56	6.71	16.60	19.16	17.87	16.78	20.88
Switzerland	3.22	5.67	3.45	3.41	4.27	10.14	12.14	8.44	9.51	11.80
Czechoslovakia	4.37	5.49	3.54	3.54	4.21	11.07	12.99	11.24	8.40	13.26
Poland . . . . .	.75	.94	.56	(.16) ^c	(1.04) ^c	.41	2.15	1.96	(.02) ^c	(2.90) ^c
Austria	2.73	3.38	3.28	3.90	3.86	10.77	10.15	8.35	10.09	7.50
Scandinavia	4.11	6.55	7.64	4.84	5.38	10.42	15.39	18.59	13.98	14.95
Baltic States	1.67	2.16	2.41	2.27	.95	4.77	5.02	5.67	5.99	5.25

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

^a Includes Irish Free State. Data for December-March and August-March, with imports of Irish Free State in February and March 1931 estimated.

^b "Commerce général" net imports, except in February 1931.

^c Net exports.

December-March and August-March: net import figures, on the other hand, indicate French takings were of moderate rather than of large size. In any case, France pre-

¹ The German tariffs on wheat and flour and the German bread law remained unchanged during December-March. During December and January, German millers were required to use 80 per cent native wheat in their flour, and during February and March, 75 per cent; the percentage was reduced to 50 for April.

² The wheat tariff and the quota provisions remained unchanged in France during December-March. Recent unofficial advices state that admixture of 15, later 20, and later 25 per cent of imported wheat was authorized before the end of April, in contrast with 10 per cent previously permitted.

³ In Czecho-Slovakia supplementary duties of 20 cents per bushel on wheat and \$1.97 per barrel on flour were added to the duties already in force for most-favored nations. Hungary was removed from the list of nations most favored by Czecho-Slovakia, and her wheat and flour therefore became subject to the general rates of 68 cents per bushel of wheat and \$5.13 per barrel of flour. The quota law of Czecho-Slovakia remained unchanged, requiring admixture of 75 per cent native wheat.

⁴ The law provided that millers and flour importers should buy domestic wheat in a quantity equal to 10 per cent of the amount of their wheat and flour imports.

ties of wheat during August-February; but their net imports were only of moderate size during December-February. In Czecho-Slovakia, December net imports of 4 million bushels were the largest, and January net imports of .13 million bushels were the smallest, monthly net imports on record since 1924-25; these trade conditions reflected anticipation of the tariff increases which became effective on December 15.³

The remaining European countries for which either shipment or import data are available, Scandinavia, Austria, Spain and Portugal, Greece, the Baltic states, all appear to have taken moderate or small amounts of wheat during December-March and August-March. Shipments to Greece during December-March were probably somewhat curtailed as a result of the quota law imposed late in November or early in December.⁴ Changes in governmental regulations presumably likewise affected the wheat and flour trade of the group of Baltic states, and the group of Scandinavian countries, although the large wheat crops

harvested by these countries in 1930 also tended to keep imports from being large.¹

SOURCES OF EXPORTS

As compared with earlier post-war years, December-March shipments from each of the chief exporting countries, with the exception of Australia and Russia, were strikingly small in 1930-31. From the six major exporting countries combined, shipments during December-March of the present season represented a smaller proportion of the total supplies available for export than did shipments for the corresponding weeks in any other post-war year. Table 5 shows the shipments and net exports from

countries combined may be attributed mainly to a restricted import demand following an earlier accumulation of stocks, one must look to factors operating within the individual exporting countries to explain why shipments from each country were of the size they were. Given a small import demand, shipments from each exporting country might have been relatively small, if the disposition to hold wheat at the prevailing prices had been about the same in each of the countries; or shipments from one or more of the countries might have been relatively large and shipments from the remaining countries exceedingly small, if exporters in the former country or

TABLE 5.—INTERNATIONAL SHIPMENTS AND NET EXPORTS OF WHEAT AND FLOUR FROM PRINCIPAL EXPORT AREAS, DECEMBER-MARCH, 1922-23 TO 1930-31*

(Million bushels)

Dec.-Mar.	International shipments (Broomhall)								Net exports from			
	Total	North America	Argentina	Australia	Russia	Balkans	India	Others ^a	United States	Canada	Argentina	Australia
1922-23.....	226.0	139.6	52.8	24.8	....	2.0 ^b	6.8	....	49.0	84.3	56.6	25.1
1923-24.....	270.0	159.2	56.0	33.2	10.4	10.4 ^c	.8	....	34.6	117.0	65.2	38.9
1924-25.....	272.0	116.8	66.0	60.4	....	14.0 ^c	14.8	....	63.4	61.9	65.0	60.0
1925-26.....	234.8	128.8	33.6	40.8	4.8	12.0	....^d	14.8 ^e	21.8	116.4	35.5	42.2
1926-27.....	301.6	159.2	60.8	49.6	20.4	10.4	.4	.8	42.3	100.6	69.5	51.3
1927-28.....	272.8	149.6	82.4	27.6	.8	10.0	.4	2.0	32.1	113.2	93.9	27.1
1928-29.....	346.4	176.0	93.6	60.4	....	14.4	....	2.0	32.8	124.7	95.2	59.8
1929-30.....	188.4	90.8	45.6	28.0	....^f	18.8 ^g	....^d	5.2 ^h	37.1	49.1	44.4	27.2
1930-31.....	241.6	92.0	45.6	64.4	26.0	10.0	....	3.6	15.1	63.9	47.0 ⁱ	64.0 ⁱ

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

^a Except as noted, North Africa and Chile.

^b Includes some shipments from Manchuria.

^c Includes some shipments from Mesopotamia.

^d Shipments from India reported with "Others."

^e German shipments of 14.4 million bushels included.

^f Russian shipments included in "Balkans."

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

^h Includes shipments from India.

ⁱ March exports are Broomhall's shipments.

principal countries and areas over the period under review, and for December-March of earlier post-war years. Chart 2 (p. 304) provides comparisons of monthly shipments data from the principal sources of exports.

While the small volume of shipments from all, or from the six major, exporting

countries continuously had undercut the offer-prices of exporters in the latter countries. Thus, it hardly suffices to explain the small exports of any particular country wholly on the basis of a small total import demand: that country presumably would have been able to supply a larger fraction of the import demand if its exporters had chosen to accept lower prices.

Australia and Russia were the only major exporting countries which shipped large quantities of wheat during the past four months;² both had shipments of record size in comparison with corresponding shipments in the years 1922-23 to 1930-31. Yet

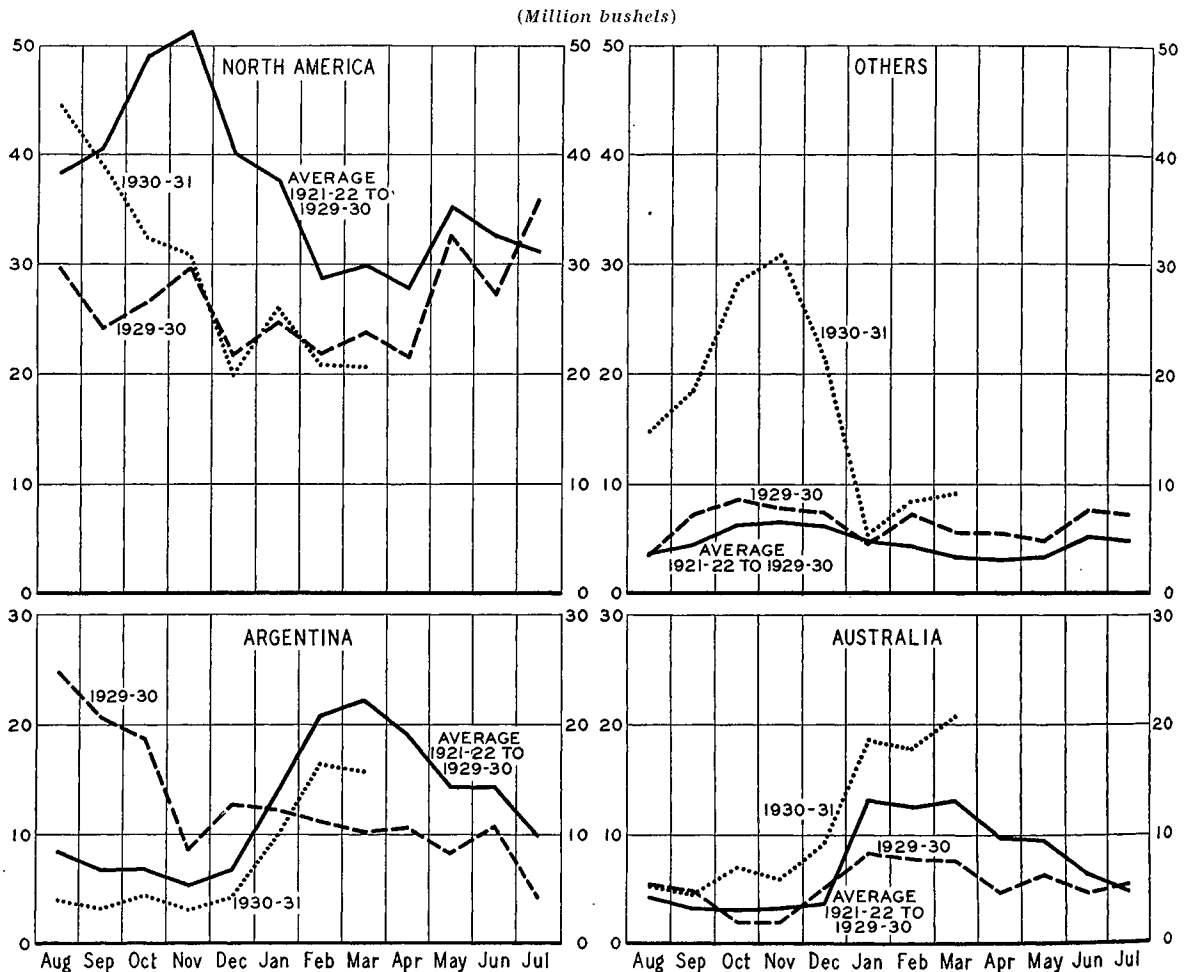
¹ In Latvia, millers were required to use 50 per cent domestic wheat in their mills during December-March. Finland raised the duty on wheat flour from \$3.36 to \$4.70 per barrel around the middle of November. Millers in Sweden were required to use 75 per cent native wheat during December, 80 per cent during January and February, and 85 per cent during March.

² Russia and Australia have no grain exchanges.

it is notable that the Russian exports do not appear large in comparison with shipments for the corresponding months of pre-war years; and that the large Australian shipments represent a smaller proportion of the supplies available for export and carry-

Shipments from Russia look more strikingly large as compared with earlier years if one considers the August-March shipments of 88 million bushels rather than the December-March shipments of only 26 million bushels; for the Russian export move-

CHART 2.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR FROM NORTH AMERICA, ARGENTINA, AUSTRALIA, AND OTHER COUNTRIES, BY MONTHS, AUGUST 1929-MARCH 1931, AS COMPARED WITH AVERAGE SHIPMENTS 1921-22 TO 1929-30*



* Compiled from Broomhall's weekly shipments published in *Corn Trade News*. See Appendix Table IX for weekly shipments during December-March 1930-31.

over¹ than did Australian shipments for the same months in four other post-war years, 1924-25 to 1926-27, and 1928-29.

¹ "Available supplies" were roughly calculated to include the crop plus estimated carryover December 1, minus requirements for food and seed. For estimates of carryovers and domestic consumption see Appendix Table XIII.

² See *WHEAT STUDIES*, January 1931, VII, 198-99.

ment was relatively heavier during August-November than during December-March. As noted in our survey of the wheat situation for August-November,² the large Russian exports this year may be ascribed to the harvesting of a bumper crop, to a successful "collection" campaign (which was successful partly because it did not end as previously announced on December 15,

1930),¹ and to restriction of domestic consumption² for the purpose of promoting exports. Australian shipments were large partly because the carryover from the old crop was large (thus large quantities of wheat could be shipped out in December), but primarily because the crop of 1930 was of record size.³ Marked depreciation in Australian exchange during the period (especially during January) probably likewise facilitated exports;⁴ but the importance of this factor is more difficult to evaluate. Finally, one may note that Australian exports would probably have been smaller had not the Oriental demand for wheat, encouraged by low prices and large quantities of the lower grades of Australian wheat, been unusually heavy. Perhaps one should ask why, under circumstances so favorable to large exports, Australian shipments during December–March were not even larger than they were—why they did not represent as large a portion of the estimated supplies as in 1925–26 and 1928–29. To some extent shipments were perhaps restricted this year by rains at harvest time; and by some holding of wheat by farmers who expected the Federal government to establish a higher guaranteed price for wheat.⁵ Moreover, in comparing 1930–31

with 1925–26 and 1928–29 as regards the proportion of available supplies shipped during the four midwinter months, it is worthy of note that available supplies were considerably smaller in the two earlier years; and that it is obviously much easier, other things equal, to ship a large proportion of small supplies than to ship the same proportion of larger supplies in a given interval of time. When these various circumstances are considered, the actual size of Australian shipments appears to be explicable.

Argentina and the North American exporting countries all exported notably small quantities of wheat during the period under review. This can more readily be understood as regards the United States than as regards Canada and Argentina; for presumably the price-pegging operations of the Grain Stabilization Corporation were the major influence responsible for keeping the prices of United States wheat far out of line with the prices of internationally competitive wheats. Thus, it seems reasonable to attribute the small size of United States net exports (some 10 million bushels smaller than the smallest ones recorded over the past 9 years) mainly to the market activities of the subsidiaries of the Farm Board.

What wheat prices would have prevailed in the United States, whether wheat would or would not have flowed freely to export in the absence of price support by the Stabilization Corporation, are questions for conjecture. It seems reasonable to guess that if the government agency had made no attempt to support wheat prices, United States wheat would have competed somewhat more freely in the international markets, and hence net exports would have been somewhat larger. But in view of the low level of prices, it also seems probable that speculative interest in the United States would have been sufficient to keep prices in this country high relative to prices at Liverpool. Under such circumstances net exports, though larger, presumably would not have been strikingly large in comparison with the December–March exports of other post-war years; and the proportion of available supplies⁶ exported would still have been relatively low, though

¹ According to *Foreign Crops and Markets*, the collection plan of cereals had been executed by 89 per cent as of December 25. This percentage was raised to 95 as of March 20.

² Bread continued to be rationed in Russia during the period under review; but rations to certain groups of workers were reported to be raised.

³ It is significant to note that even if the official estimate of the crop (205 million bushels) is some 15 million bushels too high, as some competent observers believe, the crop is still of record size.

⁴ The course of Australian (telegraphic transfer) exchange rates on London (based on £100–London) during December–March were as follows:*

Dec. 6..108½	Jan. 3..108½	Feb. 7..130	Mar. 7..130
Dec. 13..108½	Jan. 10..115¼	Feb. 14..130	Mar. 14..130
Dec. 20..108½	Jan. 17..118	Feb. 21..130	Mar. 21..130
Dec. 27..108½	Jan. 24..125	Feb. 28..130	Mar. 28..130
	Jan. 31..130		

* Dates specified are dates of publication of the rates in the *London Economist*.

⁵ The effect of discussions regarding a guaranteed price is commented upon in the *Monthly Review of the Wheat Situation*, January 1931, published by the Dominion Bureau of Statistics, Canada.

⁶ "Available supplies" refers to the quantities remaining (as of December 1) after deducting estimated domestic consumption (food, feed, and seed) for the year and net exports for August–November from the crop plus carryover. See Appendix Table XIII.

not, as it actually was, only slightly over half of the lowest proportion on record for the preceding eight years.

The restriction of the Canadian export movement appears somewhat more difficult to explain. Canadian net exports of 64 million bushels for the period were smaller than in any year since 1922-23 with the exception of 1924-25 and 1929-30; and in relation to supplies available on December 1, almost as small as in 1929-30, and hence much smaller than in any of the preceding years. Perhaps most of the restriction may be attributed to the fact that at the prevailing low level of wheat prices owners of high quality Canadian wheat probably preferred to hold the wheat on the chance that prices would rise, rather than to force it into export channels by accepting still lower prices. Moreover, United States traders, driven from United States markets by the stabilization operations of the Farm Board, were attracted by the exceedingly low prices of the Winnipeg wheat futures and apparently made fairly large speculative purchases in that market.¹ Speculative holding of Canadian wheat was encouraged in January and February by reports of continued dry weather in large portions of the United States winter-wheat belt, and by reports of subnormal precipitation in the western provinces of Canada during December-February.² It seems reasonable to believe that if Canadian wheat prices had not advanced relative to British prices during those months, the export movement from Canada would have been somewhat larger.

Shipments from Argentina amounted to 46 million bushels during December-March, a figure approximately the same as that

¹ It is interesting to observe that the average daily volume of futures trading in United States markets during December-March was the smallest since records have been kept, beginning with January 1921.

² The importance of December-February precipitation in Canada as regards the outlook for the new spring-wheat crop is open to question. The United States Department of Agriculture is apparently of the opinion that it is of little significance; while many traders and trade journals (including a number of Canadian ones) appear to believe that winter precipitation is important in building up sub-soil moisture reserves. This latter view probably was responsible for some market support during the period under review.

³ See Broomhall's *Corn Trade News*, March 25, 1931.

for the corresponding period of 1929-30 when wheat supplies were strikingly small, and somewhat larger than that for 1925-26 when the Argentine crop was smaller in size and notably of poor quality. In relation to the total supplies available for export and carryover, shipments during the past four months were probably smaller than in any year except 1925-26. Several important factors combined to keep Argentine exports small. Rains during December and January delayed the harvesting of the crop; and further rains during the latter part of January and early February slowed down the movement of wheat from the farms. Another factor of probable importance was the strikingly large corn shipments of January-March; in the past when wheat shipments have been notably large during January-March, corn shipments have been small. The low wheat prices of December-March presumably also played a part in restricting exports of wheat from Argentina. This factor was no doubt especially important as regards the sale of low quality wheat, since such wheat could be moved to foreign markets at but slightly lower cost per bushel than wheat of good quality, yet could be sold only at an appreciable discount under the prices prevailing for the standard grades. During March, prices of feed grains rose so rapidly in leading European markets that on occasions wheat sold as low per pound as did corn and barley.³ Such price relationships naturally encouraged Argentine exporters to devote themselves and their shipping facilities to the exportation of corn rather than of wheat. Finally, the quota laws combined with high tariffs in European importing countries probably tended to restrict Argentine and Australian shipments to a greater degree than Canadian shipments. Since only small quantities of foreign wheat could be imported, and since the import duty represented such a large portion of the cost of importation, millers, desirous of maintaining the quality of their flour, probably looked upon the high-protein Canadian wheats with more favor than in past years when governmental regulations were less strict.

Shipments from the Danube basin were small in comparison with the size of avail-

able supplies. Low wheat prices and perhaps an anticipation of governmental action which might increase the returns from wheat sales tended to restrict exports. The governments of all of the Danubian coun-

tries have taken measures to raise grain prices to growers, and to facilitate the exportation of grain; but up to the present time none of these measures seems to have proved notably effective.¹

II. VISIBLE SUPPLIES AND OTHER STOCKS

During most of the period under review total visible supplies were maintained at a new high level slightly above the level of last year. In the main, this was a reflection of the unusual January-March increase in United States visibles, an increase resulting from heavy marketings and restricted exports. In each of the four major exporting countries with the exception of Argentina, total stocks available at the end of March 1931 were of record size; and in Argentina stocks were large in comparison with most post-war years, though smaller than in 1929. Less information is available about the stocks position in other exporting countries; but it appears that stocks were small in only one exporting group, the countries of northern Africa. Wheat supplies in the Danube basin were sizeable, though probably smaller than the record stocks of 1929. In Russia and India stocks were no doubt considerably above average in size; but one cannot accurately judge how far above average. Thus, in all exporting countries combined wheat stocks must have been of record post-war size at the end of March 1931; and in the exporting countries out-

side of Russia and India, aggregate stocks were probably larger than those of any other year, but only a little, if any, larger than in March 1929. In the importing countries of Europe, on the other hand, wheat supplies must have been fairly low at the end of March 1931.

