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# W H E A T   S T U D I E S

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## WORLD WHEAT SURVEY AND OUTLOOK SEPTEMBER 1940

*Helen C. Farnsworth and V. P. Timoshenko*

War developments and governmental wheat measures overshadowed all other factors in their influence upon wheat futures markets during May–September. Germany's successful invasion of Belgium and Holland in May was associated with spectacular price declines which were met by government-sponsored minimum price regulations. These were subsequently removed at Chicago and Buenos Aires, but not at Winnipeg. Chicago prices, however, later received governmental support through the operation of the 1940–41 federal loan program.

Striking improvement in the outlook for the new North American wheat crop had little market influence after early May. Current estimates suggest that the wheat surplus for export and carryover will be unprecedentedly large in North America, and perhaps in the four major exporting countries combined. In contrast, European wheat supplies are somewhat short and, in effect, shorter than their gross size would imply. The major deficit area is, as usual, in northwestern Europe. In Belgium, Holland, and perhaps Denmark and Norway, serious food shortage may develop if imports continue to be restricted and Germany fails to provide relief through partial distribution of her own large stocks.

World wheat exports in 1939–40 totaled well over 600 million bushels, despite contraction of the Continental European market following extension of German control over the Low Countries and France. The outlook for trade in the coming year is obscured by the uncertainties pertaining to war and to governmental and economic relations in the event of speedy termination of the war. Various considerations, however, suggest that world exports will probably be much smaller than in 1939–40—perhaps as low as 450 million bushels, though under some conditions perhaps as high as 550 million bushels. In any case, year-end world wheat stocks will probably stand close to the record high level of 1940, and will again be concentrated in export regions.

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# WORLD WHEAT SURVEY AND OUTLOOK

## SEPTEMBER 1940

*Helen C. Farnsworth and V. P. Timoshenko*

Extension and intensification of the European war after the beginning of May and the swift success of the German campaign in the Low Countries and France dominated all phases of the wheat situation from May to mid-September. With the extension of German control to Holland and Belgium in May, these two large importers were virtually shut off from overseas sources of wheat. In June, with Italy's entrance into the war and the sudden collapse of France, the European import area open to overseas wheat was still further restricted. Nevertheless, May-July exports were relatively heavy, and heavier than could reasonably have been anticipated in mid-May.

The large wheat exports in the last quarter of the crop year brought world net exports for 1939-40 (counting for Canada, only her overseas exports) to something over 600 million bushels. Thus, the volume of trade was above any recent five-year average and only moderately smaller than in 1938-39. European net imports were probably reduced only slightly, if at all, from 1938-39; and they were materially above estimated current import requirements for consumption. European belligerents and neutrals apparently tried to increase "war reserves" during 1939-40; but existing limitations on shipping facilities, risks involved in shipping without convoy, and the British blockade all tended to restrict stocks-building, particularly in countries other than Britain, Italy, and Germany. These three nations may well have held record old-crop carryovers of wheat on August 1, 1940; but most of the large accumulations were effected in the preceding year.

On wheat-futures markets at Chicago, Winnipeg, and Buenos Aires, the war developments of early May resulted in drastic price

declines of 16 to 30 cents per bushel within a week to ten days. The declines prompted establishment of fixed minimum prices; these were removed at Chicago and Buenos Aires after 4 and 11 weeks respectively, but remained in force at Winnipeg. In each of the three markets, price changes since late May have been based mainly upon domestic factors which have resulted in price movements largely in-

dependent of those in the other two markets. With Winnipeg prices ruling since June 25 at the fixed minimum levels, and Buenos Aires prices fluctuating mainly in accordance with changes in traders' ideas of the size of the remaining Argentine wheat supplies, Chicago prices alone have significantly responded to

changing "international" wheat influences. At Chicago the course of prices since late May has been determined largely by the growing prospects for a record North American surplus in 1940-41, by traders' interpretations of daily war news from Europe, and by current and anticipated effects of the American wheat-loan program.

Crop developments during May-September had less effect than usual upon the course of wheat-futures prices in leading markets. In North America the crop outlook improved strikingly, while in Europe ex-Russia there appears to have been little change.

Despite the present paucity of official and private crop estimates usually numerous at this time of year, it seems reasonably certain that the 1940 wheat crop of Continental Europe ex-Russia was definitely small. The greatest reductions as compared with 1938 and 1939 were in the Danube basin and in the western portion of the German-controlled area of Europe; but only in the latter area were 1940 harvests far below normal. Sizable old-

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crop stocks of wheat in this area may make up for part of the new-crop deficiency; and serious widespread food shortage may be prevented or postponed by the strict rationing of wheat and the increased use of rye, feed grains, and potatoes for human consumption. But in a few countries always heavily dependent upon foreign grain imports—most certainly Belgium and Holland and less certainly Denmark—existing supplies of bread grain and of other foods as well are so meager that serious food shortage seems to threaten.

Existing uncertainties regarding European crops and supplies, and the impossibility of predicting the course of the war, make quantitative trade forecasts almost valueless this year. But if the war lasts through a major portion of the crop year, with continuance of the present naval blockade of the major wheat-deficit countries, one can now expect only small exports by sea to countries other than Britain and perhaps Greece and Spain (assuming the continued nonbelligerency of these two countries). Under such conditions, total European imports and total world exports would be materially lower than in 1939–40, European imports perhaps falling within the range of 250 to 300 million bushels, and world net exports something like 450 to 500 million bushels. In case of an early German victory, which would result not only in defeat of Britain but in cessation of war in the western world, total exports might be larger, but perhaps by no more than 50 to 75 million bushels.

On the assumption of continued war and blockade, wheat utilization in Europe ex-Danube can be expected to be considerably smaller than in any recent year, with consumption probably below minimum needs in certain areas. Curtailment of wheat consumption will presumably arise not only out of the reduction of wheat supplies in Europe ex-Russia, but also out of possible holding of wheat on peasant farms, and out of governmental efforts to maintain reserves for military reasons.

In contrast with the deficiency of wheat in Europe, aggregate exportable supplies of wheat in the major overseas exporting countries are expected to be larger than ever be-

fore. In North America, on the basis of standing crop estimates, the surplus of wheat for export and carryover approximates 1,075 million bushels—almost 200 million bushels more than the previous record surpluses of 1928–29 and 1932–33. Present prospects for small crops in Argentina and Australia—still subject to considerable change—imply that the aggregate surplus in the Southern Hemisphere will be below average.

#### TRADE, UTILIZATION, AND CARRYOVERS, 1939–40

At this time of year, the volume of international trade during the preceding months of August–July is usually known, and on the basis of some approximations of wheat utilization during the same period it is usually possible to make reasonable estimates of wheat carryovers in the principal positions. Since the beginning of the European war, however, statistics of international trade have become scanty, and practically none for European importing countries appeared during the last third of the crop year. The trade statistics of exporting countries remain less incomplete, but have not been released in recent months for such important exporters as Australia and the Danube countries, and for several smaller exporters as well. Credible approximation of wheat utilization in the principal European countries has also become much more difficult, since wartime regulations have introduced changes which cannot be appraised even roughly. Hence, quantitative appraisal of wheat carryovers in the individual importing countries of Europe and in the secondary wheat exporters has become sheer guesswork, with results undeserving of mention.

So far as trade statistics continue to be published, the carryovers in the different exporting countries can still be calculated. The export statistics of the chief exporters, when distributed by countries of destination, also constitute a source of information (not very reliable) from which imports of wheat by European countries may be roughly approximated.

*World wheat exports.*—The disruption of international relations that followed the German invasion of the Low Countries in May did not reduce wheat exports during the fol-

lowing months to the extent which could then be expected. A substantial portion of the heavy wheat shipments directed to western Continental Europe during April and May was apparently diverted to the British Isles, which together with Spain were presumably the only European countries able to import much overseas wheat during June–July. Altogether, wheat was exported in large quantities during May–July 1940, though not so heavily as during the same period of 1939. European governments were then feverishly building up wheat reserves in anticipation of war, and May–July shipments amounted to an unusually large fraction of the total for 1938–39. Though somewhat smaller than in that year, crop-year wheat exports in 1939–40 were relatively large.<sup>1</sup> Exports were even in excess of the current requirements in European importing countries, since each strove to maintain or increase its reserves.