VISIBLE SUPPLIES

Total visible supplies in the United States, Canada, ports of the United Kingdom, and afloat to Europe have been maintained throughout most of 1930-31 at approximately the same level as in 1929-30, a level unprecedentedly high as compared with earlier years. Since mid-January, moreover, total visible supplies have been larger this year than last. The weekly courses of total visibles and of visibles in the three major positions are shown in Chart 3 (p. 308) for the years 1928-29 to 1930-31. It appears notable, as compared with 1928-29 and 1929-30, that total visibles increased in February 1931 after declining from a peak in late November. As compared with years prior to 1928-29, however, such an increase does not appear strikingly unusual, for since 1923 February increases in total visibles have occurred in four years—1923, 1924, 1925, and 1928. Nevertheless, the February increase of 1931 was unusual in that it resulted partly from an increase in the visible supplies of the United States. Only in one other year (1923) of the past nine years have United States visibles increased during February; and in no other year has there been a March increase.

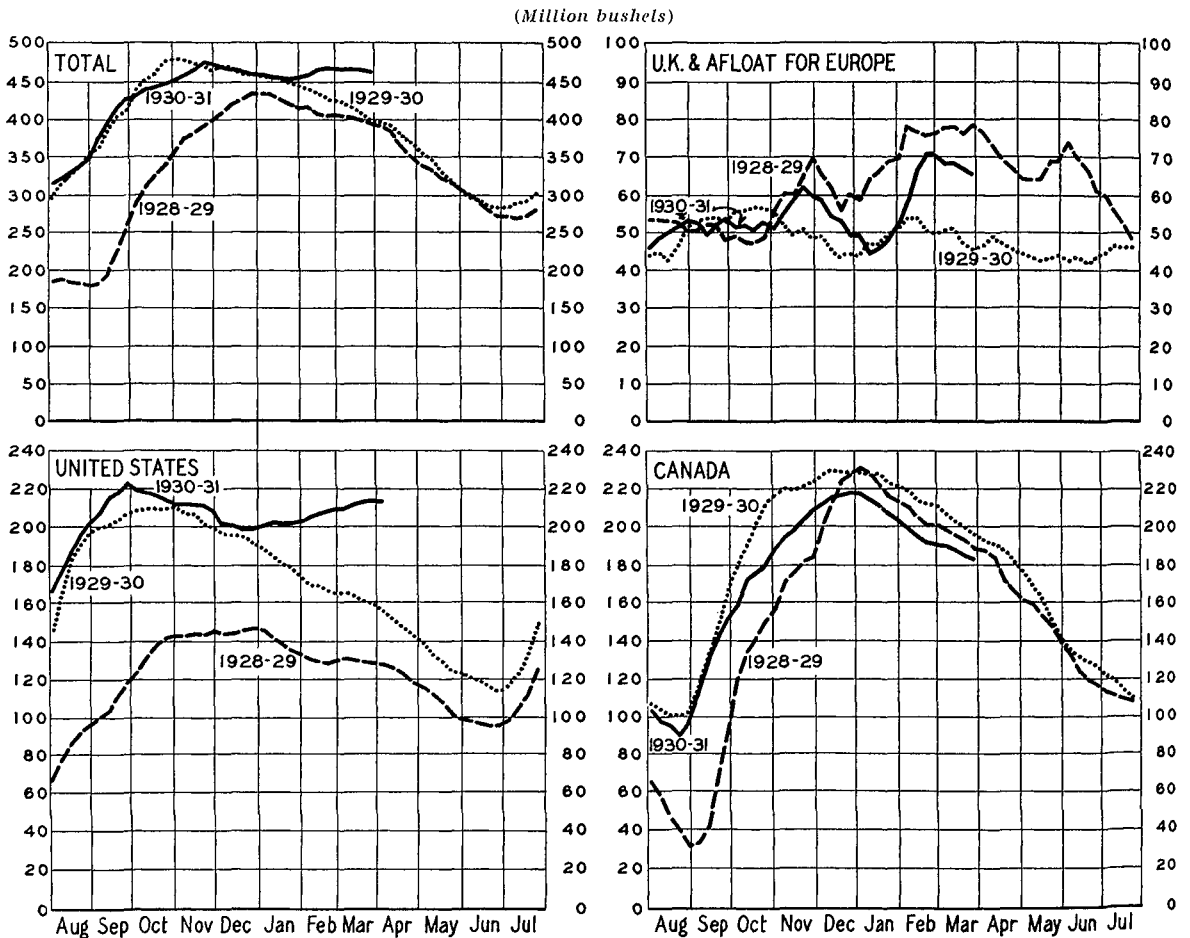
In the United States visible supplies were maintained at an unprecedentedly high level during December-March by large marketings and by small exports. The movement of wheat to primary markets in the United States proceeded at an exceedingly slow pace during October-December (December receipts being the smallest for that month during the post-war years); but

¹ Bulgaria and Jugo-Slavia both have government-owned and government-controlled organizations to handle grain surpluses, while Roumania has seriously considered establishing such an agency. In Hungary the "grain ticket system" is still in force. Three international grain conferences were held in February and March to consider the problem of disposing of the grain surpluses of eastern and central European countries. Two of the conferences, those held in Paris, starting February 23 and February 26 respectively, were under the auspices of the League of Nations; whereas the third, held in Rome March 26-30, was called by the International Institute of Agriculture. The first two conferences were attended by representatives from 24 European countries (Russia was not invited) who centered their attention upon the European grain situation. At the Rome conference 46 nations were represented (including the United States, which was represented only unofficially); and the delegates concerned themselves with the problems of world grain surpluses. We reserve discussion of the deliberations until a later date. At the moment, it suffices to indicate that strong differences developed between importing and exporting countries and that adjournments occurred when impasse was reached.

it was greatly accelerated in January–March. This year January receipts were larger than in any post-war year except 1923, February receipts were the largest within a decade, and March receipts were likewise the largest in a decade. The heavy marketings may perhaps be attri-

partly with a view to using large quantities for animal feed, perhaps partly in anticipation of marketing the wheat at higher prices. At any rate, the mild winter and the change in the relationship between corn prices and wheat prices from early December to March must have tended to discour-

CHART 3.—VISIBLE WHEAT SUPPLIES IN THE UNITED STATES, IN CANADA, AND IN UNITED KINGDOM PORTS AND AFLOAT TO EUROPE, WEEKLY, AUGUST 1928–MARCH 1931*



* Data for December–March 1930–31 presented in Appendix Table VI.

buted partly to the pegged wheat prices of December–March and to the surmise that the Farm Board might discontinue price support after May 31. Other factors were probably important. Farm stocks were undoubtedly strikingly large at the beginning of the calendar year 1931; and large marketings were therefore to be expected. Wheat was held back from market during October–December, perhaps

age the feeding of wheat; and the favorable development of the new winter-wheat crop helped to induce farmers to market their wheat at the prevailing price-level. In this connection it appears especially significant that in spite of the huge market receipts of January–March farm stocks on March 1 were larger in 1931 than they have been in any year since 1921.

Part of the increase in total visibles be-

tween January and February is attributable to the increase in total stocks in ports of the United Kingdom and afloat for Europe. From a peak in late November, aggregate stocks in those positions decreased until the middle of January, then rose rapidly to a new and higher peak in late February. Such a movement appears unusual in comparison with the movement of 1929-30, but not especially so when compared with earlier years, the year of greatest similarity being 1923-24. The decline during December and early January 1930-31 was due wholly to a decline in stocks afloat (port stocks increased during those weeks) which reflected primarily a reduction in shipments to Europe from North America and Russia; since Russia has not been exporting heavily in recent years, it is unusual for shipments from both of these sources to decline at the same time, though shipments from North America usually do so after November. The rapid rise in total port stocks and stocks afloat, from mid-January to the end of February, reflected partly an increase in total shipments to Europe and partly an increase in the proportion of the total contributed by countries of the Southern Hemisphere (an increase especially large as compared with that of 1929-30).

Visible supplies in Canada were maintained at a lower level in December-March 1930-31 than in the corresponding months of 1928-29 and 1929-30. The general course of Canadian visibles during the period under review showed no unusual seasonal characteristics. Both marketings and exports were relatively small in December, January, and March (although large in comparison with 1929-30), and both were moderately large in February; hence visibles neither increased nor decreased at an unusually rapid rate.

WHEAT STOCKS IN EXPORTING COUNTRIES, MARCH 31

In the United States, total wheat stocks as well as that portion represented by the visible supplies appear to have been of record post-war size at the end of March 1931.¹ Official estimates of stocks on farms and in country mills and elevators March 1,

combined with Bradstreet's estimate of visible supplies, yield a figure about 56 million bushels larger than the highest corresponding figure for preceding post-war years—451 million bushels in 1931 as compared with 395 million bushels last year. But despite the high total, stocks in country mills and elevators were smaller than average; and stocks on farms, though the largest of recent years, were smaller than in either 1920 or 1921.

Census data of stocks held by city mills on March 31 are not yet available; but on the basis of stocks data as of December 31 and of the relationship between the May and July wheat futures, it seems reasonable to believe that at the end of March stocks held in city mills and in transit to city mills were somewhat smaller than in any of the past five years except 1926.² Stocks in these positions on December 31 were relatively large, though they had been exceeded in two (1929 and 1930) of the preceding five years. Since stabilization operations kept the May future out of line with the July future, however, millers presumably felt impelled to reduce their stocks by considerably more than the usual amount between December 31 and March 31. But the reduction, though probably larger than any reduction of the past five years, was presumably not large enough to cause stocks to be quite so low at the end of March in 1931 as in 1926. We consider it reasonable to suggest a probable minimum of 65 million bushels for stocks in city mills and in transit on March 31, 1931. If 65 million bushels be accepted as a minimum figure, one may conclude that on March 31 stocks in the major positions—on the farms, in country mills and elevators, in city mills and in transit to mills, and in terminals—were at least 35 million bushels larger in 1931 than in 1930. Supplies of wheat and flour in the hands of bakers and retailers and in individual households throughout the country can never be estimated with any degree of certainty. Suffice it to say that this year the course of prices has not been

¹ See Appendix Table XII.

² City mill stocks in private and public terminals and in country elevators are not considered in the above discussion because of duplication with the stocks data furnished by Bradstreet and the Department of Agriculture.

such as to encourage large holdings in these positions, and that in the aggregate they are probably somewhat smaller than usual. But in spite of this, it appears probable that stocks in all positions in the United States were considerably larger on March 31 this year than in any other post-war year.

Although the visible supplies of Canada were smaller during August–March 1930–31 than during the same period of 1929–30, total Canadian wheat stocks were of record size on March 31, 1931, being about 30 million bushels larger than the largest end-March stocks previously recorded—those of 1929.¹ This year, stocks in all positions except in transit, and in United States lake and Atlantic ports, were strikingly large; but the one outstanding feature of the stocks position was the size of farm stocks. Stocks on farms on March 31 amounted to almost 89 million bushels, a figure some 28 million bushels higher than the corresponding figure for 1929, and 18 million higher than the one for 1924 (the largest on record for former post-war years). The large farm stocks probably reflected the unwillingness of farmers to sell wheat at the prevailing low prices.

Australian stocks were doubtless also of record post-war size on March 31. At 84 million bushels, visible supplies in Australia on April 1 were about 20 million bushels larger than the largest April visibles of any of the preceding ten years.² Moreover, when estimates of domestic consumption and of shipments from Australia during January–March are subtracted from the official estimate of the 1930 crop, the resulting figure is strikingly high in comparison with corresponding figures for earlier years.

In Argentina stocks were relatively large this year at the end of March; but they

¹ In each of the years 1928–31 total Canadian stocks (in Canada and in the United States) were larger than in any of the years prior to 1928. The following stocks figures for those four years were derived by adding to the official Canadian estimates of stocks within Canada (see Appendix Table XII) the figures for stocks in United States lake and Atlantic ports:

1928	240.8	1930	253.3
1929	268.1	1931	286.3

² See Appendix Table VII.

³ See J. A. Goldschmidt and Company, grain letter of March 18, 1931.

probably had been equaled in 1928 and exceeded by something like 60 million bushels in 1929. As compared with the small stocks on hand at the end of March 1930, the quantity of wheat available this year was perhaps about 40 million bushels larger.

Information in regard to stocks in other major exporting countries—Russia, the Danube basin, India, and northern Africa—is meager and difficult to evaluate. Developments in the wheat situation during April–July will probably be greatly affected by the quantities of wheat on hand, and available for export, in Russia. Since estimates of the Russian crop of 1930 still range from around 955 million bushels³ to 1,097 millions, and since probably no one outside of Russia knows even approximately how much wheat has been used for domestic consumption during the past nine months, it seems impossible to say more about the Russian stocks position as of March 31 than that wheat stocks must have been larger on that date in 1931 than in any of the preceding 10 years. In the Danube basin the crop of 1930 was, according to official estimates, the second largest of post-war years, being exceeded only in 1928. Moreover, the carryover of old-crop wheat into 1930–31 was probably considerably larger than the carryover into 1928–29; hence, at the beginning of August 1930 wheat supplies must have been almost the same size as those of August 1928, the largest on record. During August–March 1930–31 net exports from the Danube basin were fairly heavy, heavier than in 1928–29, but not large in relation to the available supplies. Even if it be assumed that wheat consumption has steadily increased in the Danubian countries, one may infer that stocks were abundant at the end of March 1931, probably more abundant than in any post-war year other than 1929, though perhaps not much more so than in 1930.

In spite of the fact that the Indian wheat crop of 1930 was officially estimated at 387 million bushels (the largest in at least 40 years), and that net exports have been of negligible size, one cannot with any assurance conclude that at the end of March 1931 wheat stocks were of record size. In the first place, some observers still incline to

the belief that the crop was overestimated.¹ And in the second place, there is no good basis for judging how much of the crop has been consumed and how much stored. In India there is possibly a fairly elastic demand for wheat for human consumption: when world prices are low Indian consumption may tend to be higher than when prices are high. On the other hand, there also appears to be a tendency for large stocks of wheat to accumulate in India during years of large crops and low wheat prices, especially when the weather is relatively unfavorable for the development of the growing crop.² Such conditions have prevailed during the present season. Moreover, the government has taken steps to encourage the consumption of native grain supplies. It has twice induced reductions in railroad rates on wheat and has recently introduced a tariff on wheat imported into India, measures which probably reflect the opinion that stocks of Indian wheat are large. On the whole, we incline to the notion that wheat supplies in India were larger than average at the end of March 1930.

In the countries of northern Africa the stocks position on April 1 apparently differed markedly from the position in other exporting countries. Since the combined wheat crop of Algeria, Tunis, and Morocco was relatively small in 1930, and the net exports of August-March were relatively large, wheat stocks were presumably below average in size at the end of March 1931.

The above survey suggests that, taken as a group, the wheat-exporting countries of the world held wheat stocks of record size on March 31, 1931. But, it must be noted that the large supplies of 1931 do not carry the same implications for future trade and future prices as would have been carried by equal supplies similarly distributed in former post-war years, on account of the

quantity owned by the Grain Stabilization Corporation in the United States.³

STOCKS IN IMPORTING COUNTRIES

The outlook for international trade and the course of wheat prices during April-July depends in no small measure upon the stocks position in European importing countries, a position necessarily difficult to evaluate in the absence of tangible evidence. In 1930 European countries, aside from Russia and the Danube basin, harvested a wheat crop of about normal size, trend considered. The carryover into 1930-31 was somewhat larger than average; but shipments to Europe during August-March were moderately light as compared with other recent years. Thus, if wheat was consumed at a normal rate during August-March 1930-31, and if the estimates used accurately reflect in the aggregate year-to-year changes in production,⁴ wheat stocks in European importing countries must have been below normal in size at the end of March 1931. Moreover, as noted above,⁵ even if wheat consumption was somewhat curtailed during August-March, it was probably not so greatly restricted as to warrant any marked change in our evaluation of the European (excluding Russia and the Danube countries) stocks position as of March 31. In any case it seems clear that stocks of wheat in European importing countries were smaller at the end of March in 1931 than in either of the preceding two years.

A study of the European stocks position by individual countries leads to the conclusion that at the beginning of April 1931 supplies of wheat were strikingly low in France and Austria, and moderately low in Germany and Italy; while the United Kingdom, Belgium, Holland, Spain, Switzerland, Czecho-Slovakia, Scandinavia, and the group of Baltic states each held stocks probably about of normal size, trend considered, or in some instances moderately larger. Poland, usually a net importing country, has ranked as a net exporting country during August-March 1930-31, and, according to our calculations, Polish stocks at the end of March 1931 were probably large enough to warrant further small exports during April-July. These judgments

¹ See *Corn Trade News*, January 28, 1931. Broomhall's correspondent in northern India has expressed the belief that the amount of the last harvest was overestimated by about 37 to 56 million bushels.

² See *WHEAT STUDIES*, July 1927, III, 353-71.

³ See below, p. 330.

⁴ The crop figures used as the basis of our calculations are presented in Appendix Table II.

⁵ See p. 299.

rest mainly upon production and trade data: obviously, therefore, if certain of the crop estimates are inaccurate, some of our judgments regarding wheat stocks are invalidated. In general, however, this evaluation of the stocks positions of these countries does not differ markedly from the opinions expressed in leading trade journals. In this connection, it is perhaps worthy of note that a number of observers seem inclined to characterize German stocks as strikingly low, whereas we find some ground to describe them as moderately low. If attention be directed only to the period 1928-31, German stocks at the end of March 1931 may well be classified as extremely low; but if a longer period, say eight years, is taken into consideration, March stocks appear large in 1928 and 1929, of about normal size in 1930, and moderately low in 1931. The German crop of 1930 was almost as large as the bumper crop of 1928, but it differed markedly from that crop in quality: the crop of 1928 was of high quality, while that of 1930 was poor—a factor which, other things equal, would lead to the use of more wheat in 1930-31 for the manufacture of a given amount of flour. Moreover, other things

were not equal in 1930-31. Governmental regulations, especially the quota law, discouraged imports and encouraged a more rapid utilization of domestic wheat. It is therefore not surprising that this year German farm stocks were reported to be lower on March 15 than in any of the three preceding years.¹ Data on farm stocks are not available for earlier years, but it appears warrantable to infer that farm stocks as of March 15 may have been lower in several of the years 1923-27 than they were in 1931. With the quota law in force in Germany this year and rising prices in prospect, it is probable that stocks of domestic wheat in the hands of German millers were larger than normal at the end of March 1931.

English farm stocks appear to have been only of moderate size on April 1, despite the fact that during August-March British farm marketings amounted to only about 19 per cent of the small 1930 crop; whereas in previous post-war years the lowest corresponding percentage was 28. These facts suggest that fairly large quantities of wheat were fed to animals in August-March, perhaps mainly because of the low quality of the crop.

III. WHEAT PRICE MOVEMENTS

THE COURSE OF FUTURES PRICES

The course of wheat futures prices in leading world markets during August-April is shown in Chart 4. After declining drastically from August to the middle of November, futures prices recovered slightly during the latter part of November, remained fairly stationary during the first ten days of December, then again moved abruptly downward, reaching new low points for the season on December 29 in Chicago and Buenos Aires, on December 31 in Winnipeg, and on January 2 in Liverpool. In United States markets the old-crop futures (December, March, and May) were pegged after the mid-November break; and thereafter did not follow the same course as did futures prices in other markets, or as did the new-crop futures in Chicago. No spectacular price movement occurred in any of the leading futures markets during January-March; prices fluctuated within

exceedingly narrow limits as compared with other post-war years, though in both Liverpool and Buenos Aires new record lows were established around the middle of January. Of greatest interest during these months was the narrowing of the price spread between Liverpool and Winnipeg: the narrowing was brought about by relative steadiness of Winnipeg prices throughout the second and third weeks of January, when Liverpool prices were sagging, and by a relatively greater rise in wheat prices at Winnipeg than at Liverpool during the last of January and the first week of February. Likewise of interest was

¹ Since 1928 wheat stocks on German farms on March 15 are reported to have represented the following percentages of the total year's crop:

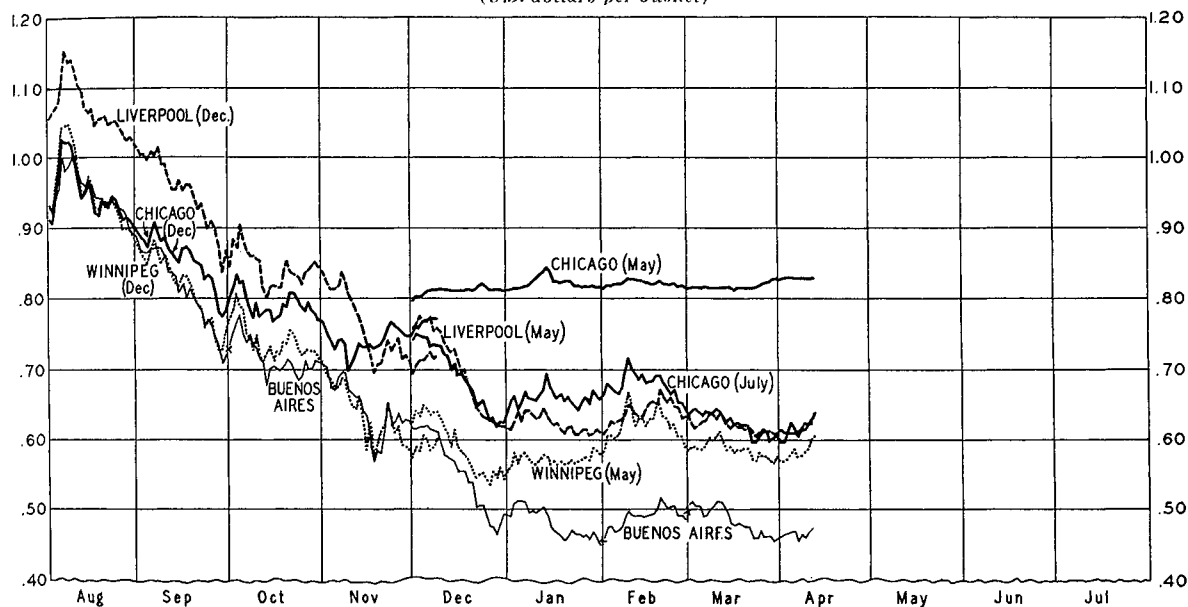
Winter wheat		Spring wheat	
1928	28.9	1928	49.7
1929	21.2	1929	39.6
1930	25.6	1930	32.4
1931	13.2	1931	30.3

the decline of the Chicago July future relative to Liverpool futures in the latter part of February.

The December decline in wheat prices may probably be attributed mainly to a falling off in European import demand, and to consequent intensification of competition among exporting countries. Several

European importers and millers chose to withdraw from the importing market in December 1930, as they had a year earlier,¹ and to use up some of the large stocks which had been accumulated. Exporters and traders in Canada, Argentina, and Australia, disturbed by the falling off of export demand, seem to have offered

CHART 4.—COURSE OF WHEAT FUTURES PRICES IN FOUR LEADING MARKETS, DAILY, AUGUST–MARCH 1930–31*
(U.S. dollars per bushel)



* Data from *Daily Trade Bulletin*. Prices are for December and May futures in Liverpool and Winnipeg; for December, May, and July futures in Chicago; and for September, October, February, March, and May futures successively in Buenos Aires. The X indicates a change of future.

factors contributed to the sudden decline in import demand. European millers and importers had suffered heavy losses on their August–October purchases, and after the November price-break hesitated to engage in further buying until the future course of wheat prices should become more clearly defined. Moreover, they were in a position to draw upon large stocks of Russian and North American wheat which were piled up in ports of the United Kingdom and on the Continent as a result of the heavy wheat shipments of August–November. Finally, with a large Southern Hemisphere crop in prospect, there seemed to be every reason for Europeans to anticipate that considerable pressure might develop on the international market sometime during January–March. In this situ-

wheat to importers at progressively lower prices. In this competition, Argentine exporters, observing an improvement in the outlook for the Argentine crop, and being favored by a rapid depreciation of the Argentine exchange, appear to have led the way to lower prices.² The entire weakness of wheat prices in December cannot be attributed, however, to the wheat situation alone. Business conditions remained depressed; the prices of industrial stocks (the Dow-Jones average) declined markedly during the first three weeks of the

¹ See WHEAT STUDIES, January 1931, VII, p. 138.

² It is interesting to note that practically all of the December decline in Liverpool prices occurred during the period from 2:15 p.m. to the close of the market, a period during which Buenos Aires news is likely to be of primary importance.

month; and optimism in regard to the future course of corn prices tended to fade. These factors all may have contributed to the general pessimism of wheat traders, notably in North America.

During January–March the news which came into the wheat markets was in the main neither strikingly bullish nor bearish; it would seem, however, that the bearish items outnumbered the bullish ones. Import demand remained restricted; winter-wheat crops progressed unusually well with winterkilling considerably below average; the United States visible supplies increased during the mid-winter months for the first time in post-war years, thus suggesting that wheat was not being fed in as large quantities as had earlier been anticipated (a suggestion borne out by estimates of farm stocks on March 1);¹ and finally, the Stabilization Corporation announced in February that it might sell for export as much as 35 million bushels of wheat before July 1. Other things equal, one might expect such factors to bring about a further price decline. But despite the bearish features of the situation, prices ruled relatively stable during January–March; the markets (especially Winnipeg) showed readiness to respond to any bullish news and to resist the depressing effect of bearish news. Even during the period of greatest weakness, mid-January, when prices in Liverpool and Buenos Aires sagged (prices in Liverpool reaching the lowest point since 1894² probably largely as a result of depreciation in Argentine and Australian exchange³ and the pressure of Argentine wheat on the international market, prices at Winni-

peg remained firm, supported partly by the speculation of Chicago houses.

The exceedingly low prices of mid-January could not fail to attract speculators; and the prices of the Winnipeg futures appeared especially attractive, at least to North Americans. Consequently, in the latter part of January when reports of threatened drought in the winter-wheat belt of the United States became more and more serious, and securities prices turned upward, wheat prices bulged in all markets, the advance at Winnipeg being of greater magnitude than the advance elsewhere. Heavy rains at the end of the first week of February supplied adequate moisture for the top soil, and allayed the worst fears of drought; but wheat prices were temporarily maintained by other bullish factors—by rumors of a Russian revolution, by a strengthening of the Argentine exchange, by a reduction of the Argentine crop estimate, by a further advance in the stock markets, and by reports that further rains were needed to replenish the subsoil moisture in most of the winter-wheat belt. During the last week of February bearish news again dominated the wheat markets and prices moved downward. Probably the most important single factor was the rumor, and finally the confirmation on February 26, of export sales made by the Stabilization Corporation. The single fact that the Farm Board might sell as much as 35 million bushels of wheat before July 1 probably was not in and of itself responsible for much bearish sentiment; but the uncertainty created by this change in the Board's export policy was undoubtedly of major significance in bringing about a price recession. Other factors, however, likewise contributed to the decline: among these apparently the most important were beneficial rains in the Southwest, and preliminary estimates of farm stocks in the United States.

Since the first of March wheat prices have fluctuated within extremely narrow limits. The only feature of great interest was the tendency of prices to sag during the latter half of March, a tendency especially noticeable in Buenos Aires where the price decline of February was less marked than in the other markets. Relatively inactive European demand, sizeable shipments

¹ In November reports to the Department of Agriculture indicated that around 236 million bushels of wheat might be fed to animals during 1930–31. During December–January, however, the relationship between corn and wheat prices changed in such a manner as to discourage the feeding of wheat. After the Government report on farm stocks as of March 1 became available, it was generally conceded that the figure of 236 million bushels appeared far too high.

² It has been stated that English wheat prices were lower in January than they had been for several centuries. As regards undeflated prices, this is true only if the low daily prices of January are compared with average annual prices for preceding years, a comparison which is not strictly justified; deflated prices, on the other hand, are too unsatisfactory to be used for such a purpose.

³ In January the Argentine peso declined to the lowest point in a decade.

from the Southern Hemisphere, the pressure of large stocks, and the announcement that the Farm Board would not support wheat prices after June 1931, were factors which contributed to market weakness during the latter part of March.

All told, the months of January–March were notable for relatively long-continued stability of international wheat prices. The stocks position was such that prices might well have continued to sag somewhat as they did intermittently in August–December. But the extremely low level of prices reached early in January seems to have tended to induce farmers to hold wheat in some exporting countries, Russian exports declined sharply, and ex-European demand became relatively active; potential selling pressure on the international market was not exerted in full force, partly because of these developments, and partly because of weather conditions that retarded the marketing of wheat in the Southern Hemisphere and because of the pegging of prices in the United States.

RELATIONSHIPS AMONG FUTURES PRICES AND BETWEEN CASH PRICES AND FUTURES PRICES

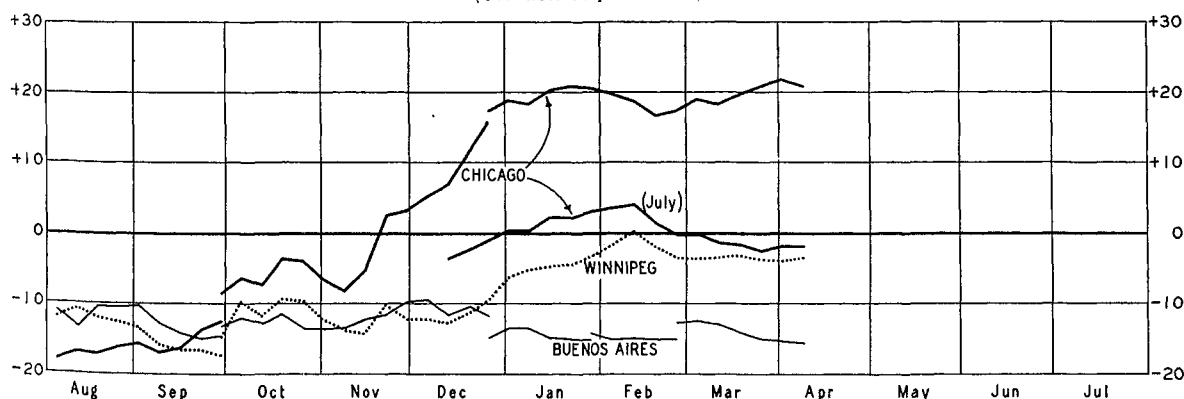
The most striking feature of the relationships among futures prices in the various

at Liverpool, Winnipeg, and Buenos Aires. Price spreads between specified Liverpool futures and specified futures in Winnipeg, Chicago, and Buenos Aires are shown in Chart 5. With the Chicago old-crop futures pegged, the December decline in wheat futures prices in the other leading markets naturally resulted in increasing the price-spreads between Chicago and those markets: from mid-December to mid-April the May future at Chicago stood at a premium of approximately 20 cents over the May future at Liverpool.

The price of the July future at Chicago, not supported by the Farm Board, followed the same general course as did futures prices at Liverpool, Winnipeg, and Buenos Aires. It is notable, however, that at no time did the Chicago July future rule at a normal discount under the Liverpool July future, and that during January and February it ruled one to five cents above the Liverpool future—a price situation at least partly due to speculative buying on reports of lack of moisture in the United States winter-wheat belt and the Prairie Provinces of Canada, and to speculative buying induced by the sole fact that the price of the July future at Chicago was extremely low in comparison with prices in

CHART 5.—PRICE SPREADS BETWEEN NEAR FUTURES AT LIVERPOOL AND NEAR FUTURES AT CHICAGO, WINNIPEG, AND BUENOS AIRES, AUGUST–MARCH 1930–31*

(U.S. dollars per bushel)



* Spreads calculated from closing prices published in the *Daily Trade Bulletin*. October, December, and May futures at Liverpool used as base; spreads in terms of October, December, and May futures at Winnipeg; September, December, and May futures at Chicago; and September, October, February, March, and May futures at Buenos Aires. The Chicago July spread is measured from the Liverpool July future.

world markets during December–March was the increase in the spread between the old-crop futures at Chicago and the futures

other years. The decline of the Chicago July future relative to the Liverpool July, from mid-February to the end of March, is

probably attributable mainly to three factors: to improved prospects for the new winter-wheat crop of the United States, to increased estimates of the stocks of old-crop wheat, and to confirmation of the more-or-less general belief that the Farm Board would not support wheat prices after June 1931. The position of the Chicago July future may reasonably be interpreted as additional evidence that resistance to low prices tends generally to be stronger in the United States than in the other major exporting countries.

Approximately the same market influences were operative at Winnipeg, and presumably were responsible for the narrowing of the price-spread between the Winnipeg and Liverpool futures from mid-December to mid-February, and for the widening of that spread during the last two weeks of February. The relatively greater advance of the Winnipeg as compared with the Chicago July future may be ascribed to the fact that the July future at Winnipeg was selling below the July future at Chicago (a rather unusual relationship) and hence appeared to be a better speculative buy than the Chicago July.

During the period under review, relationships among prices of near and distant futures in the leading markets were notably unusual only in Chicago where the Stabilization Corporation pegged the prices of the old-crop futures, but not of the new-crop futures. Thus, while the more distant futures ruled consistently above the nearer futures in Liverpool, Winnipeg, and Buenos Aires, they ruled far below the nearer futures in Chicago. Likewise noteworthy is the fact that the price of the September future in Chicago has been about on a level with or slightly below the price of the July future. This relationship, which appears unusual in view of the enormous visible supplies, may perhaps also be attributed indirectly to Farm Board policy. While the actual supplies of old-crop wheat will probably be of record size in July, the supplies in private hands will probably be small. Moreover, since the Farm Board has not yet announced what its selling policy will be in July, millers and traders cannot be at all sure that available supplies of old-crop wheat will be selling on a competitive

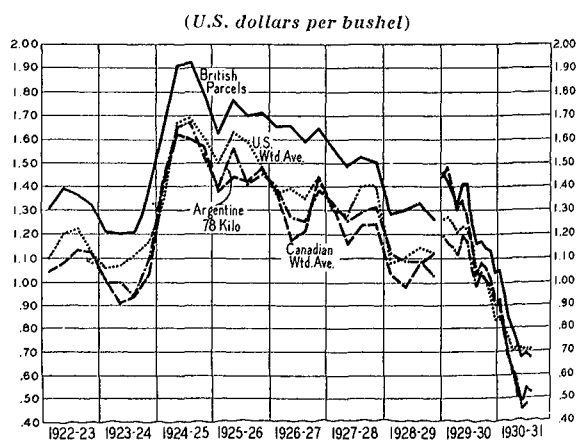
price-basis with the new-crop wheat; thus as the new winter wheat becomes available in July, it may be actively demanded in all parts of the United States. If such conditions as these have been visualized by traders, one could more or less explain why the July future should have been maintained at a higher price than the September future; but it is impossible to know whether or not the actual relationship between the July and September futures at Chicago has been based upon some such reasoning.

Cash wheat, which was sold at a considerable premium over the near wheat future during October–December, failed to command a premium during most of January–March.

CASH PRICES

During the period under review wheat prices on the international market and in the leading exporting countries of the world (except in the United States) reached new low levels, the lowest levels of the present century. Chart 6 shows quarterly average

CHART 6.—AVERAGE WHEAT PRICES IN THREE MAJOR EXPORTING COUNTRIES, AS COMPARED WITH BRITISH PARCELS PRICES, BY QUARTERS AUGUST 1922–JULY 1929, AND BY MONTHS AUGUST 1929–MARCH 1931*



* Series explained and weekly data for December–March 1930–31 given in Appendix Table X.

wheat prices during 1922–23 to 1928–29 and monthly average prices since August 1929 on the international market (British parcels prices) and in three of the principal exporting countries. The factors mainly responsible for the low prices of December–

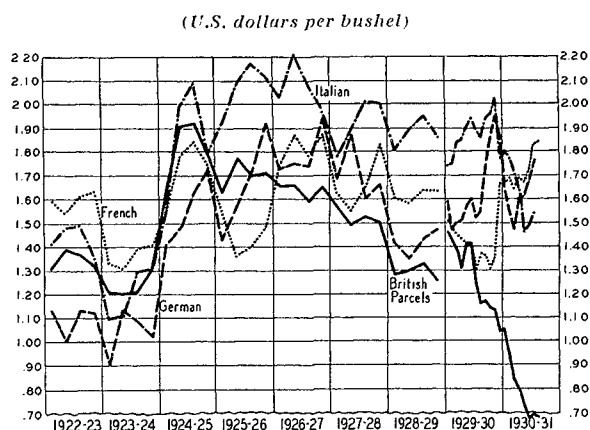
March 1930-31 have been discussed elsewhere;¹ and we shall not deal further with them here. On the international market Argentine wheat has, as usual, been selling below Australian and No. 3 Manitoba wheat;² but not so far below either of these wheats as clearly to indicate that, quality considered, Argentine wheat was to be preferred at prevailing prices. In fact, the outstanding feature of the price situation on the British import market during December-March was the unusually narrow price-spreads between the various imported wheats—a striking contrast to the situation in 1928-29 and 1929-30 when Canadian wheat commanded notably high premiums. No. 2 Hard Winter wheat was not quoted in Liverpool after October 1930.

Prices of domestic wheat in the leading Continental importing countries, France, Germany, and Italy, showed considerably more strength during December-March than did prices on the British import market. This is apparent in Chart 7, which shows average prices of British wheat parcels, and of domestic wheat in France, Germany, and Italy, by quarters from 1922-23 to 1928-29, and by months from August 1930. Italian wheat prices were notably weak in December 1930; indeed, between November and December they declined even more than did British parcels prices. But during January and February, the monthly average price of Italian wheat advanced about eight cents, while the price of British parcels rose less than two. In France and Germany wheat prices increased markedly during December-March, probably mainly as a result of the continued maintenance of high quota laws and reduced supplies and offerings of native wheat. In each of these countries the average February price appeared moderately high in comparison with prices in other post-war years, a situation quite different from that in any of the exporting countries or in any of the importing countries which had neither quota laws nor exceedingly high tariffs in force. Even in Italy, where a wheat tariff of 87 cents per bushel was in effect, the February wheat price was low in

comparison with the prices of the preceding six years.

In the United States, operations of the Stabilization Corporation kept fluctuations in cash wheat prices within fairly narrow limits: offers of wheat on the cash markets

CHART 7.—AVERAGE PRICES OF DOMESTIC WHEAT IN THREE MAJOR EUROPEAN IMPORTING COUNTRIES, AS COMPARED WITH BRITISH PARCELS PRICES, BY QUARTERS AUGUST 1922-JULY 1929, AND BY MONTHS AUGUST 1929-MARCH 1931*



* Series explained and data for August 1928-February 1931 given in Appendix Table XI. For British parcels prices see Appendix Table X.

were so large, and the export and milling demands for wheat so small, that the Stabilization Corporation was forced (largely in the Southwest) to buy fairly large quantities of cash wheat in order to keep cash prices in line with futures prices. During the period under review there was quite a marked decrease in the price-spread between No. 2 Red Winter wheat at St. Louis and No. 2 Hard Winter wheat at Kansas City; and a slight decrease in the spread between No. 2 Red at St. Louis and No. 1 Northern at Minneapolis. At Chicago, where No. 2 Red had stood at a high premium over other grades of wheat during September-December, there was such a decline in the price of No. 2 Red relative to other grades during December-January that the premium on that wheat disappeared. Receipts both of hard winter and of hard spring wheat continued to average high in protein content; and protein premiums, accordingly, ran consistently small.

¹ See above, pp. 312-15, and WHEAT STUDIES, January 1931, VII, 207-10.

² See Appendix Table X.

IV. ACTIVITIES OF THE FEDERAL FARM BOARD

The developments during December-March have brought into prominence a number of important and practical questions bearing on the interpretation of the policy of the Farm Board and of the concurrent operations of the Farmers' National Grain Corporation and the Grain Stabilization Corporation, which have acted under control of the Board. These questions, which relate to future as well as to current operations, may be submitted to a tentative but not a definitive examination, on the basis of occurrences in the period under review.

THE NATURE OF THE ACT UNDERTAKEN IN THE PEGGING OF THE WHEAT PRICE

The pegging of the wheat price for the 1930 crop is generally spoken of as a "stabilization." This term is used by the members of the Farm Board, officials of the Board, and officials of the subsidiary agencies, by opponents in the grain trade and in the business world, and by commentators in economic circles, in technical journals, and in the public press. Nevertheless, we feel constrained to suggest that the pegging of the wheat price was not a price stabilization in the sense in which the term has been employed in the discussions on farm relief culminating in the Agricultural Marketing Act. We gather from a reading of the *Congressional Record* that such a pegging of the price as has occurred was not contemplated by the Congress. We regard the act to have been a valorization rather than a stabilization. This is not to say that the undertaking when defined as valorization was more or less meritorious than price stabilization according to current agricultural parlance; but we hold it important that the distinction be drawn. It is not a question of quantitative formulation but rests on a realistic appraisal of objectives. The distinction in objectives is not obliterated by the circumstance that in valorization and stabilization alike a subsidy is in effect granted to producers.