The following tabulation summarizes total crop-year net exports, in million bushels, including flour as wheat, by principal sources of origin. For three of the four chief exporters, net exports are based on official trade statistics, while exports from Australia and the Danube countries are roughly approximated. The lack of information on exports from secondary sources makes the picture incomplete. But there is basis for the conclusion that world net exports of wheat in August–July 1939–40 somewhat exceeded 600 million bushels even if one takes North American clearances of Canadian wheat as better representing the export position. Such clearances for 1939–40 were substantially smaller than exports according to customs statistics, because much Canadian wheat exported to the United States had not yet been shipped overseas. Stocks of Canadian wheat in the United States on August 1, 1940 were nearly 20 million bushels larger than on the same date in 1939.

Canadian and Argentine exports were heavy in 1939–40. Enlarged exports from these two countries more than compensated for reduced exports from the United States

and Australia, and total net exports of wheat from the four chief exporters in 1939–40 were larger than in 1938–39, even when the adjustment of Canadian exports is taken into consideration.

Country	5-year average <sup>a</sup>	1936-37	1937-38	1938-39	1939-40
United States . . . .	44.1 (17.1) <sup>b</sup>	117.5	102.9	42.4	
Canada (exports)	173.1	194.8	86.8	165.1	207.6
Canada (clearances) <sup>c</sup> . . . . .	175.1	209.7	95.6	160.0	192.6
Australia . . . . .	106.9	101.7	125.9	95.6	75.0-80.0
Argentina . . . . .	121.5	162.4	71.6	122.2	179.8
Danube . . . . .	51.8	88.8	53.8	84.6	85.0-90.0
USSR . . . . .	22.4	4.6	43.0	34.0	... <sup>b</sup>
French North Africa . . . . .	15.2	6.2	14.5	10.2	... <sup>d</sup>
Others					
European . . . . .	14.4	14.5	1.3	14.7	... <sup>d</sup>
Non-European . . . . .	22.4	34.2	37.0	19.9	... <sup>d</sup>
Total . . . . .	574.8	607.2	551.4	649.2	...
Total with clearances . . . . .	576.8	622.1	560.2	644.1	...

<sup>a</sup> For 1934–35 to 1938–39, not deducting net imports.

<sup>b</sup> Net import.

<sup>c</sup> Grain clearances plus flour exports; not deducting imports which exceeded one million bushels only in 1937–38 (6.0) and in 1938–39 (1.9).

<sup>d</sup> No information.

Argentine crop-year exports proved larger than could reasonably be anticipated last May. On the basis of trade estimates of the Argentine wheat carryover on January 1, 1940 and the official estimate of the 1939–40 crop, one could then expect that Argentine shipments would decline from the high level to which they had risen in April. Instead, Argentine shipments rose further in May and were maintained on a high level through June (see Chart 1, p. 4), bringing Argentine exports for August–July to 180 million bushels. A total of 140 million had seemed more probable in May in the light of then current information on Argentine stocks and the new crop. It has thus become clear that in the aggregate, the crops of 1938 and 1939 were seriously understated. Official data on commercial stocks in Argentina, first made public after a long interval as of April 1, 1940, yielded indications that the principal understatement of crop,

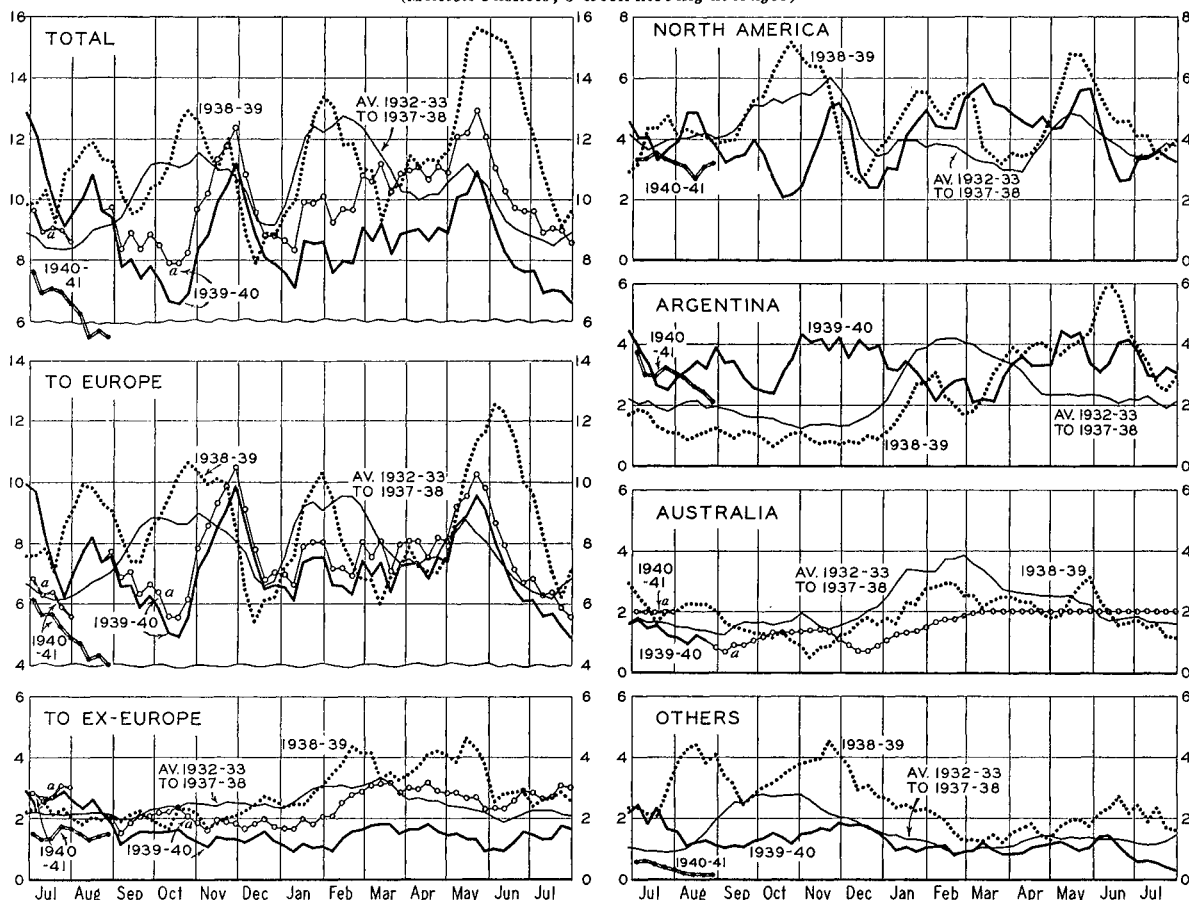
<sup>1</sup> Such possible movements within Europe as were due to German takings from conquered countries are here disregarded.

perhaps 40 to 50 million bushels, was in relation to the crop of 1938.<sup>1</sup>

United States net exports reached only 42

an unfavorable outlook for the 1940 crop of winter wheat, first gave rise to hesitation on the part of the Department of Agriculture

CHART 1.—INTERNATIONAL SHIPMENTS OF WHEAT, WEEKLY FROM JULY 1939, WITH COMPARISONS\*  
(Million bushels; 3-week moving averages)



\* Broomhall's data; see Table VII.