The connotation of the term "stabilization" includes elements of cost of production, control of distribution, mechanism of

marketing, and influence over supply through restraint or acceleration of disposition of a crop seasonally produced but continuously consumed. The compelling incentives lie in circumstances within the commodity, so to speak; that is, stabilization of the price is urged on commercial grounds related to the crop and for the benefit of growers. To stabilize the price of one crop might incidentally support the prices of the other crops; but the controlling incentives would lie in the crop under consideration.

Price "stabilization," according to current usage, includes for wheat three main objectives: (1) retardation of the rate of farm marketing after the harvest; (2) a planned program of merchandising to millers and exporters through the year; and (3) on occasions the carrying of surplus from one crop year to another, or commercial diversion of wheat into non-food uses. Including these objectives, stabilizing the price of wheat would usually be an inter-seasonal operation, but might be an intra-seasonal operation.

The pegging of the wheat price in November 1930 and thereafter by the Grain Stabilization Corporation can hardly be said to have been an operation specifically designed in fulfillment of these objectives. It was not designed to retard farm marketing of wheat after the harvest, since it came too late. It was not designed to set up or effectuate a plan of merchandising wheat to millers and exporters; instead, it has almost suspended export of wheat and flour and disorganized the operations of millers. It was not designed as a plan to carry wheat into the next crop year; though this result will eventuate, it was not an objective but an incidental misfortune which the Farm Board hoped to avoid through the feeding of wheat to animals at home and through possible crop failure at home or abroad. It strikes us as impossible to describe this pegging of the wheat price as a stabilization operation, according to definitions in line with the discussion of the subject in the first annual report of the Federal Farm Board (pages 24-36). In fact in order to call such

a pegging of the price a price stabilization, one must enunciate what might be called hedonistic stabilization—namely, price elevation. It was a valorization.

It has gradually become clear that the compelling motive for the pegging of the wheat price in November lay outside of the direct farm interests of wheat growers. Chairman Stone of the Farm Board, in an address at Hutchinson, Kansas, on March 25, 1931, revealed the particular circumstances which prompted the Board in November to peg the price of wheat. Had the price continued to decline, loans would have been called, wheat would have been thrown on the market in sheer liquidation, grain dealers and banks would have faced insolvency,¹ the decline in wheat prices would have precipitated declines in all grain prices, the demoralization would have extended to the stock exchanges, with the possibility that the recession phase of the business cycle might have become a veritable panic. Under the artificial price the co-operatives, the independent grain dealers, and the banks were given time to make the adjustments eventually necessary with the inevitable decline of the world price of wheat. It was an anti-panic measure promulgated in an emergency; why it was confined to wheat and not extended to cotton and other products has not been explained. Perhaps the best expression is to say it was a credit measure rather than a price measure.

The pegging of the wheat price provided growers with an enlarged income, minimized losses on production costs, enlarged purchasing capacity, and protected co-operative marketing associations against hazardous overextension. The gains to wheat growers were supporting considerations. But clearly these were not the compelling motives. The support of public psychology and banking institutions against panicky demoralization was the compelling motive. Whether the Farm Board hoped that the price decline of the business cycle could be arrested or acted merely in the expecta-

tion that the inevitable price decline would be deferred, made gradual, and thus less disastrous, is not of record. It is proper to infer that the Board did not expect the emergency which prompted the action to continue; therefore the pegging of the price for the 1930 crop did not imply a corresponding action for the 1931 crop, irrespective of the price of wheat. This inference has since been confirmed by the announcement that the price of wheat will not be pegged for the new crop. We take it that the Farm Board in appraising the emergency must have balanced against the pegged price the possible losses to the revolving fund and also the difficulty of convincing growers that a low wheat price which constituted an emergency during 1930-31 would not represent an emergency during 1931-32. The Farm Board hoped for a reduction in carryover through increased feeding of wheat, but of course recognized that pegging the price would also reduce exports. Therefore, the Board must have recognized that if an increased carryover of wheat eventuated, this might have the effect during 1931-32 of depressing the wheat price and perhaps retard recovery of business. In short, since these circumstances must have been more or less envisaged by the Farm Board, the pegging of the wheat price is all the more clearly revealed as an action directly based on considerations largely outside of wheat growing. Incidentally remarked, the more emphasis henceforth placed on the price pegging as an emergency measure in a business depression, the less need will there be to prove that in the end it will have been remunerative to growers. Even wheat growers would recognize that their indirect gains might be so large as to counter-balance ultimate direct losses.

The Agricultural Marketing Act is broadly phrased and is permissive rather than mandatory. We have no doubt that the Farm Board had the power to peg the price of wheat for any reason it found compelling. At the same time, it is proper to point out that the Congress did not incorporate in the wording of the Act any express provision for such an emergency as occurred. The Agricultural Marketing Act does not define stabilization of price except

¹ If the grain houses and banks founded their operations on the wheat price level employed as basis for price support by the Farm Board in the fall of 1929 and the spring of 1930, they must have been heavily overextended in November 1930.

in paragraph (4) of Section 1. According to this subdivision of the Declaration of Policy, the Federal Farm Board is to operate to promote the effective merchandising of agricultural commodities in interstate and foreign commerce "by aiding in preventing and controlling surpluses in any agricultural commodity, through orderly production and distribution, so as to maintain advantageous domestic markets and prevent such surpluses from causing undue and excessive fluctuations or depressions in prices for the commodity." The broad permissive powers in the execution of this objective are contained in paragraph (c) of Section 1.

Under the term "surplus" is considered for the purposes of the Act only the commodity produced in the United States in excess of domestic requirements or in excess of the requirements of orderly distribution. Wheat in excess of domestic requirements is raised annually. Whether the expression "in excess of the requirements for the orderly distribution" includes or implies relations of supply, demand, and price on the world market, is a matter of interpretation. Under paragraph (c) of Section 1 it might be decided, in the judgment of the Board, that when the American surplus of wheat could be exported at prices regarded by the Board as remunerative or relatively satisfactory to wheat growers, then the surplus would not be "in excess of the requirements for the orderly distribution." Contrariwise, it might be decided, in the judgment of the Board, that when the exportable surplus could not be sold on the world market at prices regarded by the Board as remunerative, or relatively satisfactory, to wheat growers, and in consequence accumulated within the country, then the surplus would be "in excess of the requirements for the orderly distribution." The degrees of realism and hypothesis involved in such a decision need not detain us here, since a discussion would involve statistical and legal casuistry to an unprofitable extent.

It is hardly possible, under a forthright interpretation of the Agricultural Marketing Act, to interpret the pegging of the wheat price from November to the end of the crop year as an operation to meet "the

requirements for the orderly distribution" of the surplus of wheat. The low price of wheat, which in November provoked the pegging of the price by the Grain Stabilization Corporation, was a complex product of extraordinary domestic and international factors. The wheat price in August-November 1930 was unsatisfactory to American producers. But that the movement of wheat was not an "orderly distribution" under the circumstances, raises a totally different question. It is euphemistic to imply that a distribution is not "orderly" whenever it is unsatisfactory to producers. In effect, the Farm Board felt that a higher price than the prospective world price would be a good thing for wheat growers and for the business interests of the country, and therefore it authorized or accepted the pegging of the wheat price by the Grain Stabilization Corporation. Under the Act the Board is the judge of its own powers to "aid to the fullest practicable extent in carrying out the policy" of the Act. It may be technically permissive under the Act to subsidize wheat growers during a depression phase of a business cycle. But it may fairly be questioned whether the Congress contemplated pegging the price of a farm product under circumstances of low price which seemed to many to lie in a business cycle and largely outside of the domestic agricultural relations of the product in question.

It strikes us that press comments, outside of the rural press, in general tend to support this interpretation. Those who denounce the pegging of the price of wheat do so largely on considerations drawn from the wheat market. Those who support it tend to do so largely on general grounds. It seems to us to have secured as a credit measure whatever degree of public justification it has obtained. What would have been rejected on commodity grounds is condoned or approved on credit grounds. If the pegging of the wheat price is regarded primarily as a credit measure, it will provoke but limited appeal as a precedent; if it were to be regarded as a commodity price measure, a very different type of precedent would have been established. We take it that many business interests which oppose price fixing, howsoever de-

vised and especially with the use of governmental funds, and which would oppose a stabilization of the wheat price, through price pegging, in accordance with the conventional use of the term, would either condone or approve a valorization as an anti-panic measure. This circumstance only emphasizes the distinction between stabilization and valorization and makes the recognition of the distinction the more desirable.

THE EFFECT OF THE PEGGED PRICE ON CASH TRADING

To peg the price of wheat futures deprived the cash grain dealer of the customary basis of his transactions. The merchant buys wheat and hedges it; cleans, conditions, and mixes the grain; sells it on sample by grade to millers and exporters; and handles his hedging account to the best net advantage of his transactions. Thus he employs his elevator, his capital, and his enterprise. With futures prices pegged, the hazards are multiplied. As soon as the program of price pegging was established, the cash grain merchants proceeded to contract their operations with wheat, reducing their stocks and trading from hand to mouth. Simultaneously the mills were reducing stocks. In consequence of these contractions, among other factors, the price of cash wheat tended to sag below the pegged price of futures. Thereupon, cash prices of wheat were sustained by purchases by the subsidiary agencies of the Farm Board, especially in the hard winter-wheat region.

Gradually, the subsidiaries of the Farm Board are coming into possession of the stocks of cash wheat. By the end of March, the accumulations under the Farm Board and the divestments of the private trade were not pronounced enough to warrant the statement that the Farm Board controlled a monopoly of wheat. A monopoly is inevitable with the close of the May contracts, and apparently it is already well under way since, beginning with April 1, the Grain Stabilization Corporation has announced that the cash price will be raised one-half a cent each ten days. We take it that the Farmers' National Grain Corporation and the Grain Stabilization Corporation follow a common policy in the

merchandising of cash wheat. It seems to be inferred that the program being followed will result in the net profits of cash wheat operations being transferred to the Farmers' National Grain Corporation, while the resultant stocks are transferred to the Grain Stabilization Corporation.

Over the period under review, therefore, a practical monopoly of wheat has been in course of development. We are acquainted with no estimates of the trade or announcements of the subsidiaries of the Farm Board from which one might conjecture what proportion of the wheat of the country outside of farms and mills was on April 1 in the hands of the private trade and of the subsidiaries of the Farm Board respectively. Nationwide co-operative marketing implies monopoly, and this was recognized in the Capper-Volstead Act. Commenting on "pertinent language" in the first annual report of the Farm Board bearing on regional and national organizations for a unified program of marketing, John D. Black¹ has made the following observation:

These expressions all suggest monopolistic intent. Exerting monopoly influence over the supply is different from and probably less important than exercising effective control over the marketing of a considerable portion of it, but both represent monopolistic intent. Mere unification of operations in itself may not be monopolistic; but if it is pointed at influencing prices, it surely is.

What makes the co-operatives' monopoly ineffective is the large exportable surplus of wheat.

THE EFFECT OF PRICE PEGGING ON EXPORT OF WHEAT

When the price of wheat was pegged in November at the equivalent of more than 80 cents for May futures, this automatically suspended export of wheat on a competitive price basis. The fixed price was not only far above export parity, but it was also above the Liverpool price,² and has remained so to a variable extent, sometimes not far from 25 cents a bushel. Small

¹ "Social Implications of the Restriction of Agricultural Output," *American Economic Review*, March 1931, Supplement, XXI, 120.

² Cf. "Speculation, Short Selling, and the Price of Wheat," *WHEAT STUDIES*, February 1931, IV, No. 4.

amounts of wheat have been exported during December-March (rather less than 5 million bushels of domestic wheat), partly as an expression of earlier commitments; partly representing distressed wheat or exceptional circumstances of quality and type. Endeavoring to continue exports, American exporters have sought, for particular transactions, to secure wheat from the subsidiaries of the Farm Board for export on a competitive basis, but without result until the end of February.

On February 26, 1931, announcements of a new export policy were issued by the Grain Stabilization Corporation in Chicago and the Farm Board in Washington. It was announced that not to exceed 35 million bushels of wheat would be made available, and offered for export from Atlantic, Gulf, and Pacific ports. The reasons given were both general and particular. It was indicated that much of this wheat lay in positions more favorable for export than for domestic milling, drought relief, or feeding purposes. It was admitted that the evacuation of this amount of wheat was desired in order to clear port facilities for the new crop. It is to be inferred that the storage situation at internal points also influenced the decision. It was specifically stated that the wheat would not be offered (and presumably would not be sold) at lower prices than from other principal exporting countries, taking into account customary differentials for grades and quality. The limitation to 35 million bushels was made conditional on unforeseen crop or market developments, which might cause the world price to develop above the domestic level.

It is intimated in trade circles that the subsidiaries of the Farm Board have been dealing directly with importers abroad. Without doubt, however, if an American exporter were to secure a sale in conformity with the program of the Stabilization Corporation, he would be supplied with wheat to complete the transaction. In the two months which have elapsed since this announcement, some significant sales of wheat have been made, but the results appear to have been disappointing to those who held high expectations of the outcome.

There is little reason to expect that large export sales could be made during April-June at world prices as of grade, type, and quality, with continuation of circumstances in the world wheat market as they existed during March. At the existing and prospective price of silver and rate of Australian exchange, exports to the Orient from the United States can hardly become significant. In Europe hard winter wheat enjoys this season a peculiar desirability. It has been found that American hard winter wheat blends advantageously with Russian wheat. Nevertheless, it has been held at prices relatively too high to encourage importation into Europe. Under the circumstances, we doubt if 35 million bushels of American wheat can be exported before the first of July without price cutting. Price cutting the Grain Stabilization Corporation must avoid, in order to escape the charge of dumping. In the most careful hands and in the best circles, the word dumping is not rigidly defined. In the circles of European agrarian politicians, the term dumping is very flexible. If one defines dumping as selling for use abroad at lower price than for use at home, then export sales made in accordance with the announcement of February 26 constitute dumping. If selling for use abroad at less than the average cost of production is dumping, then also the Grain Stabilization Corporation will be charged with dumping. But it may be urged on behalf of the proposed procedures that these criteria do not apply and that so long as the American wheat is sold for export at going world prices (into the making of which the American exportable surplus has possibly had no part since October) the dumping of wheat is not contemplated or effected. From our personal experience with European tariff expositions we feel sure that if the program of export succeeds, it will be called dumping and may provoke reprisals. If the program of export does not succeed, it will be of little practical avail that it is not called dumping.

THE EFFECT OF PRICE PEGGING ON EXPORT OF FLOUR

When the Grain Stabilization Corporation pegged the domestic price of wheat substantially above the world level, profit-

able export of American flour ground from domestic wheat was made practically impossible.¹ Milling efficiency, merchandising ingenuity, established brands, and good will in foreign markets have enabled a small export trade to be maintained. The export of flour during December–March was 3.3 million barrels. If we subtract from this sum 1.4 million barrels (which we surmise will approximately correspond with the figure for export of flour milled in bond from Canadian wheat when the report becomes available) this leaves 1.9 million barrels representing the export of flour ground from domestic wheat during the period under review. This is an artificially low and disappointing export of flour, and represents an unexpected loss of business to American millers. Despite multifarious negotiations with the Grain Stabilization Corporation, looking toward the facilitation of grinding of domestic wheat for export of flour, during December–March the release of millers long established in the export trade from the undeserved and artificial suspension of a normal business has not been satisfactorily accomplished.

In February the Grain Stabilization Corporation entered into an arrangement to facilitate the export of flour by selling wheat specifically to be ground for export of flour on the basis of the world price of wheat. In effect, the arrangement consisted in furnishing to mills the wheat at the market price and the mills sold the flour into export; thereupon the mills purchased July or September futures to cover their replacement with new-crop wheat. This arrangement has had some effect in enlarging the export of flour, especially from the Pacific Coast. More recently the Grain Stabilization Corporation has offered a special arrangement to Pacific Coast millers, designed to equalize the price of wheat for export of flour on the basis of Canadian wheat at Vancouver; but since the arrangement does not contemplate meeting the price of Australian wheat and flour in Asia, the effect on export of flour to the Orient remains conjectural.

We take it that the Grain Stabilization Corporation has been alive to the injury

and inequity involved in the situation: we gather that fear of the charge of dumping has restrained their action. If wheat had been sold to millers at such prices as to have enabled them to maintain throughout the world the customary export of flour at a time when the domestic price of wheat itself stood far above export parity, this would have provoked the charge of dumping and invited reprisal. The millers of Europe are likely to invoke reprisals against dumping on even less putative grounds than would provoke the growers in those countries to do so. Whether, in connection with the program to export 35 million bushels of wheat at world prices, the Grain Stabilization Corporation will make such arrangements with millers as will enable them to resume such export of flour as ought to occur whenever wheat is freely exported, remains to be seen.

THE EFFECT OF PRICE PEGGING ON THE MILLING INDUSTRY

Three main reasons are given in support of the fixed price of wheat: the income of growers has been increased for the 1930–31 crop; the credit strain has been relieved on grain dealers and banks and disastrous insolvencies averted; and the supported wheat price has tended to avert panicky demoralization in a critical period of the business depression. Against the fixed price will be advanced, among others, several present and future criticisms: the loss to the revolving fund of the Farm Board; the precedent of governmental subsidy; the prospective loss to growers on the 1931–32 crop; the retardation of business recovery in consequence of an artificially low wheat price during 1931–32, contingent on the artificially high domestic carryover out of the crop year 1930–31; and the injury to the milling industry. The last circumstance deserves a special examination.

In addition to the suspension of normal and customary flour exports, the pegged wheat price has rendered the conduct of milling uneconomical and hazardous. In our view, this consequence was not inherent in, or a necessary concomitant of, the pegging of the price of wheat; it was a consequence of the particular application of the policy of price fixing adopted by the

¹ Cf. "The United States Wheat Flour Export Trade," *WHEAT STUDIES*, November 1930, VII, No. 1.

Grain Stabilization Corporation. Everyone conversant with the administration of milling during the war knows that with a fixed price of wheat it is possible to conserve the normal interests of flour millers. Since the pegged price of wheat introduced hazards for flour millers by depriving them of hedging during the remainder of the crop year 1930-31, and exposed them to a precipitous price decline in transition to the crop year 1931-32, any risk directly contingent on these hazards should have been carried by the Grain Stabilization Corporation. Instead, during December-March the flour millers have been left almost unaided to cope with the artificial hazards and to carry such losses as may result from the possible mishandling, or even correct handling, of their affairs under the abnormal circumstances imposed upon them.

It seems to us that the only way of avoiding this interpretation of the relationship between the Grain Stabilization Corporation and the milling industry is to assume that it lay in the intent of the Congress to impose, or condone, burdens upon millers as direct consequence of the administration of the Agricultural Marketing Act.

The intent of the Act in respect to separation of the functions of marketing wheat and manufacturing flour is therefore important. Nothing in the declaration of policy suggests that wheat growers should enter into the manufacture of flour. Under Section 7, in paragraph (a) (2) loans are authorized to assist in "the construction or acquisition by purchase or lease of physical marketing facilities for preparing, handling, storing, processing, or merchandising agricultural commodities or their food products." Under an extremely technical interpretation of the word "processing," the manufacture of flour might be conceivably included. The question is—did the Congress intend it to be included? The milling of grain is a special act of processing, to be sure; but the processing of grain in the course of marketing does not include the act of milling. The processing of wheat in the course of marketing operations includes cleaning, conditioning, and mixing. Wheat growers have long contended that grain dealers made large profits through cleaning, conditioning, and mixing wheats, and

one of the objectives of co-operative marketing of wheat has been to secure these profits for growers. A perusal of the hearings before the agricultural committees of the Senate and of the House of Representatives and of the debates in the *Congressional Record* preceding the passage of the Agricultural Marketing Act make it clear that the subsection quoted above is not to be interpreted as including the taking over of flour mills by wheat producers. This interpretation has been recently enunciated by the Farmers' National Grain Corporation in its release of March 30, 1931 (Vol. 2, No. 14), by an explicit reference to "the principle of co-operative marketing of farm products from producer to—in the case of wheat—miller or to a foreign buyer." Since it did not lie in the intent of the Act to take over the milling of wheat in the manufacture of flour, it could not lie in the intent of the Act to make the manufacture of flour uneconomical, inefficient, or hazardous. In short, while it was the intent of Congress in the Act to have co-operatives take over the marketing of wheat to the mill door, it was not in the intent of the Act to embarrass the operations of the milling industry.

The pegging of the wheat price deprived American millers, for the most part, of the customary insurance of hedging, provoked some repudiation of purchases by flour buyers, enforced reduction of wheat stocks, converted into losses some of the premiums paid for quality wheats, and compelled the mills to shift to a hand-to-mouth operation in preparation for the closing of the May contracts and the transition to the unpegged price of the new crop year. One particularly unfortunate market effect was to drive the miller from a neutral position in which he had no interest in the price level, to a defensive position in which he was forced to become interested in a lower price level. The widespread restriction of profits from the storing and handling of wheat, the reduced prospect of profit from the milling of wheat, and the loss of profit on the export of flour must have made it difficult for some millers to cover interest on bonds and dividends on stocks.

During the period under review the technical and financial operations of the flour mills have been seriously embarrassed by

the fact that the price of wheat was pegged for the crop year after the mills had purchased at least a considerable proportion of their forward supplies at premiums for quality. Prevision has compelled the mills to look forward to the new crop year. Finding themselves compelled to curtail stocks to avoid losses on wheat, and because flour buyers purchase from hand to mouth, the mills must still maintain the customary flow of flour of the customary quality and uniformity. The mills realized fully in March that they must procure stocks sufficient to afford a free flow of flour during May, June, and July without protection of hedging. Practically speaking, if the conditions prevalent during the period under review prevail during the remainder of the crop year, most mills will be operating during two or three months practically without their customary protection against risk, and heavy inventory losses since November seem probable. American flour mills have long sought to avoid speculation, but the pegged price of wheat has rendered their business unavoidably speculative.

The subsidiaries of the Farm Board are acquiring a monopoly of cash wheat, and with the close of the May contracts will own practically all of the supply outside of farms. It is assumed, but not guaranteed, that no "squeeze" will be applied on millers' hedges at the end of May for such millers as have not liquidated their positions. Beginning with April, the cash price of wheat is to be advanced by a half cent a bushel every ten days. Many of the mills will have to buy currently most of their wheat for daily grindings during June and July. During December - March the mills have been preparing for their May liquidation of stocks. The wheat growers of the country having been already advised that the price of new-crop wheat is not to be pegged, the millers have now the right to expect to be advised by the subsidiaries of the Farm Board how the mills are to be provided with wheat during the transition into the new crop year.

During April-June, with continuation of a wide spread between old-crop futures and new-crop futures, everyone dealing in flour (millers, wholesalers, bakers, and retailers) will be building down their stocks, in order

to have on hand as small a reserve as possible when flour becomes available from the new crop of wheat, at a lower price if the present level of world prices persists. This implies that the mills will be crowded with rush orders for flour as soon as they obtain new wheat at the lower price. For the first time since the war, the overcapacity of the milling industry will be utilized. The outcome for milling accounts depends to a considerable extent upon the advance flour sales made during April-June for delivery after July 1 and the extent to which hedges against such flour sales placed in the new-crop futures cover the prices to be paid by the mills for the quality wheats required to maintain their standards.

During the war it became a truism in the operations of price control that when a government fixes the price it finds itself obligated to supply the commodity in question to processors without loss entailed through the governmental operation. From this standpoint, it would seem to be the ethical duty and the commercial obligation of the Grain Stabilization Corporation to provide the mills with the wheat necessary for their operations and to protect them against losses incidental to the governmental program. That the Grain Stabilization Corporation has, in effect, not been able to do this during December-March, only increases the obligation to do so during April-July. The Corporation has declined to loan for grinding (for domestic use) old-crop wheat to be replaced with new-crop wheat. There is no intimation that the Grain Stabilization Corporation offers to provide wheat on an accounting basis, at an agreed factor of conversion, with final adjustment on the basis of prices of wheatfeed and flour. If this lies outside the legal powers of the Corporation, it does lie within the legal powers of the Corporation to furnish wheat to mills at such prices as shall protect them from undeserved losses. If the unprotected situation of the mills is permitted to drift into the free market of the new crop year, it will be difficult to arrive at any other interpretation than the inference that the Grain Stabilization Corporation, facing heavy losses to the revolving fund of the Farm Board, has declined to safeguard the milling industry.

INFLUENCE OF THE PEGGED PRICE ON FUTURE
MERCHANTISING OF WHEAT

In the hope that the crop year 1931-32 might present a price high enough to transform the pegging of the domestic price into an advantageous operation, the Grain Stabilization Corporation must have envisaged the occurrence of one or more of several developments. The list of desired contingencies included the feeding of a large amount of wheat to animals in the United States, a reduction of wheat acreage in the United States, a reduction of wheat acreage in other countries, a significant increase in use of wheat with low wheat price, the occurrence of crop shortage somewhere else in the world, the subsidence for this crop year and the non-repetition for the next crop year of Russian exports, and the upturn of the business cycle during the summer of 1931.

The announcement on March 22, 1931, that the wheat price of the new crop year would not be "stabilized"—that the market for the new crop would be free in its relation to exchange trading and to the world price—may have been due to convictions on these points as much as to prospective losses to the revolving fund. Until the first of July the subsidiaries of the Farm Board will be engaged in accepting and storing the wheat which will come to them as the final consequence of their "stabilization." Present estimates of the carryover vary from 275 to 350 million bushels. Most of the outbound carryover, outside of farms, will belong to the Farmers' National Grain Corporation and the Grain Stabilization Corporation, mostly to the latter. The amount of wheat to be ground during April-June may be approximately computed. Unless provisions are taken to the contrary, some new-crop wheat from Texas and Oklahoma may be delivered to the Grain Stabilization Corporation at the old-crop price. The subsidiaries of the Farm Board have not merely to plan to supply the mills during the transition into the new crop year, but have also to consider the ultimate disposition of their accumulated stocks. So far as has been announced, the progressive raising of the price of cash wheat every ten days, the program of export discussed above, the described plan to

facilitate export of flour, and the limited offer to mills to exchange old for new wheat represent the only publicly known steps taken by the subsidiaries of the Farm Board to facilitate the disposition of wheat.

Wheat growers will find it difficult to understand why a low new-crop wheat price is not to be supported. The explanation of the emergency in the down swing of the trade cycle in November will hardly be accepted as satisfying to growers. If the cash price of wheat with the opening of the new crop year is anywhere near as low as the July future price at the end of March, growers will tend to lose their sense of appreciation of their gain through the pegging of the price during 1930-31. We take it that the prospect of loss to the revolving fund will not be accepted as a sufficient explanation for the unexpected change of policy. Coming down to practical questions, wheat growers will expect the Grain Stabilization Corporation to keep the old-crop wheat off the market until growers have had opportunity to sell their 1931 crop wheat—until, let us say, March 1932. Indeed, one already hears it proposed in the wheat regions that the carryover on June 30, 1931, should be impounded until a short crop occurs, for years if necessary. Against this, it is hardly to be doubted that the Farm Board will determine its holding policy in part by the acreage planted to wheat in the fall of 1931—continuing to carry the stocks in approval of contraction of acreage or proceeding to merchandise them in disapproval of the refusal of wheat growers to contract acreage. To some extent, the time and method of disposition of the wheat stocks of the Grain Stabilization Corporation may be modified by developments in the trade cycle; if recovery is rapid after the spring of 1932, these stocks might be absorbed on the world's market without significant price depression; if recovery is not pronounced, to have these stocks thrown on the world market might substantially retard recovery.

During the concluding months of the present crop year the Farm Board and its agencies will need simultaneously to establish policies in the liquidation of the consequences of the pegged wheat price of the 1930-31 crop, and in arrangement for the

merchandising of the 1931 crop of wheat in accordance with the intent of the Agricultural Marketing Act. The dual problem will be difficult to solve. Possibly since the two phases are incompatible in some respects, solution of the dual problem may turn out to be impossible; the Farm Board may need to choose between the future and the past. The bumper crop of wheat in 1915 was the "break" which many observers believe contributed (with the entrance of

the United States) to the decisive issue of the war. A short wheat crop in the world would be the "break" which would tend more certainly than other possible developments to save the farm boards, or corresponding agencies, in many countries. With continuation of large supplies and low prices, it becomes more difficult to discern how the farm relief legislation in many countries is to secure justification with wheat growers.

V. SOME ASPECTS OF THE OUTLOOK

As usual, the outlook for significant developments in the world wheat situation during the closing four months of the crop year is full of uncertainties. Will the wheat crop of 1931 progress favorably or unfavorably? Will Russia again flood the international market with wheat, more or less as she did in September-December 1930? Will Argentina, Canada, Australia, or the Grain Stabilization Corporation in the United States choose at one time or another, simultaneously or separately, to press export sales? Is the stocks position in Europe such that imports must be significantly heavier in April-July than they were in December-March? Will trade with the Orient continue at the rather high level characteristic of the winter months? Will firmness in the feed grain position that became prominent in March continue into the ensuing months? What is to be anticipated with regard to the course of the trade cycle, including the index numbers of wholesale prices? These are pertinent questions, and seem to require rather specific answers if the outlook for trade and prices in April-July, and for year-end stocks, is to be phrased in terms of probabilities rather than in terms of possibilities. Yet it must be said that on most of these matters the array of factual knowledge upon which sound answers may be based is neither complete nor convincing, though more so for some questions than for others. In the following pages, for what it may be worth, we set forth as specific an evaluation of the outlook (including a statement of assumptions that apparently need to be made) as we are able to compass in brief space.

Without detailed discussion, we assume

that in the months of April-July the depression phase of the trade cycle, including wholesale prices of basic commodities in particular, will cease to be its prominent feature, and that there may be a tendency, though not a striking one, toward improvement. This view is widely held among students of trade cycles. We further assume without discussion that something of the firmness apparent in the international feed grain position in March may continue in April-July, even though Argentina now appears to be harvesting the largest corn crop in her history.

PROSPECTS FOR 1931 WHEAT CROP

At the date of writing (April 30), the available information on wheat areas sown and to be sown, winter-wheat areas abandoned, spring condition of the winter-wheat plant, and the status of soil moisture in the spring-wheat areas is hardly adequate to provide a reliable basis for adjudging the probable size of the 1931 wheat crops in the important producing areas. Weather conditions in the growing season will be of dominant importance.

In general, reductions in areas sown or to be sown in some countries appear likely to exceed increases in other countries. Official statistics point to reductions in the acreage of winter wheat sown and to be harvested in 1930-31 as compared with 1929-30 in Canada, Roumania, and Algeria; unofficial reports suggest reductions in France, the United Kingdom, and Belgium, and (for the crops which at this time are not yet completely sown) in Argentina and Australia. Increases in the winter-wheat areas sown are officially reported in Germany,

Finland, Lithuania, Italy, and Russia. Farmers in the United States have expressed their intentions to reduce the area sown to spring wheat rather sharply; well-informed observers anticipate a reduction of 10 per cent or more in the spring-wheat acreage in Canada; on the other hand, a large increase in the area sown to spring wheat in Russia is planned and forecast by Soviet officials.

The winter was mild in the United States, and abandonment of winter-wheat acreage is officially reported as exceptionally small, only about 4 per cent of the area sown as against a ten-year average of 12.1 per cent. In Europe, the wheat plant appears to have suffered relatively little damage except in France and Belgium, where excessive moisture seems to have resulted in a rather thin stand. On the basis of information available at the date of writing, the appearance of the Northern Hemisphere winter-wheat crops seems to warrant little more than the statement that yields per acre about of average size are in prospect except in France and Belgium, where the outlook is not favorable, and in the United States, where the outlook is exceptionally favorable. The condition of the soil in the North American spring-wheat belt and in Russia appears not to point either to unusually good or to unusually poor yields of spring wheat; and much the same may be said of winter wheat in Argentina. In Australia, the soil presumably contains a more ample supply of moisture than usual, a circumstance which in itself favors yield per acre above the average.

If the outlook for wheat production in 1931 as it now assumes nebulous form is to be formulated in quantitative terms, one must fall back upon assumptions. The tabulation below represents an attempt to evaluate such meager information as is now current. It shows, in million bushels, the 1930 wheat crops as officially estimated for the principal producing regions or countries, in contrast with wheat crops that may be harvested in 1931 *if the assumptions upon which the calculations are based prove to be valid.*

These assumptions—a rather extensive list—may be stated categorically as follows: The first official forecast of 347 mil-

lion bushels may be accepted for the Indian wheat crop of 1931. For the winter-wheat crop of the United States the official forecast of 644 million bushels as based upon areas sown and abandoned, and on condition as of April 1, is to be accepted. Wheat acreages for 1931 may be assumed to be reduced, as compared with acreages in 1930, by 5 per cent in the Danube basin, 10 per cent in Canada, 5 per cent in Argentina, and 20 per cent in Australia; in the United States, the harvested area of spring wheat may be assumed to prove to be the area which, according to official calculations, would be sown if farmers carried out their expressed intentions (as of March 1) to plant to the extent that, on the average, they have carried out similarly expressed intentions in earlier years; in the European importing countries, the wheat areas harvested may be assumed to equal those harvested in 1930; in Russia, the total wheat area may be assumed to be increased 10 per cent. The condition of winter wheat, and soil conditions in the spring-wheat area of North America and Russia and in Argentina and Australia, we assume to be such as to suggest at this time nothing more definite than average post-war yields per acre so far as concerns spring wheat in North America, and all wheat in Europe including Russia, in northern Africa, and in Argentina, but a yield above average in Australia, where reserves of moisture already accumulated seem to be sufficient, other things equal, to warrant the assumption of a yield per acre more than 5 per cent above the post-war average.

We regard these assumptions and predictions as about as reasonable in their broad outlines as any that can be formulated at the moment from the information available, though presumably no two observers would agree on most of them. It might well be urged, for example, that Canadian acreage will not be reduced by 10 per cent, or Australian by 20 per cent, or Russian acreage increased by 10 per cent; it might likewise be urged that the present condition of winter wheat in Europe, say, points to yield per acre either above or below the post-war average. The accompanying tabulation is not presented as a forecast of outturns, but merely as a state-

ment of outturns as they would be if the stated assumptions are correct and if ordinary weather conditions, resulting in post-war average yields per acre in most countries, should prevail during the growing and harvesting periods. The experience of past years, of course, by no means suggests that ordinary weather will prevail in all countries or in any; but the status of long-range weather forecasting seems not to warrant at this time any other assumption than that, of all possible future weather conditions, ordinary or normal ones (however vaguely defined) are more likely to prevail than notably favorable or notably unfavorable conditions.

Region	Million bushels	
	1930	1931
India	387	347
Lower Danube ^a	340	290
European importing countries ^b	1,012	1,040
United States winter wheat.....	604	644
United States spring wheat.....	247	225
Canada	398	385
Argentina	239	250
Australia	205	190
Soviet Russia	1,097	1,010
Others ^c	220	210
Total	4,749	4,591

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

^b All European countries except the Danube countries, Russia, and Albania.

^c Egypt, Algeria, Morocco, Tunis, the Union of South Africa, Uruguay, Chile, Peru, New Zealand, Japan, Chosen, and Mexico.

On the basis of these calculations, which will certainly need to be modified as evidence accumulates regarding areas sown, abandonment, and crop developments, the momentary reasonable expectation seems to us to suggest a world wheat crop in 1931 (excluding China and Asia Minor) somewhat smaller than the crop of 1930. Recent advices suggest that the presence of insects may tend to make the figure for the United States winter-wheat crop appear somewhat high. Deficient moisture in the North American spring-wheat belt, which has been mentioned with increasing frequency as the days passed in April, suggests that the reasonable expectation may be for yields per acre not of post-war average size, but somewhere below. On the other hand, it is possible that favorable conditions in Australia might lead to a reduction of less than 20 per cent in the area sown.

PRICES

The outlook for international wheat prices in May-July (as judged by average prices of wheat parcels sold in the United Kingdom or by Liverpool futures prices) seems to depend heavily on the one hand upon the manner in which the wheat crops of 1931 progress in the interval, and on the other upon the manner in which buying or selling pressure involving wheat from the 1930 crop may develop on the international market.

So far as concerns new-crop prospects, it seems impossible to formulate at the moment a more reasonable expectation than that, with ordinary weather, the harvest will bring a Northern Hemisphere crop somewhat smaller than that of 1930, and somewhat below the approximate line of post-war trend. Ordinarily a change in this direction in the size of the Northern Hemisphere crop has, on the statistical record, resulted in an upward movement of wheat prices from spring to fall.¹ If it is reasonable to expect at the moment that the Northern Hemisphere crop of 1931 will prove to be somewhat smaller than that of 1930, and also will fall somewhat below the line of trend, then it appears reasonable at the moment to anticipate firm or rising prices in May-July on these grounds alone, but not sharply rising prices because one has no adequate reason at the moment to expect a large reduction in the crop of 1931 as compared with the crop of 1930. Unusually favorable or unfavorable progress of the new crops would, of course, alter fundamentally this aspect of the outlook for prices as it now appears.

So far as concerns the matter of prospective buying or selling pressure on the international market, the features of outstanding significance appear to be on the one hand the present low level of wheat stocks in the importing countries of continental Europe, and on the other hand the strikingly heavy stocks potentially available for export in the major exporting countries.

We take it that European demand for import wheat is likely to prove more ac-

¹ See V. P. Timoshenko, *Wheat Prices and the World Wheat Market* (Cornell University Agricultural Experiment Station Memoir 118), December 1928.

tive in April–July than it was in January–March. The accumulation of stocks of import wheat in Europe that resulted largely from heavy Russian exports has been reduced greatly; much less import wheat is now available in Europe to cover milling requirements in April–July than was available to cover requirements in December–March. Stocks of domestic wheat seem to stand at rather low levels in Germany and France by contrast with earlier years, and as the prices of domestic wheat and of bread have tended to rise in those countries, increasing pressure has been put upon governments to relax milling regulations and to lower tariffs. This situation seems likely to become increasingly acute, provoking pressure to relax curtailment of exports. The supply of wheat afloat to Europe, only 48.0 million bushels as of April 1, as compared with a ten-year average of 62.2 million bushels, was not large enough to permit importers to draw as heavily upon this supply as they have done on the average during April–July. Other things equal, European demand may prove more active in April–July than in January–March if, as we assume, the firmness of feed grain prices apparent in March continues in April–July, encouraging the utilization of import wheat as feed; and if, as we assume, the months of April–July are to witness the trade cycle in its trough or beginning a gradual upward movement rather than continuing in its downward phase. Demand from ex-Europe, on the other hand, seems somewhat less likely than European demand to prove more active in April–July than in January–March. It seems necessary to reckon with a diminution in Indian demand for Australian wheat on account of the advent of a new crop and the imposition of a wheat import duty, and possibly with a diminution of Chinese demand as river transport in the spring permits a freer flow of domestic wheat than could occur in the winter. On the other hand, stable or rising prices of silver, which are postulated in our assumption of gradual improvement in the trade cycle, would tend to stimulate demand from the Orient, and it may be that the generally low level of wheat prices has inaugurated in China a tendency to import heavily that will con-

tinue for some months, aided by the cessation of internal warfare and by relative firmness in the price of rice.

Import demand for wheat, then, may well prove to be more active in April–July than it was in January–March. Nor does it appear probable, on the whole, that severe selling pressure will arise in the course of the next few months. It is true that stocks are known to be distinctly large in the United States, Canada, Argentina, and Australia. Extremely severe selling pressure could be put upon the international market if holders of wheat in all of these countries should choose to attempt to reduce their stocks to average or low levels at the end of the crop year. But the events of December–March suggest that no appreciable pressure is likely to originate either in India or in the Danube basin; apparently, heavy exports would come from these countries only under the stimulus of a significantly higher level of international prices. The peak of the wheat export movement from Argentina has presumably passed. Although Argentine stocks are now large enough to permit exports in April–July to run notably larger in relation to January–March shipments than is usually the case, such an outcome seems improbable in the face of a huge crop of corn and (we assume) of corn prices high in relation to wheat prices; moreover, the relatively poor quality of a fraction of the remaining exportable surplus presumably tends to encourage domestic retention, especially at the low level of prices. So far as concerns the United States, it may be taken for granted that notable selling pressure, private or governmental, will not be exerted prior to the advent of the new crop in July. The Stabilization Corporation, owning or about to own most of the old-crop wheat, is apparently firm in its intention not to unload its holdings by underselling other exporters on the international markets, and could hardly do so in view of the international and domestic complications inherent in such a procedure.