<sup>a</sup> Australian monthly official exports through February and our approximations of Australian exports since March have been distributed as three-week moving averages and included in the total, to Europe, and to ex-Europe, and shown graphically above by connected hollow circles. Even this correction leaves the levels of total shipments, shipments to Europe, and shipments from "others" too low by the 28 million bushels of Danubian shipments that Broomhall first reported in cumulative form in mid-July without distribution in the weekly figures.

million bushels in August–July, some 60 million less than in 1938–39. The war, and later

<sup>1</sup> According to information in *Boletín Informativo*, Apr. 30, 1940, p. 392, commercial stocks of old-crop wheat on April 1, 1940 amounted to about 77 million bushels. This information, together with official statistics on exports of 1938-crop wheat during January–March 1940, published in the same source, implied a wheat carryover in Argentina on January 1, 1940 of about 120 million bushels. Trade estimates, based on the official estimate of the 1938 crop at 336 million, had been much lower, ranging around 75 million bushels. This points to a much larger 1938 wheat crop in Argentina, perhaps of about 380 million bushels.

with regard to the continuation of the export subsidy. Later, from January 1940 the subsidization of wheat and flour exports was limited to exports from the Pacific Northwest, and, for several months, only to shipments to the Orient. At the same time the subsidy rates were set below those prevailing in the prewar months. The level of wheat prices on domestic markets precluded exports of non-subsidized wheat, and exports destined to Europe were therefore particularly small.

August–July exports from the Danube basin

were probably larger in 1939-40 than in 1938-39, though somewhat smaller than could be expected before the war developments in May. A large factor in the reduction of world net exports in 1939-40 was the virtually complete absence of Russian wheat from international markets. The USSR became a small net importer in 1939-40, whereas in 1938-39 her net exports were around 34 million bushels. Had Russia freely offered wheat for export to Germany last year, world exports and European imports would undoubtedly have been larger than they were.

There is practically no information about the 1939-40 exports of wheat from secondary sources. Perhaps the 1939-40 total for these sources differed little from that of 1938-39, if net exports from a few countries of Europe ex-Danube are disregarded for both years. Some of the non-European secondary exporters, such as French North Africa, may have exported more, and some less; but on the whole the change in exports from secondary sources between 1938-39 and 1939-40 must have been too small to affect appreciably the comparison of world totals.

Using the official export statistics distributed by countries of destination for three of the four chief exporters, supplemented by our own rough approximations for Australia and the Danube countries, it is possible to appraise separately the volume of exports to Europe and to ex-Europe. The following tabulation, in million bushels, shows July-June gross exports from the principal exporting countries distributed between these two destinations. Exports from the Danube and the USSR are regarded as exports to Europe, and net exports from Japan as exports to ex-Europe. Exports are given on a July-June basis, which roughly approximates an August-July basis for imports.

July-June exports to Europe in 1939-40 were apparently no smaller than in 1938-39. They might appear even larger if the 1939-40 exports from French North Africa, not included in the tabulation, were substantially above the 1938-39 level of about 10 million bushels. This seems quite possible in view of the record crop of 1939 in French North Africa, but we have no information regarding the

actual size of exports. If French North Africa exported as much as 25 million bushels in 1939-40, the total net imports of Europe ex-Danube in 1939-40 probably approached the 1938-39 level of about 430 million bushels, even after allowance for the fact that some of the wheat shipped to Europe during the past crop year was sunk on passage.<sup>1</sup> On the other hand, it is equally possible that France, carrying large stocks of wheat from her 1938 crop, did not attempt to import much of the large North African surplus.

Country	Total gross exports		Exports to Europe		Exports to ex-Europe	
	1938-39	1939-40	1938-39	1939-40	1938-39	1939-40
United States . . .	115.8	54.3	74.7	22.1	41.1	32.2
Canada (clearances) . . . . .	156.4	196.2	136.4	176.0	20.0	20.2
Argentina . . . . .	114.3	178.0	74.0	136.2	40.3	41.8
Australia . . . . .	97.9	75.0 <sup>a</sup>	44.2	30.0 <sup>a</sup>	53.7	45.0 <sup>a</sup>
Four exporters	484.4	503.5	329.3	364.3	155.1	139.2
Danube <sup>b</sup> . . . . .	79.8	85.0	79.8	85.0	0	0
USSR . . . . .	40.0	2.0	40.0	2.0	0	0
Japan (net) . . . . .	9.6	7.9	0	0	9.6	7.9
Total . . . . .	613.8	598.4	449.1	451.3	164.7	147.1

<sup>a</sup> Including rough approximations for the months of March-June.

<sup>b</sup> Hungary, Yugoslavia, Rumania, Bulgaria; including rough approximations for recent months.

Even though there cannot be complete assurance that net imports of wheat into Europe ex-Danube during 1939-40 equaled those of 1938-39, it is safe to conclude that they exceeded 400 million bushels. And net imports within a range of 400 to 430 million bushels would be above current requirements for imported wheat, calculated on the basis of utilization during recent years (pp. 7-8).

Our attempt to appraise European net imports by reference to statistics of exports distributed by countries of destination yields only a rough approximation. It is even more hazardous to attempt to distribute exports to Europe between those moving respectively to the British Isles and to Continental Europe. In general, statistics of exports by countries of destination are much less reliable than statis-

<sup>1</sup> No data on the amounts so lost are available to us.



tics of imports, and at present only preliminary statistics of such exports are available even for the three exporters which continue publication. In these statistics, particularly those of Argentina, some of the shipments "to orders" are not yet distributed to final destinations. Moreover, much of the wheat shipped with destinations in Continental Europe was later diverted to the United Kingdom, when Scandinavia and subsequently the Low Countries were invaded by Germany. Hence, we can only say tentatively that, of the 450 million bushels shown in our tabulation as shipped to Europe, perhaps up to 250 million may have been shipped to the British Isles or diverted there, and about 200 million to the Continent.

Shipments from French North Africa, however, which are usually exported mainly to Continental Europe, are not included in the above totals. And how much of the wheat shipped respectively to Britain and the Continent actually arrived, depends on losses caused by sea warfare. Concerning this we can only say that presumably the losses were relatively larger for wheat shipped to Britain, since a large fraction of the Continental imports consisted of Danubian wheat shipped overland or within the Mediterranean Sea where risks of sinking were smaller.

While the exports of the principal exporting countries to Europe were apparently maintained in 1939-40 at about the same level as in 1938-39, their exports to non-European countries apparently declined. Of the countries continuing to report their trade, the United States exported to non-Europe substantially less in 1939-40 than in 1938-39, while Canada and Argentina slightly increased their non-European trade. The distribution of Australian exports between Europe and non-Europe since February 1940 is no more than a rough approximation, but gives a basis for the inference that Australian July-June exports to non-Europe declined substantially from the 1938-39 level. Yet the non-European trade was relatively better than trade with Europe. The Australian government made considerable effort to sell as much as possible of the large 1939 crop to countries nearer than those of Europe. Total exports to non-Europe

were thus about 10 per cent smaller in 1939-40 than in 1938-39.

United States exports to non-Europe declined mainly through reduction of exports to the Orient. These fell despite the fact that subsidization of wheat and flour exports from the Pacific Northwest to China (and Hong-kong) continued throughout the crop year, except for a few days in January. Apparently, rates of subsidization were not sufficiently high to move Pacific wheat in quantities to the Orient under conditions of tonnage shortage and Australian competition.

Australian exports to the Orient probably also declined somewhat in 1939-40, if one may judge from July-June imports by Oriental countries as estimated by the United States Department of Agriculture. Larger exports of Australian wheat to Japan partly compensated for decline of exports to China.

*Utilization.*—On the basis of such inadequate statistics, it is impossible to formulate even rough numerical measures of wheat utilization in the principal European importing countries in 1939-40. Even if trade statistics were available, it would be hazardous to appraise the quantitative effects on consumption of the various governmental regulations issued since August 1939. Indeed, in recent months it has proved difficult even to ascertain all of the principal changes in governmental regulations affecting the utilization of wheat. The incomplete information at hand justifies the statement that the spread of hostilities in Continental Europe since April 1940 has resulted in further tightening of governmental control of wheat utilization. Several countries, which during the winter months had obtained such heavy imports that they were able to postpone the introduction of bread rationing planned earlier in the war, have recently felt impelled to resort to rationing as their imports were cut by the blockade following the German invasion. This is true especially of Belgium and the Netherlands, presumably also of Denmark. Switzerland and Norway, which had earlier begun to ration flour, have recently tightened their systems. Experiencing difficulties with wheat imports, Spain also resorted to bread rationing in March 1940, and on May 1 cut the ration in half; how long this cut persisted

is not clear. The Greek government announced in June that it would ration flour. So far as we know, France had not introduced bread rationing before her defeat in June, though preliminary steps toward beginning rationing after April 1 had been taken. This is confirmed by recent reports that food rationing (including a daily bread ration of about 12.5 ounces per person) is to be introduced from the end of September in both occupied and unoccupied France.