Present indications, moreover, seem not to point to notably heavy exports from Russia in the coming months. Three full weeks have passed in April, and Broomhall's shipments from Russia have averaged

less than half a million bushels a week, an amount smaller than average weekly exports in January–March; this has occurred despite the fact that the spring peak of Russian exports in pre-war years occurred in April, following the opening of navigation. Although information is not accessible as to the stocks held ready for export by the Soviet government, and although the need to export in order to pay for imports is probably no less than it was in the fall, the small shipments of recent weeks go far to suggest that no spring peak of wheat exports is to occur this year, that weekly average exports are more likely to remain small than large in the remaining months of the crop year, and that pressure of Russian wheat on the international market is unlikely to be witnessed in the current crop year.¹

If selling pressure on the international market arises in April–July, it therefore seems more likely to originate in Australia or Canada than elsewhere. The Australian crop moved somewhat slowly to export in January–March; the condition of the soil seems to augur a good crop in 1931; the stocks remaining in the country on April 1 were unusually heavy; the general necessity to export is uncommonly acute if international obligations are to be met; and there is no alternative cereal crop for export, as there is in Argentina. One may thus reasonably expect Australian exports in April–July to run exceptionally heavy in relation to January–March exports. But Australian exports of as much as 50 million bushels would be a large quantity, yet a quantity that would hardly constitute a fifth of probable total shipments in April–July. Potentially, an outpouring of exports from Canada (whose April–July net exports have not fallen as low as 50 million bushels in the past eight years and have in two of these years exceeded 100 million) could create considerably greater pressure than is possible from Australian exports; and total stocks in Canada were heavier on

March 31, 1931, than ever before. It may be doubted, however, if Canadian holders, co-operative or private, will choose to press their wheat for sale, at least until the outcome of the new crop becomes clearer late in June or in July. The official estimates of stocks on March 31 suggest that farmers are tending somewhat to hold their grain, and the relatively small spreads between Winnipeg and Liverpool futures prices that have persisted for some months may reasonably be interpreted as evidence that merchants and speculators are tending to hold stocks of Canadian wheat rather firmly.

Thus the information now available suggests (under the assumptions of ordinary weather and with regard to acreages) that the May–July period may witness more active import demand for wheat than was apparent in January–March, and at the same time no particularly severe selling pressure on the part of exporters. On the whole, the international market seems less likely to have the characteristics of a buyers' market than was the case in the first eight months of the crop year; forced sales of old-crop wheat may prove to be less in evidence. International wheat prices may therefore tend to show firmness or to rise from their January–April level, the more so because that level was so low. At the moment the available information suggests not only a smaller Northern Hemisphere wheat crop in 1931 than in 1930, but also fairly active import demand coupled with absence of notable selling pressure on the international market in May–July; consequently the outlook at the moment may reasonably be said to favor rising international wheat prices in May–July,² though it seems improbable that under these circumstances (which do not include as probable the appearance of a crop scare) an advance in prices could go far in the presence of the heavy stocks in the major exporting countries. A week or a month from this date (April 30), changing weather conditions or the accumulation of more authentic data of many sorts bearing on the wheat situation may have altered the present outlook substantially.

Considerable interest may attach to an examination of price movements in pre-

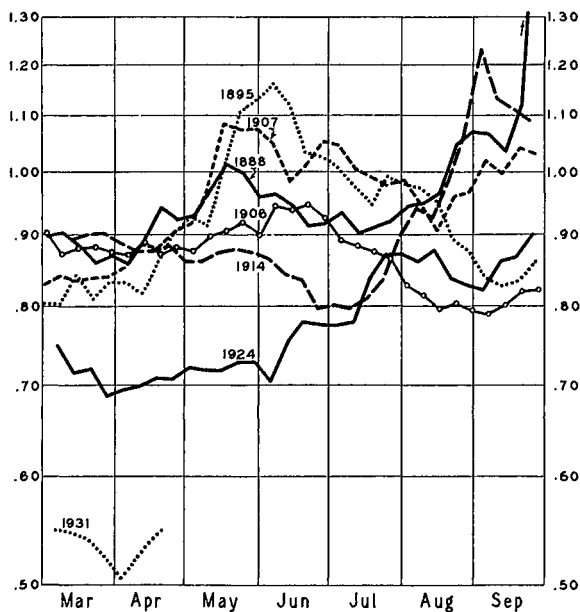
¹ Before the war and in 1930, it was not until August that Russian exports became seasonally large.

² Needless to say, prices of cash wheat, of old-crop futures, and possibly even of the new-crop futures in the United States could under the circumstances remain in July at their present levels or decline even if international prices should rise.

vious years in which conditions were similar in important respects to existing conditions. A substantial difficulty arises in determining what conditions, if any, ascertainable in advance, have an important bearing on price movements. In the course of an extended study of characteristics of wheat price movements, we have come upon certain classifications which, after rigorous testing, appear to throw some real light upon probable subsequent price movements. Chart 8 shows the course of the

CHART 8.—COURSE OF CHICAGO SEPTEMBER WHEAT FUTURE, MARCH–SEPTEMBER, IN SELECTED YEARS*

(U.S. dollars per bushel at 1913 price level; logarithmic vertical scale)



* Friday closing prices from *Chicago Daily Trade Bulletin*, divided by calendar year averages of Bureau of Labor Statistics index number of wholesale prices (Joseph L. Snider's index number for 1888) on 1913 base. The years for which data are shown, including 1931, are selected on the basis of characteristics, described in accompanying text, which have been found significantly related to the accompanying and subsequent price movements. Differences in March–September crop developments especially lead to much diversity of movement among the different years; four out of six showed a marked price rise at some time prior to the end of July and only one of the six failed to show some rise within that period.

Chicago September wheat future, during and slightly beyond the last months of those crop years which, on this classification, showed conditions most closely resembling those in 1930–31.

The general criteria by which the years

are chosen are: (1) the average (deflated) price during the previous three seasons fell within an intermediate range; (2) no crop scare sufficient to cause a large and sharp price rise occurred during the previous 12 months; and (3) the world wheat crop harvested during the previous 12 months was above the estimated line of trend. The evidence on which these criteria have been selected as significant has been very briefly discussed in a recent paper;¹ at this point it is possible only to state that the criteria have been chosen upon the basis of their general usefulness in establishing relationships among major wheat price movements throughout the period since 1887, omitting only the war and immediate post-war years.² Study of probable explanations of the similarity of price movements in years grouped according to such classifications as the above has served to emphasize the importance of analyses such as that undertaken elsewhere in this section. We believe that, in the absence of similar analyses for many previous years, the criteria above described provide a useful basis for selecting years which, if subjected to such an analysis, would show a significant degree of similarity. If so, the price records shown in Chart 8 are useful in suggesting concretely, if somewhat roughly, the range of possibilities for price movement during the months May–September 1931.

On the score of average price for the previous three years, lack of crop scare during the previous 12 months, and size of previous world crop, prices for one other year, 1910, might have been included in Chart 8. In other respects, however, conditions in 1910 were so unlike those in 1931 that inclusion of that year would tend to be misleading. In terms of the definitely known

¹ Holbrook Working, "Materials for a Theory of Wheat Prices," *Proceedings of the International Conference of Agricultural Economists*, II, 713–23. Fuller publication is planned for an early number of *WHEAT STUDIES*.

² It may be worth noting that in August 1929, when some were emphasizing the striking parallelism between the price movements of June–August 1929 and June–August 1924, a significant factor leading us to question the suggestion that that parallelism might be continued was the fact that 1929 and 1924 differed sharply as regards the average level of prices during the previous three years; according to that apparently important criterion, the two years could not be expected to show long-continued similarity of price movement.

conditions that appear to be most significant, 1931 most closely resembles 1895 and 1924. Although world stocks of wheat in the spring and summer of both 1895 and 1924 were probably above average, they were almost certainly not as large, even for the time, as world stocks in 1931, a factor that should tend to moderate any rise in prices that may develop in the spring or summer of 1931.

SHIPMENTS AND EXPORTS IN APRIL-JULY 1931 AND AUGUST-JULY 1930-31

Broomhall's total shipments of wheat and flour in April-July in each of the nine crop years preceding 1930-31 except 1922-23 and 1929-30 have fallen below shipments in December-March of the same crop years.¹ Shipments in April-July 1931, however, may reasonably be expected to equal or exceed shipments in December-March 1930-31, in view of the relatively small stocks of wheat in Europe and afloat to Europe and of the abundant stocks in exporting countries. Shipments in December-March 1930-31 totaled about 245 million bushels; perhaps it is reasonable to expect that about 260 million bushels will be shipped in April-July if the weather leads to ordinary development of the new crops. In the past five years, Broomhall's shipments in April-July on the average have exceeded total net exports in the same months by about 8 million bushels, though in some years the discrepancies, so far as they can be measured, appear to have been larger and in other years smaller. Perhaps net exports in April-July may reasonably be expected to approximate 255 million bushels.

For reasons set forth in preceding paragraphs, and on the basis of the seasonal course of net exports in the past decade, a rough allocation of net exports to the exporting areas, in rounded figures, might be as follows, in million bushels:

United States	25
Canada	95
Argentina	60
Australia	50
Russia	10
Others ^a	15
<hr/>	
Total	255

^a India, Algeria, Morocco, Tunis, Poland, Hungary, Jugoslavia, Roumania, Bulgaria, Chile.

Such an allocation implies that Australia may export more heavily in April-July than in these months of any of the past nine years, and a quantity larger in relation to January-March exports than is usually witnessed. Argentine April-July exports would be large in relation to January-March exports, a little above the average April-July exports of post-war years. Exports from the United States would be appreciably smaller than average post-war April-July net exports, but no smaller than those of 1924 and 1928; they would be strikingly small in relation to the stocks existing in the country in March, but strikingly large in relation to the net exports of January-March. Exports from Canada would be larger than post-war average April-July net exports, but smaller than those of April-July 1924 and 1928; they would be small in relation to Canadian stocks on March 31, 1931, but not as small as April-July net exports in 1930 were in relation to stocks on March 31, 1930; and they would be strikingly large in relation to net exports in January-March 1931.

Broomhall's shipments in August-March 1930-31, official statistics of net exports in these months so far as the data are available, the outlook for trade in April-July as it has been set forth above, provide a basis for revision of our estimates, published in January 1931,² of probable net exports from the several sources and in total for the crop year 1930-31. Table 6 (p. 334) shows Broomhall's estimates of probable shipments as they stood on January 7 and April 1, 1930, in contrast with our own estimates as of about January 10 and April 25. It should be noted that shipments, from North America and the Danube basin particularly, always tend to fall below official statistics of net exports from the countries in these areas;³ total shipments have fallen below total net exports by around 25 mil-

¹ The statements in this section have reference to Broomhall's shipments statistics as calculated by months rather than by weeks; see *WHEAT STUDIES*, March 1931, Vol. VII, No. 5. Figures for periods like December-March differ a little when based upon monthly data from figures based upon weekly data, as in Tables 1 and 5, pp. 297, 303.

² See *WHEAT STUDIES*, January 1931, VII, 211-13.

³ See "Official and Unofficial Statistics of International Trade in Wheat and Flour," *WHEAT STUDIES*, March 1931, VII, No. 5.

lion bushels on the average in the past five crop years. With allowance for this discrepancy, our present estimate of total net exports for 1930-31 coincides closely with Broomhall's standing estimate. The events of the past four months have led Broomhall

TABLE 6.—PROBABLE SHIPMENTS AND NET EXPORTS IN 1930-31*

(Million bushels)

Country	Broomhall's estimates of shipments		F. R. I. estimates of probable net exports	
	Jan. 7	April 15	Jan. 10	April 30
United States	144	112	110	100
Canada	232	256	280	280
Argentina	104	112	140	120
Australia	104	128	135	135
Russia	88	116	90	100
Danube	40	40	45	45
India	8	8	10	5
Others	16 ^a	12 ^a	15 ^b	20 ^b
Total	736	784	825	805

* Broomhall's data from the *Corn Trade News*, January 7 and April 20, 1931. Our own January estimates of probable net exports appeared in *WHEAT STUDIES*, January 1931, VII, 211-13.

^a North Africa and Chile.

^b Algeria, Morocco, Tunis, Chile, Poland.

appreciably to increase his earlier estimate of total shipments, whereas we interpret developments as indicating a moderate reduction in our earlier estimate of total net exports. It now seems probable that Russia and "other countries" will have exported by the end of the year rather more than seemed probable early last January; the United States and India may export net a little less, and Argentina considerably less (largely because the official estimate of the crop now stands over 30 million bushels below the estimate current in January).

YEAR-END STOCKS

If aggregate stocks of wheat in March were so large in the four major exporting countries, afloat to Europe, in the Danube basin, in India, and in Russia as to warrant the inference that world stocks stood, despite a rather low level in the European importing countries, at the second highest March level of post-war years, it follows that stocks at the end of the crop year are indicated to stand at nearly the highest

level of post-war years. There is no good reason to suppose that utilization of old-crop wheat (for food, feed, and seed) is likely to prove to be of such extraordinary magnitude in April-July that a level of world stocks in March exceptionally high in relation to the levels of past years (except probably 1929) should be transformed by August into a level that will not be extraordinarily high in relation to the August levels of earlier years. Trend considered, the utilization of wheat for seed can hardly prove to be large; one can see no reason to anticipate notably heavy consumption of wheat for food, at least outside of the Orient; it is only the use of wheat for feed that may be supposed to prove rather heavy, and enlargement of this avenue of utilization presumably could not be of major significance in the coming months. For some months to come the general level of stocks may well act as a potential or actual hindrance to an upward movement of wheat prices, as it seems to have done since the huge crop of 1928 was harvested. The distribution of these stocks geographically and by ownership, however, at the moment appears to make them rather less of a threat to the level of international prices than they were in April 1929 or 1930.

India, having harvested a bumper crop in 1930 and having exported but little wheat in 1930-31, presumably will hold exceptionally heavy stocks of old-crop wheat, and possibly of old- and new-crop wheat combined, at the end of the crop year. Numerical evaluation of Indian stocks seems not to be feasible in the absence of definite knowledge regarding fluctuations in actual consumption. Any inference as to the probable size of Russian year-end stocks seems to rest of necessity on the fact that her crop minus her prospective net exports in 1930-31 would seem to have left within the country at least 140 million bushels more wheat than was available in any other post-war year. In most countries such figures would suggest rather definitely an outlook for a distinctly heavy carryover, but it seems impossible to ascertain whether this large total supply in Russia will have passed predominately into consumption or will have been employed in some part to build up stocks. Tentatively it seems

reasonable to suppose that something of an accumulation of stocks may have occurred; but the inference, without being supplemented by information regarding the position and ownership, carries little significance.

In the Danube basin, if net exports for the year approximate 45 million bushels and the crop of 1930 reached 340 million, domestic utilization in 1930-31 will have fallen close to its approximate line of post-war trend, and one may suppose that year-end stocks will about approximate those of 1930—moderately large, but by no means as large as the heavy supplies that appear to have been carried out of 1928-29, a year characterized by a huge crop and exports only of moderate size. So far as concerns the importing countries of Europe, year-end stocks in the aggregate may well prove to be relatively small, even if imports are fairly heavy in the closing months of the crop year; France and Germany in particular presumably will retain notably small amounts of wheat.

Year-end stocks of Canadian wheat in the United States, of United States wheat in Canada, stocks afloat to Europe, and stocks in ports of the United Kingdom do not vary from year to year as strikingly as stocks in the major exporting countries, and we have discovered no particularly useful method of anticipating possible changes. If wheat moves in relatively large volume toward the end of the crop year, however, it seems probable that year-end stocks of wheat afloat to Europe may prove to be above average in size, larger than the year before.

Available statistics warrant more detailed analysis of the outlook for year-end stocks in Argentina, Australia, Canada, and the United States, though little can be said of Argentina and Australia. In Argentina, stocks on August 1, 1930, seem to have approximated 70 million bushels; the standing official estimate of the crop of 1930 is 239 million; total available supplies for the crop year were 309 million bushels if these two estimates are correct. Exports during the year may reach 120 million bushels (on the basis of reasoning set forth above); domestic utilization for food and seed may be estimated at about 88 million bushels; with allowance of around 6 million bushels for

feed and waste, total domestic utilization would be 214 million bushels, and year-end stocks about 95 million.¹ Stocks of this size would considerably exceed those of August 1930, slightly exceed those of 1928, but would fall 40 million bushels below the huge stocks of 1929.

A similar calculation for Australia,² based upon the standing official crop estimate and our own estimates of initial stocks, probable net exports, and seed, food, and feed requirements, suggests that Australian year-end stocks may attain the highest level of post-war years, some 50 million bushels. Stocks of this size would be nearly double the post-war average, and 15 million bushels in excess of the stocks of August 1, 1930. If one were to employ 190 million bushels rather than 205 million to indicate the size of the crop of 1930,³ our calculations suggest that year-end stocks might approximate 35 rather than 50 million bushels.

As of March 31, 1931, stocks of wheat in Canada were officially estimated as 275 million bushels, by far the largest quantity on record. Reductions in total Canadian stocks between March 31 and July 31 have ranged from 95 to 157 million bushels in the past seven years for which records are available, the varying volume of exports in April-July being the principal cause of the wide variation in the amount by which stocks have been reduced. These reductions have very closely approximated in all years except 1924 the sum of April-July net exports and of the estimated quantities of wheat used for seed.⁴ If approximately the same relationship holds in 1931, and if net exports in April-July and seed use in the sowing period are properly to be estimated at about 95 and 43 million bushels respec-

¹ See Appendix Table XIII for a tabulation of the items in Argentine wheat supplies and disposition.

² See Appendix Table XIII.

³ See *Foreign Crops and Markets*, March 23, 1931, p. 342.

⁴ In terms of seven-year averages, the reduction in stocks is 127 million bushels, while the April-July net exports plus the quantities of wheat used for seed average 125 million. This close correspondence is difficult to explain, for one would suppose that the stocks of wheat in Canada on March 31 must be drawn upon in April-July to provide for domestic food and feed as well as for export and seed, and that reduction for these purposes might well amount to more than 3 million bushels in four months.

tively, one could expect the stocks on March 31 to be reduced by something more than the 137 million bushels in the course of four months. If so, year-end stocks would approximate 130 million bushels; this would be the largest carryover on record, exceeding that of 1930 by some 18 million bushels. However, the carryover presumably could be considerably less than 135 million bushels (even on the same calculations as to April-July net exports and seed requirements) if Canadian farmers should in April-July feed to animals a great deal more wheat than usual.¹

As of March 1, 1931, stocks of wheat in the United States on farms, in country mills and elevators, and in the commercial visible supply apparently reached the huge total of 451 million bushels. Over the past nine years, reductions in these stocks between March 1 and July 1 have averaged 187 million bushels, ranging from 158 to 211 million. In some respects the present outlook seems not to favor as heavy a reduction as usual in March-June 1931. In general, stocks in these positions have to be drawn down through utilization of wheat for spring-wheat sowings, for milling for domestic consumption, for domestic feeding, and for export. On the basis of reasoning set forth above, the prospective use of wheat for seed and for export is relatively small, though small disappearance in these channels may not prove to be of major significance. A more important process

which will presumably occur is reduction of the wheat and flour stocks held on March 1 by city mills and of flour stocks held by bakers. With the price of wheat and flour in effect pegged at least until the end of June, and so long as the price of the new-crop futures stands far below the current pegged price, millers have no incentive to carry stocks beyond minimum operative requirements or to sell flour in forward positions, and bakers have no commercial incentive to buy other than from hand to mouth, awaiting the advent of a new-crop flour price that may be lower than the old-crop price.² If millers and bakers tend to draw down their own stocks more than usual, the effect must be to draw down stocks in antecedent positions less than usual. On the other hand, it is possible that disappearance of wheat for feeding may prove to be significantly heavier than usual in March-June 1931. On this subject little tangible and convincing evidence is available. The question, however, is not so much as to the fact of and prospect for relatively heavy feeding, but as to how large the amount fed, even if relatively heavy, may prove to be. We take it that many sorts of evidence warrant the inference that feeding of wheat has been and will be of larger volume than usual, but that the volume is unlikely to reach much, if any, more than half of the 236 million bushels which farmers stated in November that they intended to feed. On the suppositions that in March-June drafts upon March 1 stocks on farms, in country mills and elevators, and in the visible will be relatively large as induced by feed use of wheat and relatively small as induced by utilization by mills and bakers, it would be more or less reasonable to suppose that these stocks would decline somewhat less than they have done on the average, say by about 175 million bushels. A reduction of this size would leave stocks on farms, in country mills and elevators, and in the visible at 270 million bushels on July 1, 1931, over 60 million bushels larger than the year before. Except for stocks on farms, most of this would be owned by the Grain Stabilization Corporation. The outward carryover of wheat in city mills and in transit to mills, however, would presumably stand at an exceptionally low level—

¹ The Dominion Bureau of Statistics has attempted to ascertain the quantity of wheat that farmers in Canada intended to feed to farm animals and poultry in 1930-31. The inquiry revealed intentions to feed 10.8 per cent of the crop of 1930, some 42.9 million bushels. At the moment, however, this tentative evaluation of the quantity to be fed cannot be taken at its face value. As the Dominion Bureau has pointed out in a press release of April 10, 1931, the available data on stocks, crop, exports, seed, and consumption may be interpreted at present to mean either that wheat in fact has been and will be fed as farmers have indicated, and that the January crop estimate is too low; or, on the other hand, that the crop estimate is correct, and that wheat has not been fed to the extent that farmers have indicated.