On the whole, bread rationing does not appear to have been of major importance in restricting wheat utilization in Europe ex-Danube during 1939-40. More important in this respect, for the countries situated northwest of Germany and Italy, were increased rates of flour extraction and prohibitions of feed use of wheat, several cases of which were mentioned in our January and May surveys. In Central Europe, however, even these ways of conserving wheat were common in earlier years and thus could not have produced much additional reduction of wheat utilization in 1939-40. Nor would prohibitions of feed use of wheat have led to much reduction in wheat utilization even in northwestern Europe, since feed use of wheat there was not very large in 1938-39 as compared with other years of cheap wheat such as 1933-34 and 1934-35.

The following tabulation, in million bushels, gives something of a basis for appraising possible changes in wheat utilization in Europe ex-Danube (excluding Russia, old boundaries) from 1938-39 to 1939-40, and separately in the British Isles and on the Continent.

These data suggest a margin within which wheat utilization for the two areas of Europe ex-Danube probably fell in 1939-40. Wheat utilization in 1934-35, about 1,680 million bushels for the combined area, was close to the postwar peak, while that for 1937-38, some 1,605 million bushels, was probably the lowest since 1925-26. This range of possible fluctuation in wheat utilization in Europe ex-Danube, together with the estimates of initial stocks and the 1939 crop, supplies a basis for judgment of (a) the degree to which net imports of Europe ex-Danube, earlier appraised within the range of 400 to 430 million bushels, covered current requirements of wheat,

and (b) how much wheat carryovers in Europe ex-Danube may have changed between August 1, 1939 and August 1, 1940.

August-July	Initial stocks	Crops	Net imports	Total supplies	Utilization
CONTINENTAL EUROPE EX-DANUBE					
1934-35 .....	339	1,223	133	1,695	1,384
1935-36 .....	311	1,201	119	1,631	1,377
1936-37 .....	254	1,033	231	1,518	1,336
1937-38 .....	182	1,113	196	1,491	1,332
1938-39 .....	159	1,310	181	1,650	1,352
<i>Average 1934-39</i> .....	<i>249</i>	<i>1,176</i>	<i>172</i>	<i>1,597</i>	<i>1,356</i>
1939-40 .....	298	1,179	...	...	...
BRITISH ISLES					
1934-35 .....	44.5	73.6	217.4	335.5	296.5
1935-36 .....	39.0	72.1	220.3	331.4	289.9
1936-37 .....	41.5	63.1	211.6	316.2	278.2
1937-38 .....	38.0	63.3	207.8	309.1	274.1
1938-39 .....	35.0	80.7	246.6	362.3	288.3
<i>Average 1934-39</i> .....	<i>39.6</i>	<i>70.6</i>	<i>220.7</i>	<i>330.9</i>	<i>285.4</i>
1939-40 .....	74.0	71.1	...	...	...
TOTAL EUROPE EX-DANUBE					
1934-35 .....	383	1,296	350	2,029	1,679
1935-36 .....	350	1,273	339	1,962	1,666
1936-37 .....	296	1,096	443	1,835	1,615
1937-38 .....	220	1,176	404	1,800	1,606
1938-39 .....	194	1,391	428	2,013	1,641
<i>Average 1934-39</i> .....	<i>289</i>	<i>1,246</i>	<i>393</i>	<i>1,928</i>	<i>1,641</i>
1939-40 .....	372	1,250	...	...	...

Wheat utilization in Europe ex-Danube in 1938-39 was very close to the five-year average ending in that year, some 30 million bushels higher than the average for the two preceding years, and about the same amount lower than the average for the two earliest years of the five-year period.<sup>1</sup> Of the total increase of 35 million bushels in wheat utilization between 1937-38 and 1938-39, a considerable portion, perhaps 10 to 20 million bushels, probably represented increase in feed use, particularly in the United Kingdom. Consequently, wheat utilization in 1939-40 may have been reduced correspondingly by the early regula-

<sup>1</sup> The appraisals pertaining to 1934-35 and 1935-36 may not be quite comparable with those for the three following years because of a change in the basis of French crop estimates. French crops, and consequently utilization, seem to be estimated on a somewhat lower basis since the organization of the French Wheat Board under the law of Aug. 15, 1936.

tions prohibiting or restricting feed use of wheat. It is difficult to assess the quantity of wheat saved by the increases of flour-extraction rates, but (if strictly applied) this may well have amounted to some 8 to 10 million bushels in the United Kingdom alone.

Such economies in the use of wheat may, however, have been partially offset by enlargement of bread requirements caused by war, which is a matter of conjecture in the quantitative sense. We incline to the opinion, however, that wheat utilization in the British Isles may have been reduced by existing regulations to about the average level of 1936-37 and 1937-38, or some 275 million bushels, while in Continental Europe utilization perhaps remained closer to the level of 1938-39 than to that of 1937-38. The net reduction of total wheat utilization in Europe ex-Danube may thus have amounted to some 15 to 20 million bushels in 1939-40 as compared with 1938-39. The absolute total for Europe ex-Danube in 1939-40 may have been about 1,620 million bushels, as against about 1,640 million utilized both in 1938-39 and on the average for the five-year period preceding the war.

At such a level of wheat utilization in Europe ex-Danube during 1939-40, net imports of 400 million bushels—the lower figure of our range of estimate—would probably have more than covered current import requirements. Consequently stocks on August 1, 1940 may have increased some 30 million bushels above those of 1939. If net imports approached last year's level of about 430 million bushels (see p. 5), stocks in Europe ex-Danube may have risen by some 60 million bushels.

Our appraisal of shipments separately to the British Isles and the Continent indicates that stocks may have increased somewhat in both areas. Yet accumulation of stocks on the Continent would not preclude bread shortage in some of the countries within this area. Such trade information as is available suggests that accumulation of stocks on the Continent occurred mainly in the two "Axis" belligerents, particularly Italy but perhaps also Greater Germany. Switzerland also may have increased her stocks, at least if she was permitted to bring in wheat via French and Ital-

ian ports through which she usually imports. Norway also may have accumulated larger stocks this year than last, though these may have been absorbed in some degree by Germany. With some restriction of consumption, Sweden too may have built up her stocks slightly.

Few of the formerly neutral countries could do this. There is no question that Belgian working stocks of wheat were extremely low at the time her small crop of 1939 was harvested. The same situation probably prevailed in Denmark. The Netherlands had succeeded better in building up reserves during 1938-39, and with what she could import prior to invasion she was probably in a better position to stretch her supplies until harvest of her new crop. French stocks presumably declined also, especially if wheat imports from North Africa were small. But French stocks were so large on August 1, 1939, that even a substantial decline could hardly create an emergency during 1939-40, except late and locally because of difficulties of distribution.

In the four principal exporting countries, it appears (Table IX) that aggregate domestic utilization was substantially smaller in 1939-40 than in 1938-39. From the relatively high level of about 1,010 million bushels in 1938-39, which had been exceeded in postwar years only in 1930-31 and 1931-32, utilization may be calculated to have declined in 1939-40 to about 940 million bushels. Some of this decline may be purely statistical, reflecting underestimation of the 1939 crop in Canada (see below). Most of it, however, was due to an actual decline of nearly 50 million bushels in United States utilization. Mill grindings, seed use, and feed all fell in 1939-40 below the 1938-39 level, but the principal factor was the smaller feed use of wheat.