² This general situation has a bearing on the outlook for exports and prices in July. It is probable that mill demand for new-crop wheat will be extraordinarily heavy when the new crop begins to move; and exceptionally heavy mill demand would tend to restrain exports that otherwise might occur, and also to hinder domestic new-crop futures from dropping to a shipping differential below Liverpool futures.

probably no higher than 30 million bushels as compared with 61 million on July 1, 1930. Total stocks of wheat in the United States, so far as they are measurable, might therefore approximate 300 million bushels, the largest quantity on record and about 25 million bushels larger than stocks at the end of 1929-30.

Table 7 brings together in summary form the outlook for year-end stocks as it has been set forth in the preceding pages. Total year-end stocks in the major exporting countries, afloat to Europe, and in Europe ex-Russia now seem likely to exceed the stocks existing at the end of 1929-30, but to fall below those existing at the end of 1928-29. Increases seem more or less reasonably to be in prospect outside of Europe ex-Russia. The crop year appears likely to have witnessed a small upbuilding in these positions, a development that could hardly have occurred in the absence of heavy exports from Russia. The general stocks position at the end of the year appears likely to continue unfavorable for an advance of prices, particularly if one takes account of stocks that may exist in Russia and India. Yet it may be that less wheat will be in positions to press upon the international market than in the earlier two years. Larger supplies may remain on farms;

more wheat will be held by the Grain Stabilization Corporation; and it is at least possible that downward revisions of crop

TABLE 7.—APPROXIMATE STOCKS IN THE FOUR MAJOR EXPORTING COUNTRIES, AFLOAT TO EUROPE, AND IN EUROPE EX-RUSSIA, AUGUST 1, 1929 AND 1930, WITH A TENTATIVE ESTIMATE FOR 1931*

(Million bushels)

Position	1929	1930	1931
United States	247	275	300
Canada	104	112	130
Canadian in United States.....	23	16	15
United States in Canada.....	2	4	2
Argentina	135	70	95
Australia	26	35	50
Afloat to Europe.....	38	39	45
United Kingdom ports.....	6	7	7
Danube basin	63	28	28
European importing countries.....	139	112	70
Total	783	698	742

* Data for 1929 and 1930 based so far as possible upon stocks estimated either officially or unofficially; for details see WHEAT STUDIES, December, 1930, VII, Table XXVII on p. 178. Figures for 1931 based upon calculations set forth in the accompanying text. United States stocks as of July 1; others as of August 1 or nearest dates possible.

estimates in Australia and the Danube basin will necessitate lower figures for prospective year-end stocks in these countries.

This study is the work of M. K. Bennett, Helen C. Farnsworth, and Alonzo E. Taylor, with the aid of P. S. King, Robert F. Lundy, and Katharine Merriam, and the advice of Holbrook Working

APPENDIX

TABLE I.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING COUNTIES, 1920-30*

(Million bushels)

Year	United States	Canada	India	Australia	Argentina	Chile	Uruguay	Hungary	Bulgaria	Jugoslavia	Romania	Soviet Russia	Mexico
1920	833.0	263.2	377.9	145.9	156.1	23.2	7.8	37.9	29.9	43.0	61.3	.....	15.0
1921	814.9	300.9	250.4	129.1	191.0	23.6	10.0	52.7	29.2	51.8	78.6	.....	5.1
1922	867.6	399.8	367.0	109.5	195.8	25.9	5.2	54.7	32.6	44.5	92.0	.....	13.6
1923	797.4	474.2	372.4	125.0	247.8	28.1	13.3	67.7	29.1	61.1	102.1	419.1	13.7
1924	864.4	262.1	360.6	164.6	191.1	24.5	9.9	51.6	24.7	57.8	70.4	472.2	10.4
1925	676.8	395.5	331.0	114.5	191.1	26.7	10.0	71.7	41.4	78.6	104.7	782.3	9.2
1926	831.4	407.1	324.7	160.8	230.1	23.3	10.2	74.9	36.5	71.4	110.9	913.8	10.3
1927	878.4	479.7	335.0	118.2	282.3	30.6	15.4	76.9	42.1	56.6	96.7	785.0	11.9
1928	914.9	566.7	290.9	159.7	349.1	29.7	15.2	99.2	49.2	103.3	115.5	795.2	11.0
1929	809.2	304.5	320.7	126.5	162.6	37.1	13.2	75.0	33.2	95.0	99.8	702.9	11.3
1930	851.0	397.9	386.5	205.0	238.8	23.9	....	73.3	55.1	80.3	130.8	1,097.0	11.4
Average													
1909-13	690.1	197.1	351.8	90.5	147.1	20.1	6.5 ^c	71.5	37.8	62.0	158.7 ^a	758.3 ^b	11.5 ^e
1925-29	821.5	430.7	320.5	135.9	243.0	29.5	12.8	79.5	40.5	81.0	105.5	795.8	10.7

Year	Morocco	Algeria	Tunis	Egypt	British Isles	France	Germany	Italy	Belgium	Netherlands	Denmark	Norway	Sweden
1920	17.9	16.2	5.2	31.7	58.0	236.9	82.6	142.3	10.3	6.0	7.4	1.00	10.3
1921	23.2	28.5	9.0	37.0	77.1	323.5	107.8	194.1	14.5	8.6	11.1	.97	12.3
1922	12.9	18.9	3.7	36.0	66.4	243.3	71.9	161.6	10.6	6.2	9.2	.64	9.5
1923	20.0	36.2	9.9	40.7	60.6	275.6	106.4	224.8	13.4	6.2	8.9	.59	11.0
1924	28.8	17.3	5.1	34.2	53.9	281.2	89.2	170.1	13.0	4.6	5.9	.49	6.8
1925	23.9	32.7	11.8	36.2	53.7	330.3	118.2	240.8	14.5	5.7	9.7	.49	13.4
1926	16.2	23.6	13.0	37.2	52.2	231.8	95.4	220.6	12.8	5.5	8.8	.59	12.2
1927	23.5	28.3	8.3	44.3	57.2	276.1	120.5	195.8	16.3	6.2	9.4	.60	15.3
1928	28.1	30.3	12.1	37.3	50.9	281.3	141.6	228.6	17.2	7.3	12.2	.80	19.2
1929	31.8	33.2	12.3	45.2	50.9	319.9	123.1	260.1	13.2	5.5	11.8	.75	19.0
1930	18.4	30.6	9.7	41.1	43.0 ^c	231.1	139.2	210.8	13.5	5.0	10.5	.78	21.8
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
1925-29	24.7	29.6	11.5	40.0	53.0	287.9	119.8	229.3	14.8	6.0	10.4	.65	15.8

Year	Spain	Portugal	Switzerland	Austria	Czechoslovakia	Poland	Finland	Latvia	Estonia, Lithuania	Greece	Japan, Chosen	South Africa	New Zealand
1920	138.6	10.4	3.6	5.4	26.4	22.7	.27	.39	2.58	11.2	39.4	7.6	6.9
1921	145.1	9.3	3.8	6.5	38.7	40.5	.58	.78	3.34	10.3	38.0	8.7	10.6
1922	125.5	10.0	2.5	7.4	33.6	46.8	.71	.96	4.17	9.0	38.1	6.3	8.4
1923	157.1	13.2	3.8	8.9	36.2	54.9	.69	1.64	3.70	8.8	33.6	6.0	4.2
1924	121.8	10.6	3.1	8.5	32.2	37.5	.79	1.58	3.86	7.7	35.7	7.1	5.4
1925	162.6	12.5	3.5	10.7	39.3	63.9	.93	2.16	6.08	11.2	40.0	9.2	4.6
1926	146.6	8.6	4.2	9.4	34.1	52.5	.92	1.86	5.02	12.4	38.7	8.3	8.0
1927	144.8	11.4	4.1	12.0	47.2	61.1	1.06	2.64	6.35	13.0	38.3	6.0	9.5
1928	119.9	7.5	4.3	12.9	51.5	59.2	1.00	2.50	7.36	13.1	39.4	6.7	8.8
1929	154.2	10.8	5.8 ^d	11.6	52.9	65.9	1.10	2.34	10.59	8.5	38.8	11.1	7.2
1930	146.0	13.1	5.3 ^d	11.4	53.1	79.7	1.19	4.06	12.23	10.6	38.5	10.2	6.5
Average													
1909-13	130.4	11.8 ^e	3.3	12.8	37.9	63.7	.14	1.48	3.63	16.3 ^o	32.0	6.3 ^c	6.9
1925-29	145.6	10.1	4.4	11.3	45.0	60.5	1.00	2.30	7.08	11.6	39.0	8.3	7.6

* Data of U.S. Department of Agriculture and International Institute of Agriculture. For 1909-13, including U.S. Department of Agriculture estimates for area within post-war boundaries. Dots (....) indicate that data are not available. See Appendix Table II for our adjustments of certain official estimates of the four major exporting countries.

^a Four-year average.

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

^c Irish Free State estimated.

^d Includes spelt and meslin.

^e One year only.

TABLE II.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING AREAS, 1920-30*

Year	United States	Canada	Soviet Russia	Lower Danube ^a	Other Europe	Northern Africa ^b	India	Other Northern Hemisphere ^c	Northern Hemisphere ex-Russia ^d	Argentina	Australia	Other Southern Hemisphere ^e	Southern Hemisphere ^d	World ex-Russia ^d
MILLION BUSHELS														
1920.....	833	263	...	172	776	39	378	86	2,550	156	146	48	350	2,900
1921.....	815	301	...	212	1,009	61	250	80	2,730	191	129	56	375	3,105
1922.....	868	400	...	224	820	35	367	88	2,800	196	109	49	355	3,155
1923.....	797	474	419	260	996	66	372	88	3,055	248	125	55	425	3,480
1924.....	864	275	472	204	853	51	361	80	2,690	191	165	50	405	3,095
1925.....	700	430	782	296	1,100	68	331	85	3,010	191	115	54	360	3,370
1926.....	850	415	914	294	915	53	325	86	2,940	230	161	52	445	3,385
1927.....	878	480	785	272	1,001	60	335	94	3,120	290	118	65	475	3,595
1928.....	915	567	795	367	1,038	70	291	88	3,335	350	160	64	575	3,910
1929.....	825	305	703	303	1,158	77	321	95	3,085	175	126	72	375	3,460
1930.....	851	398	1,097	340	1,012	59	387	91	3,140	239	205	55	500	3,640
Average 1909-13..	690	197	758	330	1,017	58	352	77	2,725	147	90	42	280	3,005
1925-29..	834	439	796	306	1,042	66	321	90	3,100	247	136	61	445	3,545
PERCENTAGE														
1920.....	28.7	9.1	...	5.9	26.8	1.4	13.1	3.0	87.9	5.4	5.0	1.7	12.1	100.0
1921.....	26.2	9.7	...	6.8	32.5	2.0	8.1	2.6	87.9	6.1	4.2	1.8	12.1	100.0
1922.....	27.5	12.7	...	7.1	26.0	1.1	11.6	2.8	88.8	6.2	3.4	1.6	11.2	100.0
1923.....	22.9	13.6	...	7.5	28.6	1.9	10.7	2.6	87.8	7.1	3.6	1.6	12.2	100.0
1924.....	27.9	8.9	...	6.6	27.6	1.6	11.7	2.6	86.9	6.2	5.3	1.6	13.1	100.0
1925.....	20.8	12.8	...	8.8	32.6	2.0	9.8	2.5	89.3	5.7	3.4	1.6	10.7	100.0
1926.....	25.1	12.3	...	8.7	27.0	1.6	9.6	2.5	86.9	6.8	4.8	1.5	13.1	100.0
1927.....	24.4	13.4	...	7.6	27.8	1.7	9.3	2.6	86.8	8.1	3.3	1.8	13.2	100.0
1928.....	23.4	14.5	...	9.4	26.5	1.8	7.4	2.3	85.3	9.0	4.1	1.6	14.7	100.0
1929.....	23.9	8.8	...	8.8	33.5	2.2	9.3	2.7	89.2	5.1	3.6	2.1	10.8	100.0
1930.....	23.4	10.9	...	9.4	27.8	1.6	10.7	2.5	86.3	6.6	5.6	1.5	13.7	100.0
Average 1909-13..	23.0	6.6	...	11.0	33.9	1.9	11.7	2.6	90.7	4.9	3.0	1.4	9.3	100.0
1925-29..	23.5	12.4	...	8.6	29.4	1.9	9.1	2.5	87.4	7.0	3.9	1.7	12.6	100.0

* Data summarized from Appendix Table I. The italicized figures represent inclusion of our adjustments of official estimates that seem not to accord with disposition statistics (see Appendix Table XIII). The French crop of 1929 is carried at 350 million bushels rather than at the official estimate of 320 million.

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

^b Algeria, Morocco, and Tunis.

^c Egypt, Mexico, Japan, and Chosen.

^d Rounded figures.

^e Peru, Chile, Uruguay, Union of South Africa, and New Zealand.

TABLE III.—PRODUCTION OF RYE, CORN, BARLEY, AND OATS IN IMPORTANT PRODUCING AREAS, 1920-30*
(Million bushels)

Year	Rye		Corn			Barley				Oats			
	Europe Ex-Russia	Others ^a	Europe Ex-Russia	United States	Others ^b	Europe Ex-Russia	Russia	United States	Others ^c	Europe Ex-Russia	Russia	United States	Others ^c
1920	532	73	520	3,209	263	551	...	189	67	1,478	...	1,496	578
1921	765	85	393	3,069	224	566	...	155	66	1,509	307	1,078	457
1922	720	139	423	2,906	247	599	176	182	80	1,544	409	1,216	547
1923	831	90	468	3,054	317	649	196	198	89	1,720	405	1,306	675
1924	654	81	590	2,309	273	565	180	182	96	1,569	603	1,503	484
1925	946	60	626	2,917	361	672	269	214	104	1,708	838	1,488	507
1926	752	58	654	2,692	386	674	246	185	118	1,848	1,071	1,247	473
1927	813	80	485	2,763	380	659	207	266	111	1,747	917	1,183	519
1928	900	67	384	2,818	298	744	252	357	153	1,884	1,135	1,439	546
1929	945	59	706	2,614	329	826	338	303	118	2,086	1,144	1,228	369
1930 ^d	915	77	579	2,081	310	755	...	326	149	1,716	...	1,402	499
Average													
1919-13 ...	976	39	581	2,712	225	701	418	185	50	1,931	925	1,143	428
1925-29 ...	871	65	571	2,761	351	715	262	265	121	1,855	1,021	1,317	483

* Official data as reported by U.S. Department of Agriculture.

^a Canada, United States, Argentina.

^b Argentina, Union of South Africa.

^c Argentina, Canada.

^d Preliminary, partially estimated.

TABLE IV.—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			
	1927-28	1928-29	1929-30	1930-31	1927-28	1928-29	1929-30	1930-31	1927-28	1928-29	1929-30	1930-31
Aug.	81.6	84.2	101.7	85.5	2.4	3.5	2.4	11.1	.09	1.07	.74	4.98
Sept.	79.7	73.3	47.0	62.6	8.6	39.1	27.7	49.0	.32	2.61	4.83	6.12
Oct.	73.3	84.4	36.3	28.9	51.4	81.4	28.9	29.7	6.17	12.69	7.32	6.94
Nov.	44.8	43.6	20.6	24.6	71.0	72.9	17.0	14.6	10.78	14.62	6.19	10.18
Aug.-Nov.	279.4	285.5	205.6	201.6	133.4	196.9	76.0	104.4	17.36	31.02	19.08	28.22
Dec.	26.5	33.0	22.9	21.5	41.0	51.6	6.2	12.4	11.81	13.53	4.73	7.76
Jan.	23.5	22.5	17.5	29.5	21.1	11.0	2.8	4.9	16.49	13.90	4.25	7.83
Feb.	22.5	28.7	19.9	30.7	9.5	2.9	1.8	4.5	12.54	9.25	6.23	8.36
Mar.	26.3	27.2	16.7	30.8	3.3	5.2	1.6	5.1	10.50	15.46	6.89	5.41
Dec.-Mar.	98.8	111.4	77.0	112.5	74.9	70.7	12.4	26.9	51.34	52.14	22.10	29.36
Apr.	18.0	17.5	13.4	....	.9	9.7	1.6	....	10.88	7.31	4.12	....
May	25.9	18.6	16.5	....	17.6	13.8	7.4	....	7.43	3.91	3.08	....
June	15.6	25.7	18.7	....	20.1	14.7	23.7	....	3.66	3.04	3.60	....
July	72.6	94.2	99.0	....	14.4	14.6	14.2	....	2.44	3.30	3.31	....
Apr.-July	132.1	156.0	147.6	....	53.0	52.8	46.9	....	24.41	17.56	14.11	....
Aug.-July	510.3	552.9	430.2	....	261.3	320.4	135.3	....	93.11	100.72	55.29	....

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

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

Month	United States primary markets				Fort William and Port Arthur				Vancouver ^a			
	1927-28	1928-29	1929-30	1930-31	1927-28	1928-29	1929-30	1930-31	1927-28	1928-29	1929-30	1930-31
Dec.	8.90	11.19	4.79	3.17	14.95	17.83	2.43	4.03	2.57	2.44	.87	2.53
	6.41	8.18	7.01	4.72	11.05	16.33	1.39	3.27	2.26	3.40	1.30	2.21
	5.81	8.92	5.83	5.35	9.60	15.36	1.02	2.25	2.46	3.78	1.23	1.57
	5.11	7.84	3.92	5.54	8.62	8.98	.99	1.98	3.08	2.99	.90	1.38
Jan.	4.74	5.41	4.03	5.53	5.91	7.57	.81	1.35	2.75	2.57	.87	1.10
	4.56	4.49	4.59	6.22	5.28	3.96	.66	1.46	3.16	3.32	.90	1.72
	4.96	4.51	4.21	6.51	6.20	2.91	.54	.65	3.18	2.48	.72	1.93
	6.18	4.20	3.22	6.81	4.95	2.10	.63	.96	3.45	2.84	.96	1.78
Feb.	5.96	5.71	3.39	7.19	3.55	1.77	.53	1.49	4.98	3.41	1.34	1.89
	5.67	6.57	5.24	7.75	2.69	1.34	.56	1.42	4.49	2.88	1.82	1.96
	5.67	6.50	4.73	7.70	2.97	.90	.40	.84	3.68	1.54	1.55	2.13
	5.02	6.03	4.19	7.78	2.52	.56	.49	1.01	3.49	1.55	1.70	2.14
Mar.	5.08	6.28	6.24	7.44	1.64	.60	.35	1.26	1.88	3.08	1.16	2.18
	5.87	8.41	5.28	9.38	1.31	.69	.27	1.12	1.88	3.92	1.64	1.69
	6.55	6.68	4.07	7.90	.95	.63	.37	1.13	2.38	3.46	2.03	1.17
	6.22	6.33	3.19	6.82	.86	1.11	.39	1.11	2.04	3.41	1.58	.85
	5.07	6.06	2.59	5.41	.50	1.75	.45	1.08	2.28	3.32	1.27	1.37

* United States data are unofficial figures compiled from *Daily Trade Bulletin*; Fort William and Port Arthur data are official figures for net receipts furnished by Canadian Board of Grain Commissioners; Vancouver data are official figures compiled from *Canadian Grain Statistics*. United States and Fort William and Port Arthur figures begin with weeks ending Dec. 3, 1927, Dec. 1, 1928, Dec. 7, 1929, Dec. 6, 1930; Vancouver figures are for weeks ending one day earlier.