On the basis of standing official data on crop, year-end stocks,<sup>1</sup> and exports, domestic disappearance of wheat in Canada in 1939-40 appears 20 million bushels smaller than in 1938-39. But statistics of marketings by producers in the Prairie Provinces suggest that the 1939 crop may have been underestimated

<sup>1</sup> The official estimate of stocks in Canada as of Aug. 1, 1940 was 273 million bushels. It included an unexpectedly large quantity of wheat on farms.

by 20 to 25 million.<sup>1</sup> If so, actual utilization for 1939-40 may even have exceeded that for 1938-39. This seems the more credible because mill grindings of wheat for domestic use were reported slightly larger for 1939-40 than for 1938-39; and the preliminary official estimate of wheat fed to livestock was also high.

**Year-end stocks.**—August 1 carryovers of wheat from the 1939 crop in the four chief exporting countries, for which the estimates may be regarded as about as close to the facts as usual except for Australia, are given in the tabulation below, in million bushels, with comparisons.

Position	1933	1934	1937	1939	1940
United States <sup>a</sup> . . . . .	378	274	83	252	284
U.S. in Canada <sup>a</sup> . . . . .	4	0	0	1	1
Canada . . . . .	210	194	33	95	273
Canadian in U.S. . . . .	8	10	4	8	28
<b>Total North America . . . . .</b>	<b>600</b>	<b>478</b>	<b>120</b>	<b>356</b>	<b>586</b>
Australia . . . . .	55	84	41	50	125
Argentina . . . . .	75	118	51	220	60
<b>Total Southern Hemisphere</b>	<b>130</b>	<b>202</b>	<b>92</b>	<b>270</b>	<b>185</b>
<b>Grand total . . . . .</b>	<b>730</b>	<b>680</b>	<b>212</b>	<b>626</b>	<b>771</b>

<sup>a</sup> As of July 1.

Year-end stocks in these countries increased greatly during 1939-40—more than could reasonably be expected in view of the large exports. This reflects the probable understatement of the Canadian and Argentine crops. For the four chief exporters together, year-end stocks rose about 145 million bushels and reached a new high, some 40 million above the previous peak on August 1, 1933. In North America alone, stocks were enlarged about 230 million bushels. But at some 585 million bushels, these stocks failed to reach the peak level of 1933.

<sup>1</sup> The Canadian official crop report for September 1940 observes that "the final estimate for 1939 will likely be raised," but it gives no indication of the expected amount of revision.

<sup>2</sup> Our revised estimate based on the assumption that the 1938 crop approximated 380 million bushels. We have made no other important revisions in our 1939 stocks estimates, mainly because of the lack of necessary statistical information. Tentatively, we carry our estimate of world stocks on about August 1, 1939 at 1,145 million bushels.

In the Southern Hemisphere, on the contrary, year-end stocks were some 85 million bushels lower on August 1, 1940 than they were the year before. An enormous rise in Australian stocks from 50 million bushels to the huge total of about 125 million (the largest annual increase since 1915-16) was more than offset by an enormous decline of Argentine stocks. From the record peak of 220 million bushels<sup>2</sup> on August 1, 1939, Argentine stocks dropped to the low level of only about 60 million bushels on August 1, 1940. This was due to the rapid export, unexpected during the war, of a huge carryover from the 1938 crop, and to the extremely small 1939 crop. Total stocks in the Southern Hemisphere on August 1, 1940 were nevertheless large, and only slightly below the earlier peak of 1934.

Carryovers in other exporting areas at the end of 1939-40 were also high, though numerical appraisal this year involves more uncertainty than usual. In May we anticipated that the Danubian carryover, even with crop-year exports of about 100 million bushels, might attain the record level of the previous year, some 80 million bushels. With the smaller Danubian exports that now seem probable—less than 90 million bushels—the carryover there may have been even larger. Yet, since part of the Rumanian stocks went with Bessarabia to the USSR, and since the accuracy of the estimates of Danubian stocks is usually low, it is safer to suppose that on August 1, 1940, stocks in the Danubian countries were about as high as last year's on the same date.

Year-end stocks in French North Africa must have been a little larger than a year ago. They could have increased by some 10 million bushels even if French North Africa had succeeded in exporting 25 million bushels, though this does not seem very probable. With smaller exports, say 15 million bushels, the carryover in French North Africa might well have risen by about 20 million bushels. These contingencies do not affect total world stocks: in case of smaller North African exports, larger stocks would remain there, while in case of larger exports, stocks in Europe ex-Danube would reflect these exports.

From earlier analysis of possible net imports and utilization of wheat in Europe ex-

Danube (pp. 6-8), the conclusion was that European stocks on August 1, 1940 may have increased by some 30 to 60 million bushels in the course of the crop year. The extent of increase, however, depended partly upon unknown circumstances regarding exports to Europe from French North Africa, the Danube countries, and other minor exporters.

To summarize the year-end stocks position, it may be said that "world" stocks of wheat as of about August 1, 1940 may have exceeded last year's level on the same date by about 220 million bushels. If so, the "world" level was the highest ever reached. All such conclusions, however, must this year be based on much scantier quantitative evidence than has been available for many years.

#### CROPS AND SUPPLIES FOR 1940-41

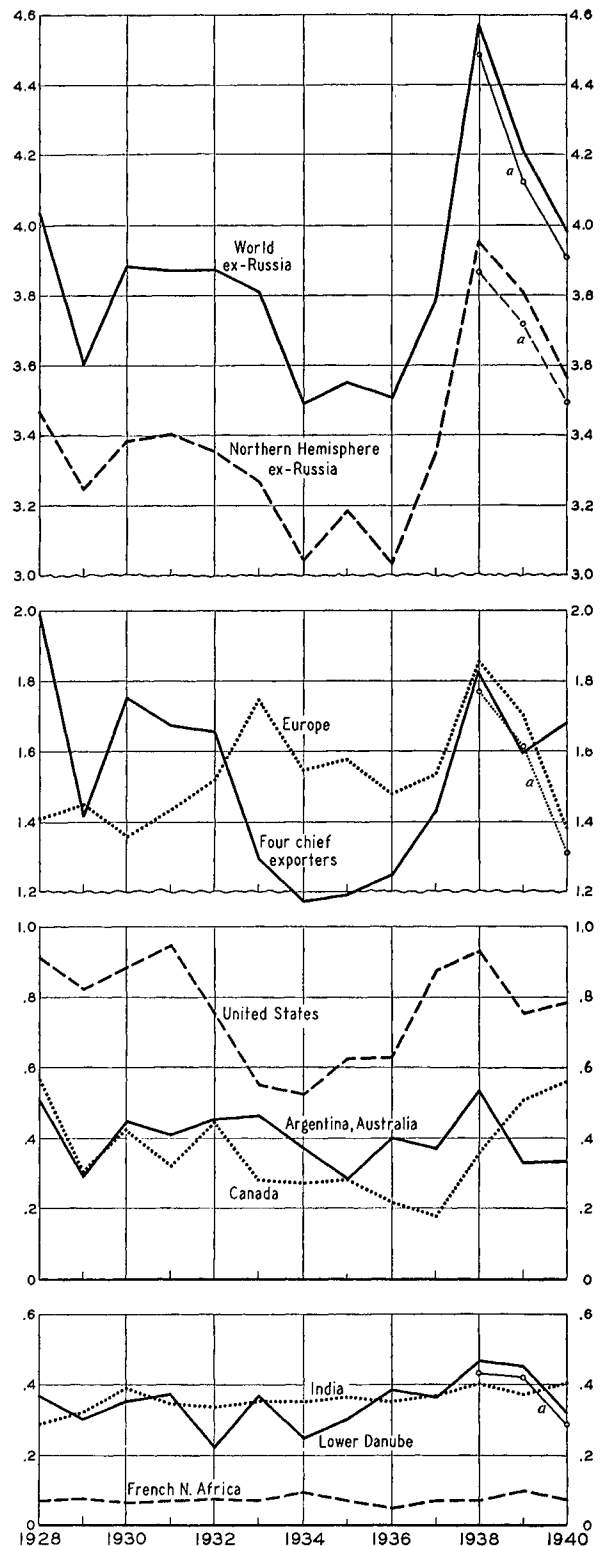
Although no official crop estimates are available this year for most European countries, there is now no question that the new wheat crop of the Northern Hemisphere ex-Russia is considerably smaller than either of the two preceding harvests. The amount of the reduction, arrived at by a substantial amount of "guesstimating," seems to be in the neighborhood of 225 million bushels as compared with 1939, and 375 million as compared with 1938—roughly 6 and 9 per cent respectively.<sup>1</sup> These percentages apply either to the former boundaries of the Northern Hemisphere ex-USSR or to the present more contracted boundaries which have resulted from Russian absorption of territory from Poland, Finland, Estonia, Latvia, Lithuania, and Rumania. Through these boundary changes, the Soviet Union gained perhaps 70 to 80 million bushels of new-crop wheat in 1940, as compared with an approximate average production of 90 million in these areas in the two preceding years. Her gain in estimated carry-over was around 10 million bushels, and in population almost 23 million people.

Chart 2<sup>2</sup> shows roughly the distribution of

<sup>1</sup> In these comparisons, as in Chart 2, we have made allowance for underestimation of the standing official crop estimates for Argentina and Canada in 1938 and 1939, respectively (pp. 3-4 and 7-9).

<sup>2</sup> Tables I and II show recent revisions of crop approximations for Australia and Europe ex-Russia not reflected in the Chart.

CHART 2.—WHEAT CROPS EX-RUSSIA, 1928-40\*  
(Billion bushels)



\* See Tables I and II.

<sup>a</sup> New boundaries ex-Russia, as defined in text.

wheat production within both the "old" and "new" boundaries back to 1938; but in the following discussion we confine attention to the approximate data for the new boundaries, except as otherwise noted.

With what now appears to be reasonable allowance for future harvests in the Southern Hemisphere, it seems probable that the 1940 world crop ex-Russia will amount to about 3,915 million bushels. This is a huge reduction from the record outturn of 4,484 million within the same boundaries in 1938. It is a large decline even from the more moderate harvest of 4,122 million bushels secured in 1939.

The record world carryover of 1940 (p. 10), however, will go far to make up for these deficiencies. Even if Russia exports no wheat from her large harvest this year, the total wheat supplies available to the world ex-Russia may well approximate 5,275 million bushels. This would be more wheat than was within the same boundaries in 1938-39 and no less than the record supplies of last year. Moreover, if the present early crop estimates and approximations for 1940 are subsequently revised upward, as early estimates usually are, the aggregate wheat supplies of 1940-41 will presumably later appear to stand at a peak higher than any previously reached.

Under present war conditions, the size of the world's wheat supplies is less important than their distribution. On the European Continent outside of the Soviet Union wheat and total bread-grain supplies are considerably smaller than in either of the two preceding years and somewhat below the 1934-38 average; but in nearby export areas—the USSR, the Near East, and northern Africa—large wheat surpluses are said to be available. The British Isles, with unprecedentedly large old-crop stocks of wheat on hand on August 1 and a good-sized harvest, started the crop year with wheat supplies of record size; but, as usual, this area must depend upon imports for a very large portion of its needs. Such imports are readily obtainable in Canada so long as the British navy controls the seas; for Canada's exportable surplus for 1940-41 is now placed at a peak figure of 675 million bushels—enough to fill the normal bread and wheat-

feed requirements of the United Kingdom for considerably over two years without the use of any British or other foreign wheat. United States wheat supplies are also large this year, though by no means so large as the peak supplies of 1930-32.

The two major Southern Hemisphere exporters are now expected to have materially less wheat, in the aggregate, than they had on the average in the ten preceding years. Argentina, which is closer to Europe, will presumably have an abnormally small supply, while Australia seems likely to be faced with a large surplus which cannot flow freely into export under war conditions.

**Europe ex-Russia.**—No one knows, and no one (with the possible exception of a few government officials in Germany) can even confidently estimate, the size of this year's wheat crop in Europe ex-Russia. Official 1940 crop estimates have thus far been issued by only four European nations; trade estimates are conspicuous for their absence; and an insignificant number of crop approximations has so far been published by the United States Department of Agriculture.<sup>1</sup> This Department has, however, published aggregate crop approximations for Europe ex-Danube ex-Russia and for the Danube basin. These presumably rest upon a very substantial amount of qualitative information collected by representatives of our State and Agricultural Departments located in Europe. But under the circumstances, there can hardly be a fully adequate basis for any set of estimates.

We interpret the available crop information to indicate that the 1940 European wheat crop outside the present boundaries of the USSR amounts to something like 1,330 million bushels. This represents a reduction of roughly 285 million bushels or 19 per cent from last year; but since early crop estimates and approximations are more often than not

<sup>1</sup> In past years the Department has performed a useful service by publishing early crop estimates for individual European countries prepared by its foreign representatives. In *The Wheat Situation* for June 26, 1940, the Department noted that the total European crop would be the smallest since 1930 (when the crop totaled 1,360 million bushels). A month later the first quantitative approximation of the European harvest was put at 1,360 million bushels, and this same figure was repeated late in August.

revised upwards, the reduction may later prove to be smaller than now indicated. The entire decline is apparently in the Continental European crop, and this is perhaps divided fairly equally between the Danube basin and the rest of the Continent.

The Danubian crop, appraised by our Department of Agriculture at roughly 300 million bushels (former Russian-Rumanian boundaries) seems to us likely to be at least 5 to 10 per cent larger than this figure. Current trade estimates for the different countries seem to range between 310 and 345 million bushels; and such meager information as is available on wheat sowings and yields tends to support the latter figures. Moreover, the disturbed political conditions in southeastern Europe this year would probably encourage understatement of crops by both the farmers and the governments in this region.

The following tabulation in million bushels shows the range of early crop estimates for the Danube countries (1939 boundaries) taken from various sources that usually prove reasonably reliable. It should be noted, however, that in recent years, early estimates and approximations for these countries have almost always been revised upwards.

Country	1934-38 average	1939	1940
Hungary .....	92 <sup>a</sup>	113	78-99
Yugoslavia .....	89	106	66-74
Rumania .....	123	163	110 <sup>b</sup>
Bulgaria .....	58	71	57-62
Total .....	362 <sup>a</sup>	453	311-345

<sup>a</sup> Approximately adjusted for territory ceded by Czechoslovakia to Hungary in 1939.

<sup>b</sup> July official estimate.

Too little information is available to warrant criticism of the detailed estimates; but we may record our belief that the total Danubian crop (old boundaries) is unlikely to prove smaller than 325 million bushels—roughly the middle of the range of the private estimates. Even so, the 1940 crop would still be 125 million bushels smaller than the bumper outturn of 1939 and 35 million below the moderate average for 1934-38. Corrected for the recent loss of Rumanian territory to Russia, these reductions would appear larger—say, roughly, 155 and 65 million bushels, respectively.

In Europe ex-Danube, the few nonbelligerents not directly under German control (Spain, Portugal, Greece, Switzerland, Sweden, and Finland) apparently secured a fair aggregate harvest this year; and Italy reports a reduction in outturn from 1939 of only 25 million bushels or 9 per cent. Thus, the great bulk of the big crop decline in Europe ex-Danube is in the territory now under German domination.

This is shown, in million bushels, in the following tabulation. The validity of the 1940 residual figure for the German-controlled area, rests heavily upon the crop approximation of 1,075 million bushels used for the old boundaries of Europe ex-Danube. Under the circumstances, any such appraisal contains a large degree of conjecture; but this figure seems to be in line with ideas now current in this country. The Danubian crop figure is our approximation, discussed above; the figures for the British Isles and the area taken over by Russia are also our approximations (probably conservative); over three-fourths of the 1940 total for "neutral" nations is represented by official estimates for Spain and Greece; and the Italian estimate is also official.