^a Receipts at Prince Rupert included.

TABLE VI.—WEEKLY VISIBLE SUPPLIES OF WHEAT IN NORTH AMERICA, UNITED KINGDOM PORTS, AND AFLOAT TO EUROPE, DECEMBER—MARCH 1930-31*

(Million bushels)											
Date	United States	Canada	U.K. ports	Afloat to Europe	Total	Date	United States	Canada	U.K. ports	Afloat to Europe	Total
Dec. 6	202.0	211.4	15.2	43.3	472.2	Feb. 7	204.8	198.9	15.9	42.2	461.8
Dec. 13	200.8	215.2	16.8	37.5	470.2	Feb. 14	206.0	194.0	14.8	51.4	466.2
Dec. 20	198.6	216.5	18.8	33.9	467.9	Feb. 21	207.3	191.6	13.6	57.0	469.5
Dec. 27	198.7	217.8	17.6	31.5	465.5	Feb. 28	208.1	190.1	13.0	57.9	469.2
Jan. 3	200.0	216.7	20.0	27.3	465.7	Mar. 7	209.4	189.9	12.8	55.4	467.5
Jan. 10	202.3	213.2	19.6	25.2	460.2	Mar. 14	211.4	187.3	12.6	56.0	467.2
Jan. 17	201.5	210.0	18.8	27.8	458.0	Mar. 21	213.2	185.1	13.8	53.1	465.1
Jan. 24	202.2	205.7	17.2	30.8	456.0	Mar. 28	213.6	183.2	12.4	53.4	462.5
Jan. 31	202.5	202.4	17.4	37.3	458.1						

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

TABLE VII.—WORLD VISIBLE WHEAT SUPPLIES, APRIL 1, 1920-30, AND MONTHLY, 1930-31*
(Million bushels)

Date	United States	Canada	Argentina	Australia	United Kingdom	Afloat to Europe	North America	Argentina, Australia	U.K. and afloat	Grand total	Total ex-Australia
1920 Apr. 1...	94.9	28.2	6.6	60.0	10.9	59.7	123.1	66.6	70.6	260.3	200.3
1921 Apr. 1...	51.7	40.6	3.7	73.0	18.4	58.2	92.3	76.7	76.6	245.6	172.6
1922 Apr. 1...	69.4	63.3	4.8	50.0	6.5	65.9	132.7	54.8	72.4	259.9	209.9
1923 Apr. 1...	102.1	81.8	9.2	56.5	7.8	52.8	183.9	65.7	60.6	310.2	253.7
1924 Apr. 1...	111.3	123.3	10.6	40.0	8.5	65.8	234.6	50.6	74.3	359.5	319.5
1925 Apr. 1...	108.8	80.0	11.4	63.0	11.7	84.1	188.8	74.4	95.8	359.0	296.0
1926 Apr. 1...	82.0	99.0	6.6	30.5	7.7	46.0	181.0	37.1	53.7	271.8	241.3
1927 Apr. 1...	88.7	107.3	14.7	53.0	5.0	75.7	196.0	67.7	80.6	344.3	291.3
1928 Apr. 1...	110.1	146.6	12.8	36.0	7.7	68.4	256.7	48.8	76.1	381.6	345.6
1929 Apr. 1...	173.1	177.1	14.7	53.0	8.0	71.0	350.2	67.7	79.0	496.9	443.9
1930 Apr. 1...	212.0	192.4	10.3	56.0	13.0	34.2	404.5	66.3	47.2	518.0	462.0
1930 Aug. 1...	221.9	103.5	7.0	33.5	6.5	39.2	325.5	40.5	45.7	411.6	378.1
Sept. 1...	294.2	87.4	6.6	27.0	6.0	47.7	381.6	33.6	53.8	468.9	441.9
Oct. 1...	316.9	154.8	5.9	13.0	9.0	44.2	471.7	18.9	53.2	543.7	530.7
Nov. 1...	289.2	174.1	4.8	7.8	10.0	42.2	463.3	12.5	52.2	528.1	520.3
Dec. 1...	277.7	194.7	4.0	5.0	13.9	45.6	472.4	9.0	59.6	541.0	536.0
1931 Jan. 1...	260.1	209.5	6.6	60.0	19.7	27.3	469.6	66.6	47.0	583.2	523.2
Feb. 1...	253.6	199.2	6.6	87.5	17.4	37.3	452.8	94.1	54.6	601.5	514.0
Mar. 1...	267.2	187.0	9.2	96.0	13.0	57.9	454.3	105.2	70.8	630.3	534.3
Apr. 1...	367.7	178.4	9.2	84.2	12.6	48.0	546.1	93.4	60.6	600.1	515.8
Average, Apr. 1 1910-14	84.0	37.6	4.3	14.8	12.4	53.2	121.6	19.1	65.6	206.3	191.5
1926-30	133.2	144.5	11.8	45.7	8.3	59.1	277.7	57.5	67.3	402.5	356.8

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

TABLE VIII.—INTERNATIONAL TRADE IN WHEAT AND FLOUR, MONTHLY, JULY-MARCH, 1930-31*
(Million bushels)

A.—NET EXPORTS

Month	United States	Canada	India	Australia	Argentina	Roumania	Hungary	Jugo-Slavia	Bulgaria	Poland	Algeria, Tunis	Egypt	Greece
July	15.04	22.81	2.48	4.33	2.62	.33	.68	.40	.03	(.09) ^a	1.44	...	(1.78) ^a
Aug.	23.06	20.45	1.71	5.91	3.76	3.10	2.42	1.89	.71	.04	2.22	(.68) ^a	(1.86) ^a
Sept.	16.57	31.10	.71	4.41	2.90	3.12	2.17	.78	.46	.54	3.18	(1.08) ^a	(2.04) ^a
Oct.	9.80	33.42	.14	7.00	4.97	2.28	2.28	.65	.12	.58	1.78	(.56) ^a	(2.53) ^a
Nov.	7.09	34.76	(.32) ^a	6.58	2.85	1.68	2.98	1.09	.13	.71	1.13	(.97) ^a	(1.31) ^a
Dec.	5.58	24.93	(.39) ^a	7.59	4.97	.87	2.25	.30	.07	.49	3.59	(1.03) ^a	(1.66) ^a
Jan.	4.25	11.35	(.66) ^a	17.91	9.41	...	.88	.07	.02	.24	.01 ^b	...	...
Feb.	2.71	12.14	(2.25) ^a	17.67	16.52	...	.74	.01	.02	.31	(.06) ^{ab}	...	(1.69) ^a
Mar.	2.52	15.49	....	....	....	....	....	....	....	....	....	....	....

B.—NET IMPORTS

Month	Irish Free St.	United Kingdom	France ^c	Germany	Belgium	Italy	Netherlands	Scandinavia	Switzerland	Austria	Czecho-Slovakia	Baltic States ^d	Japan
July	1.53	19.41	(3.93) ^e	3.29	3.84	5.46	2.82	2.02	1.60	2.08	.88	.95	.77
Aug. ....	.86	17.15	1.78	3.23	4.54	4.50	2.96	2.01	1.56	.41	1.59	.87	.42
Sept.	1.64	22.69	5.15	4.42	4.27	6.06	4.55	2.45	1.90	1.08	1.90	.87	(.08) ^e
Oct.	1.84	20.42	5.79	3.59	3.70	8.45	3.41	2.75	2.20	1.07	1.84	1.42	.65
Nov.	1.63	20.64	3.60	1.45	3.66	8.52	3.24	2.35	1.87	1.09	3.72	1.14	.81
Dec.	1.88	27.56	3.31	1.01	4.03	5.85	2.18	2.20	1.34	1.56	4.00	.24	1.45
Jan.	1.45	14.57	4.14	1.94	1.82	5.62	4.34	1.87	1.74	1.15	.13	.32	2.21
Feb. ....	....	10.57	3.68 ^f	1.65	2.96	5.22	.19	1.31	1.19	1.14	.08	.38	1.77
Mar. ....	....	18.80	....	....	....	....	....	....	....	....	....	....	....

* Data from official sources and International Institute of Agriculture.

^a Net import.

^b Tunis only.

^c Net imports in "commerce général."

^d Finland, Estonia, Latvia.

^e Net export.

^f "Commerce spécial."

TABLE IX.—WEEKLY WHEAT AND FLOUR SHIPMENTS BY AREAS OF ORIGIN AND DESTINATION, DECEMBER—MARCH, 1930-31*

(Million bushels)

Week ending	North America	Argentina, Uruguay	Australia	Russia, Danube ^a	India	Other Countries ^b	Total	To Europe	To Ex-Europe
Dec. 6.....	8.79	.92	1.90	4.65	...	.59	16.85	13.39	3.46
13.....	5.26	.54	1.85	3.32	.04	.62	11.63	7.73	3.90
20.....	5.07	1.24	2.18	3.41	...	.38	12.28	8.65	3.63
27.....	4.96	.99	2.20	2.62	...	.18	10.94	6.88	4.06
Jan. 3.....	4.08	1.26	2.19	1.89	...	.16	9.58	5.90	3.68
10.....	5.47	.97	3.71	1.18	.02	.12	11.46	7.18	4.28
17.....	5.54	2.40	4.86	.91	...	.12	13.83	9.61	4.22
24.....	6.28	2.37	3.73	.88	.03	.10	13.38	9.20	4.18
31.....	6.99	3.53	5.42	1.02	.03	.11	17.10	11.79	5.31
Feb. 7.....	4.50	3.60	4.52	2.08	...	.08	14.78	10.53	4.25
14.....	6.50	4.39	4.00	2.56	...	.05	17.50	13.51	3.99
21.....	5.04	4.29	4.61	2.46	.02	.05	16.47	12.29	4.18
28.....	4.72	4.23	4.78	1.01	...	.10	14.85	10.54	4.31
Mar. 7.....	5.08	4.30	3.02	1.35	...	.30	14.06	10.00	4.06
14.....	4.60	3.17	5.30	2.19	...	.09	15.35	10.96	4.39
21.....	4.73	3.35	5.26	2.74	...	.10	16.18	11.27	4.91
28.....	4.40	3.80	5.10	1.50	...	.10	14.90	10.04	4.86

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

^a Russia-Danube, and Black Sea.

^b Northern Africa, Chile, Germany, Persia, etc.

TABLE X.—WEEKLY CASH PRICES OF REPRESENTATIVE WHEATS IN LEADING EXPORTING AND IMPORTING MARKETS, DECEMBER—MARCH, 1930-31*

(U.S. dollars per bushel)

Week ending	United Kingdom	United States				Canada		Argentina	Liverpool			
	British parcels	All classes and grades ^a	No. 2 Red Winter (St. Louis)	No. 2 Hard Winter (Kansas City)	No. 1 Northern (Minneapolis)	Weighted average (Winnipeg)	No. 3 Manitoba (Winnipeg)	78 Kilos (Buenos Aires)	No. 1 (Manitoba)	No. 3 (Manitoba)	Argentine Rosafe	Australian
Dec. 6.....	.77	.73	.84	.71	.79	.53	.52	.56	.79	.76	.69	.84
13.....	.75	.74	.85	.72	.79	.52	.50	.54	.80	.77	.72	.82
20.....	.73	.73	.81	.71	.77	.49	.46	.51	.76	.74	.69	.82
27.....	.72	.72	.82	.70	.75	.46	.45	.46	.71	n.q.	.64	.79
Jan. 3.....	.69	.71	.81	.69	.76	.48	.46	.44	.72	n.q.	.58	.75
10.....	.71	.71	.78	.69	.76	.49	.47	.48	.74	.71	.63	.74
17.....	.68	.73	.79	.71	.78	.50	.47	.46	.74	n.q.	.63	.70
24.....	.67	.72	.80	.69	.77	.50	.47	.45	.74	.70	.60	.70
31.....	.65	.71	.76	.69	.75	.51	.48	.45	.74	.70	.60	.67
Feb. 7.....	.66	.71	.78	.69	.76	.54	.51	.45	.76	.68	.59	.64
14.....	.68	.71	.79	.69	.76	.57	.55	.47	.82	n.q.	.64	.67
21.....	.71	.71	.79	.69	.74	.56	.54	.49	.80	n.q.	.64	.68
28.....	.73	.71	.80	.70	.74	.54	.52	.49	.81	.76 ^b	.64	.67
Mar. 7.....	.70	.71	.78	.70	.75	.52	.50	.47	.76	.71 ^b	.62	.64
14.....	.67	.71	.79	.70	.75	.53	.51	.48	.80	.72 ^b	.63	.65
21.....	.66	.71	.78	.70	.76	.52	.51	.45	.77	.70 ^c	.61	.64
28.....	.67	.72	.79	.71	.76	.51	.49	.44	.75	.68 ^c	.59	.62

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

^a Six markets.

^b No. 3 Northern Manitoba (Vancouver), parcels in London.

^c No. 3 Northern Manitoba (Vancouver), parcels to Liverpool.

TABLE XI.—MONTHLY PRICES OF DOMESTIC WHEAT IN EUROPE, FROM AUGUST 1928*
(U.S. dollars per bushel)

Month	Great Britain			France (Chartres)			Italy (Milan)			Germany (Berlin)		
	1928-29	1929-30	1930-31	1928-29	1929-30	1930-31	1928-29	1929-30	1930-31	1928-29	1929-30	1930-31
Aug.	1.33	1.52	1.09	1.60	1.51	1.66	1.72	1.74	1.80	1.49	1.59	1.63
Sept.	1.19	1.29	.95	1.58	1.48	1.69	1.81	1.75	1.77	1.36	1.47	1.55
Oct.	1.24	1.24	.91	1.61	1.45	1.64	1.88	1.84	1.70	1.38	1.50	1.47
Nov.	1.28	1.22	.87	1.60	1.43	1.69	1.87	1.85	1.63	1.37	1.51	1.60
Dec.	1.25	1.24	.80	1.56	1.41	1.67 ^a	1.87	1.90	1.46	1.33	1.57	1.61
Jan.	1.25	1.24	.73	1.59	1.40 ^a	1.72	1.92	1.94	1.49	1.35	1.60	1.68
Feb.	1.27	1.16	.67	1.64	1.31	1.82	1.96	1.89	1.54 ^b	1.40	1.52	1.77
Mar.	1.27	1.08	.67	1.68	1.37	1.84 ^b	1.95	1.86	....	1.44	1.55	....
Apr.	1.28	1.13	....	1.60	1.36 ^a	....	1.93	1.94	....	1.45	1.75	....
May	1.29	1.14	....	1.65	1.31	....	1.89	1.96	....	1.41	1.87	....
June	1.25	1.11	....	1.62	1.36	....	1.91 ^a	2.02	....	1.39	1.95	....
July	1.35	1.08	....	1.62	1.66 ^a	....	1.77	1.77	....	1.62	1.87	....

* Data for Great Britain are averages of weekly average *Gazette* prices as given in the *Economist*; for France, averages of Saturday prices furnished directly by Federal Reserve Board through November 1929; after which they are taken from *Bulletin des Halles*; for Italy, averages of Friday prices (Saturday prices after August 23, 1930) 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 sources above into U.S. money by monthly average exchange rates.

^a Three-week average.

^b Preliminary.

TABLE XII.—WHEAT STOCKS IN THE UNITED STATES AND CANADA, MARCH 1919-31*
(Thousand bushels)

Year	United States (March 1)				Canada (March 31)				
	Total	On farms	In country mills and elevators	Commercial visible (Bradstreet's)	Total	On farms	In elevators	In transit	In flour mills
1919.....	362,947	128,703	107,037	127,207	118,543	32,315	69,983	10,855	5,390
1920.....	351,769	169,904	123,233	58,632	77,306	34,837	30,622	6,272	5,575
1921.....	336,057	217,037	87,075	31,945	95,477	48,919	35,802	7,120	3,636
1922.....	256,038	134,253	75,071	46,714	114,986	41,649	58,338	10,999	4,000
1923.....	313,557	156,087	102,908	54,562	139,788	54,771	69,620	8,397	7,000
1924.....	308,919	137,721	98,284	72,914	202,493	70,755	111,589	14,149	6,000
1925.....	256,205	112,095	67,673	76,437	121,084	39,225	68,555	8,304	5,000
1926.....	224,575	100,137	76,333	48,105	161,376	50,878	95,691	8,307	6,500
1927.....	277,473	130,274	85,928	61,271	175,978	51,366	103,372	14,740	6,500
1928.....	286,559	130,944	75,428	80,187	224,699	69,807	130,055	19,037	5,800
1929.....	366,137	151,396	84,707	130,034	244,423	60,517	164,291	12,615	7,000
1930.....	395,277	129,754	100,340	165,174	228,837	45,524	169,955	4,358	9,000
1931.....	451,224	160,282	82,840	208,102	275,191	88,633	169,277	7,281	10,000

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

TABLE XIII.—APPROXIMATE DISPOSITION OF WHEAT SUPPLIES IN THE PRINCIPAL EXPORTING COUNTRIES, BY CROP YEARS FROM 1921-22*

(Million bushels)

A.—UNITED STATES (July-June)

Item	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31
Initial stocks	124	117	152	146	117	99	123	128	247	275
New crop	815	868	797	864	677	831	878	915	809	851
Total supplies	939	985	949	1,010	794	930	1,001	1,043	1,056	1,126
Net exports	269	208	135	257	96	209	194	146	143	105
Seed requirements	93	88	76	81	79	84	90	84	83	78
Consumed for food.....	463	468	477	479	493	494	505	506	514	522
Stocks at end.....	117	152	146	117	99	123	128	247	275	300
Calculable disappearance....	942	916	834	934	767	910	917	983	1,015	1,005
Discrepancy	-3	+69	+115	+76	+27	+20	+84	+60	+41	+121

B.—CANADA (August-July)

Item	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31
Initial stocks	25	40	32	45	27	37	51	78	104	112
New crop	301	400	474	262	396	407	480	567	305	398
Total supplies	326	440	506	307	423	444	531	645	409	510
Net exports	184	279	346	192	324	293	333	406	185	280
Seed requirements	39	40	39	38	40	39	42	44	45	43
Milled for food.....	37	41	42	42	42	43	42	44	44	44
Unmerchantable	12	10	19	12	11	12	28	30	7	4
Lost in cleaning.....	9	12	12	10	6	19	7	13	9	8
Stocks at end.....	40	32	45	27	37	51	78	104	112	130
Calculable disappearance....	321	414	503	321	460	457	530	641	402	509
Discrepancy	+5	+26	+3	-14	-37	-13	+1	+4	+7	+1

C.—ARGENTINA (August-July)

Item	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31
Initial stocks	40	53	64	66	57	51	69	90	135	70
New crop	191	196	248	191	191	230	282	349	163	239
Total supplies	231	249	312	257	248	281	351	439	298	309
Net exports	118	139	172	123	94	143	178	224	150	120
Seed requirements	20	19	21	23	25	24	25	23	24	23
Consumed for food.....	47	48	49	53	54	57	59	61	63	65
Stocks at end.....	53	64	66	57	51	69	90	135	70	95
Calculable disappearance....	238	270	308	256	224	293	352	443	307	303
Discrepancy	-7	-21	+4	+1	+24	-12	-1	-4	-9	+6

D.—AUSTRALIA (August-July)

Item	1921-22	1922-23	1923-24	1924-25	1925-26	1926-27	1927-28	1928-29	1929-30	1930-31
Initial stocks	47	18	28	26	23	17	23	29	26	35
New crop	129	110	125	165	115	161	118	160	126	205
Total supplies	176	128	153	191	138	178	141	189	152	240
Net exports	115	50	86	124	77	103	71	109	63	135
Seed requirements	10	10	10	11	11	12	14	14	17	14
Consumed for food.....	27	28	28	29	29	30	30	31	31	32
Stocks at end.....	18	28	26	23	17	23	29	26	35	50
Calculable disappearance....	170	116	150	187	134	168	144	180	146	231
Discrepancy	+6	+12	+3	+4	+4	+10	-3	+9	+6	+9

* Based so far as possible upon official estimates. For explanation of the several items, see footnotes to Appendix Table XXXV, WHEAT STUDIES, Vol. VI, No. 2, pp. 184-85.

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