Area	1934-38 average	1939	1940
Europe ex-USSR (old bound.)	1,599	1,703	1,400
British Isles .....	71	71	72
Continent (old bound.) .....	1,528	1,632	1,328
Danube basin <sup>a</sup> (old bound.)	362	453	325
Continent ex-Danube (old bound.) .....	1,166	1,179	1,003
Baltic <sup>b</sup> and Russ. Poland..	52	57	40
Continent ex-Danube (new bound.) .....	1,114	1,122	963
Neutrals <sup>c</sup> .....	217	215	204
Axis-controlled areas (new bound.) .....	897	907	759
Italy .....	267	294	268
German-controlled area <sup>d</sup> .....	630	613	491

<sup>a</sup> Hungary, Yugoslavia, Rumania, Bulgaria. Boundaries are as of 1939 for Hungary.

<sup>b</sup> Estonia, Latvia, Lithuania.

<sup>c</sup> Spain, Portugal, Greece, Switzerland, Sweden, and Finland.

<sup>d</sup> Greater Germany (including Austria, Bohemia-Moravia, and all of former Poland except the part transferred to Russia), Slovakia, Norway, Denmark, the Low Countries, and all of France.

These figures suggest that the aggregate reduction in the 1940 wheat crop of the German-

controlled area amounts to 20 per cent as compared with last year and 22 per cent as compared with 1934-38. Where can such reductions have occurred? Almost certainly not in Germany itself, where the present crop is described by the U.S. Department of Agriculture as "below the large crops of the last two years, although not much below average." Almost certainly not, either, in the former Czechoslovakia, where special efforts were made last fall to plant a large wheat acreage and weather conditions were presumably no worse than in Germany. In these particular areas—Germany (including Austria) and Czechoslovakia—it seems more or less unlikely than the 1940 crop should be more than, if as much as, 10 per cent below the preceding five-year average.<sup>1</sup>

That would leave roughly 275 million bushels for German Poland, France, the Low Countries, Denmark, and Norway—areas which harvested 394 million bushels in 1934-38 and 368 million in 1939. In percentage terms, the corresponding reductions from the two preceding periods would come to 30 and 25 per cent respectively. All reports from these areas agree that there was a large decline in the outturn of wheat this year, due to various factors associated with the war and to unusually low temperatures and excessive rain in the winter; but the reports do not seem to us to imply that the decline was as large as the above figures indicate. We judge that subsequent revisions in these crop estimates are more likely to be upward than downward.

Even if the wheat harvest in Continental Europe outside the old boundaries of the Soviet Union actually amounted to less than 1,330 million bushels this year (the smallest outturn since 1930) this would not necessarily mean that the Continent faces serious food shortage this winter. The Danube basin had a large aggregate carryover of old-crop wheat and now expects a good-sized corn crop. Pre-

sumably wheat consumption will be considerably contracted in this region from the high levels of the past two years and the consumption of corn and rye will be expanded, with the possible release of something like 30 million bushels of wheat for exportation.<sup>2</sup> Moreover, in Central Europe, the rye and potato crops appear likely to be of average size or better, and they can presumably be diverted in larger proportion than usual to human consumption. However, the question of possible future scarcity of food rests heavily upon the quantitative distribution of food supplies by areas—a matter considered below.

In Continental Europe ex-Danube, heavy old-crop stocks of wheat so supplement the present crop that total wheat supplies in this area are probably not appreciably more than 150 million bushels (10 per cent) below the supplies available in each of the two preceding years. Nor are they more than the same amount below the quantity required to maintain wheat utilization at about the level of 1939-40 with provision for minimum year-end reserves. But the wheat supplies of Continental Europe ex-Danube are by no means evenly divided; and there is every reason to suppose that if the present war continues, several of the controlling governments will be quite unwilling to let their year-end wheat stocks dwindle to minimum levels. It is, therefore, necessary to consider the wheat positions of different countries and groups of countries separately. Although in many cases the basic data are not available for confident judgments, the situation seems to be about as follows.

Among the neutral nations, Sweden, Switzerland, and Portugal have food reserves which together with this year's crops are reported to be fairly adequate for at least a year. We judge that in Switzerland there must be substantial curtailment of wheat consumption in favor of other foods; but both Sweden and Portugal are apparently well supplied with wheat. Spain, Greece, and Finland, which are less fortunate in their domestic positions, can presumably get small imports from neighboring countries and/or on navicerts issued by the British navy. In any case, the gross food position of the six neutral nations appears reasonably satisfactory, though there may well

<sup>1</sup> The corresponding reduction in outturn of all grains in the German Reich has been officially placed at 2 per cent, according to press reports.

<sup>2</sup> This assumes that in 1941 wheat carryovers may still be relatively large in this region. The existing uncertainties and threats of war in southeastern Europe presumably encourage the holding of heavy stocks by farmers.



be forced changes in consumption which reduce the quality of diet. In so far as quantity alone is concerned, Switzerland seems to be in the most vulnerable position under continued blockade, largely because of her geographical handicaps.

Italy, with a reported wheat crop of 268 million bushels and a notably heavy and probably record wheat carryover, could apparently maintain her wheat consumption at the average level of the past five years without competing with her axis partner for any of the exportable wheat supplies of the Danube basin. But if the war continues, it seems highly improbable that Italy will willingly reduce her stocks so drastically: we expect, instead, continued but reduced importation, government limitations on wheat consumption, and maintenance of stocks at as high a level as possible.

Within the German-controlled area, total available wheat supplies are probably about 120 million bushels smaller than last year and 130 million smaller than the year before. With such supplies and imports of 15-25 million bushels from the Danube, it would theoretically be possible in the absence of other imports to maintain normal seed use of wheat and a rationed level of food and feed consumption reduced by only about 10 per cent from the level of 1939-40. This, obviously, would not mean critical food shortage. However, it would involve serious depletion of the surplus wheat stocks now under the control of the German government—a development which is inconceivable under existing war conditions, and one which is quite unnecessary in view of the large supplies of rye, potatoes, and root crops that Germany also has available.

Of the various German-dominated countries, German Poland and France would probably be the least vulnerable in their food positions under continued blockade, if their domestic supplies could be retained for the use of their own people and reasonably distributed among them. The large portion of former Poland now controlled by Germany presumably had no surplus stocks of old-crop grain at the end of 1939-40; but in spite of this and in spite of reduced crops this year, her domestic food supplies may not be particularly short. Normally this area has produced

small surpluses of bread grains, potatoes, feed grains, and meat; therefore, even reduced crops might adequately cover rationed consumption requirements, if the peasants could be made to sell freely and the bulk of the available surpluses could be retained in Poland and not diverted to Germany. But great distress may persist in the chief cities, if the German government shows no more concern than reported in the past over the plight of the Polish urban population.

France, as formerly constituted, had large grain supplies (mainly wheat) at the time of the German conquest; and assuming no heavy German takings, her stocks probably remained large on August 1. Thus, even with a sharply reduced crop, there should still be enough wheat and other food supplies in the whole of France to provide adequate food under rationing for the current crop year. But it is now impossible to determine what the approximate division of these supplies is as between the occupied and unoccupied areas. In unoccupied France there may be relative shortage, in the occupied area substantial surpluses. Moreover, the French food position is now complicated by the large numbers of refugees in the unoccupied area and by the disruption of normal transportation and domestic trade facilities. Viewed from a distance, the French food problem appears to be less of general shortage than of unsatisfactory distribution, though later shortage may result from German absorption of basic supplies. In unoccupied France, the possibility of shortage would be lessened if substantial quantities of wheat could be drawn from northern Africa.

Norway's position is far from clear. Last spring this country is reported to have had on hand enough grain and other food reserves to feed her population for over a year; and if these were not removed by the German government, they should prove adequate to prevent food shortage during 1940-41. However, conflicting reports have come from Norway as to the disposal of these stocks and as to the imminence of food shortage. We are not in a position to pass judgment on the opposing reports, but can only point out that if Norway has kept her basic grain stocks and has fair reserves of other high-calorie foods, her posi-

tion should not be critical in 1940-41, even if some of the choicer foods have been consumed or removed to Germany.

In contrast, Belgium, the Netherlands, and perhaps Denmark now face such great deficiencies in their domestic bread-grain supplies that, under continued warfare, food shortage definitely threatens in these areas unless Germany devises measures to prevent it.<sup>1</sup> Denmark's position is clearly the least serious. Undoubtedly, there is a deficiency of wheat and rye in Denmark this year—even as compared with minimum normal requirements; but if the Danish farmers can be kept from feeding these grains, if the normal surplus of potatoes is available and can be largely diverted to human consumption, if the expected increased supply of meat from slaughtered livestock is made available to the people of Denmark (and not transferred to Germany except in exchange for other food), no critical food shortage should develop. Moreover, since Denmark represents the major foreign source of Germany's supply of meat, fat, and dairy products, and since the Danish government has co-operated with the German government from the time of the Scandinavian invasion, it seems probable that Germany will go to considerable pains to prevent excessive shortage of gross food or feed supplies in Denmark.

Belgium and the Netherlands seem to be in a much worse position because of their very heavy dependence on imports. Of these two, Belgium evidently faces the greater food shortage. Belgium had apparently used all her available surplus wheat stocks by August 1 and had even drawn on normal year-end working reserves. Taking account of the new crop, and allowing for a 10 per cent reduction in consumption, we judge that the wheat-import deficit in Belgium for 1940-41 is 35 to 40 million bushels or 70 per cent. The general food and feed position in that country is worse than

the wheat position alone; for Belgium is normally dependent upon foreign countries for substantial imports of rye, coarse grains, and even potatoes. How early in 1940-41 serious food shortage might be expected to become apparent is not clear; but if the war continues, the situation is almost certain to become critical—at first in the cities, but later probably also in the country.

The Netherlands faces an outlook which is somewhat less dark because (1) she apparently held substantial year-end reserves of wheat on August 1, 1940, (2) she is normally dependent upon foreign countries only for wheat and feed supplies, and (3) she normally produces and exports a substantial surplus of potatoes. This year the minimum wheat-import deficit of the Netherlands may perhaps be placed at 15 to 20 million bushels, or 50 per cent. Like Denmark, both Belgium and Holland are livestock-producing and dairying countries and can postpone serious food shortage for a time partly by slaughtering livestock. But the farmers may be expected strongly to resist such a move; and, unless forcibly prevented, they may even attempt to feed grain and potatoes that should, in the national interest, be reserved for food use.

**North Africa, Near East, and USSR**—Europe's food problem might be partially solved for the present year if heavy wheat imports could be secured from North Africa, Turkey, Syria, and the USSR. All of these neighboring areas are reported to have large wheat supplies; but the prospect for their export contributions is not bright (p. 28).

The three French dependencies of North Africa apparently produced only an average crop in 1940; but this together with a record carryover of old-crop wheat presumably left total wheat supplies at or near a record high level.

Reports from Turkey and Syria and Lebanon indicate an aggregate wheat crop in this region of almost 200 million bushels—the largest ever harvested. In these countries, reported (possibly not actual) wheat production has been increasing rapidly over the past five years, but thus far without much reflection in exports. In the four years 1931-32 through 1934-35 Turkey and Syria and Leb-

<sup>1</sup> Germany's recent move to requisition the Belgian wheat crop may represent a step in this direction. It could be so interpreted, since there is normally much difficulty under conditions of threatened shortage to insure the marketing of the bulk of the crop. Peasants tend to hoard grain in order to assure their own food position, to profit from price advances, and to feed their farm animals.

anon exported net an average of about one million bushels of wheat annually from an estimated average production of 106 million bushels; during the following four years the reported average production increased to 150 million bushels while exports increased to only 3 million.

The Soviet Union, potentially a much more important wheat exporter, has consistently published optimistic reports of crop development this year. At present there is no reason to doubt that Russia's new wheat crop is large, and materially larger than in either of the two preceding years. Both in the Ukraine and the Lower Volga region weather conditions were more favorable for the 1940 crop; and the average yield per acre for the country as a whole is expected to be high. This means that the USSR could probably export a substantial amount of wheat this year without contraction of domestic consumption; but the actual volume of her exports will be determined by governmental decisions resting heavily on political considerations.

**United States.**—A phenomenal recovery from the lowest December crop condition ever recorded<sup>1</sup> marked the course of development of the United States winter-wheat crop. Reflecting a reduced sown acreage,<sup>2</sup> and unfavorable moisture conditions in the fall, the December 1 official crop report indicated a prospective outturn of less than 400 million bushels. In contrast, the most recent official estimate is 556 million bushels, warranting journalistic references to "the miracle crop."<sup>3</sup>

<sup>1</sup> The crop condition on December 1 was officially estimated at 55 per cent. The previous record low for December 1 was 69 per cent for the 1933 crop.

<sup>2</sup> Sown acreage declined to 45.0 million acres, a reduction of more than one million acres from the 1939 crop seeding, which in turn was more than 10 million acres below the seedings for both 1937 and 1938. This sharp decline in the past two years reflects a combination of several factors: the government's acreage adjustment program; reduced wheat prices; and unfavorable sowing conditions in some areas.

<sup>3</sup> The steady increase of the monthly official forecasts and estimates of production, in million bushels, from April 1 to August 1, were as follows: 426, 460, 489, 524, and 556.

<sup>4</sup> The official data for earlier months were as follows, in million bushels: June 1, 239; July 1, 205; and August 1, 205. The sharp reduction in the July figure was due to extreme heat and lack of sufficient moisture.

Under the stimulus of favorable spring and summer weather, much of the seeded acreage which at the first of the year appeared likely to be abandoned made a sudden, unusual recovery. In the three months April 1 to July 1, official estimates of acreage abandonment were reduced from 29 to 22 per cent, and corresponding estimates of the area remaining for harvest were increased by 3 million acres. As the crop matured, forecasts and estimates of the yield per harvested acre rose steadily. The successive official figures from May to August were 13.5, 14.3, 15.0, and 15.9 bushels.

Through August, 70 per cent of the hard winter-wheat inspections and 75 per cent of the soft winter graded No. 2 or better, as compared with average first-quarter figures for 1934-39 of 58 and 50 per cent, respectively. Protein content is also high this year, though less strikingly so than in 1939: much high-protein wheat is again available, but low-protein wheat is more abundant.

In contrast to the poor seeding conditions for winter wheat, the moisture conditions for spring sowings were in many areas the most favorable in any recent year. Sowing, however, was somewhat late owing to the cold rainy spring. The seeded acreage is now estimated at 19.4 million acres, of which 17.8 million remain for harvest. As of September 1, the official estimate of spring-wheat production was 228 million bushels,<sup>4</sup> 36 million or 19 per cent above the 1939 harvest. Early inspections suggest that the new spring wheat will grade extraordinarily high.

In total, the new United States wheat crop is now estimated at 784 million bushels. Together with an estimated carryover of 284 million, it brings the total wheat supplies in this country to 1,068 million bushels—a figure exceeded in only five earlier years. With more or less average domestic wheat utilization in 1940-41, the surplus for export and carryover would approximate 375 to 400 million bushels.

**Canada.**—As of September 1, the 1940 Canadian wheat crop was estimated at 561 million bushels, practically equal to the bumper harvest of 1928. The seeded area of 28.7 million acres exceeded the previous record for 1932

by more than 5 per cent. At seeding time sub-soil moisture reserves in the Prairie Provinces were generally low, but timely showers throughout the growing period maintained adequate moisture in most sections.<sup>1</sup> In general, harvest weather was excellent. Only slightly below that of last year, the present indicated average yield is 19.5 bushels per acre, more than 50 per cent above the preceding 10-year average.

Canada's present bumper wheat crop, unlike her former ones, was harvested at a time when domestic stocks of old-crop wheat were extremely heavy. As now estimated, the 1940 crop together with the record August 1 carry-over of old-crop wheat within Canada totaled 834 million bushels, almost 200 million more than the previous record supplies of 1928-29.

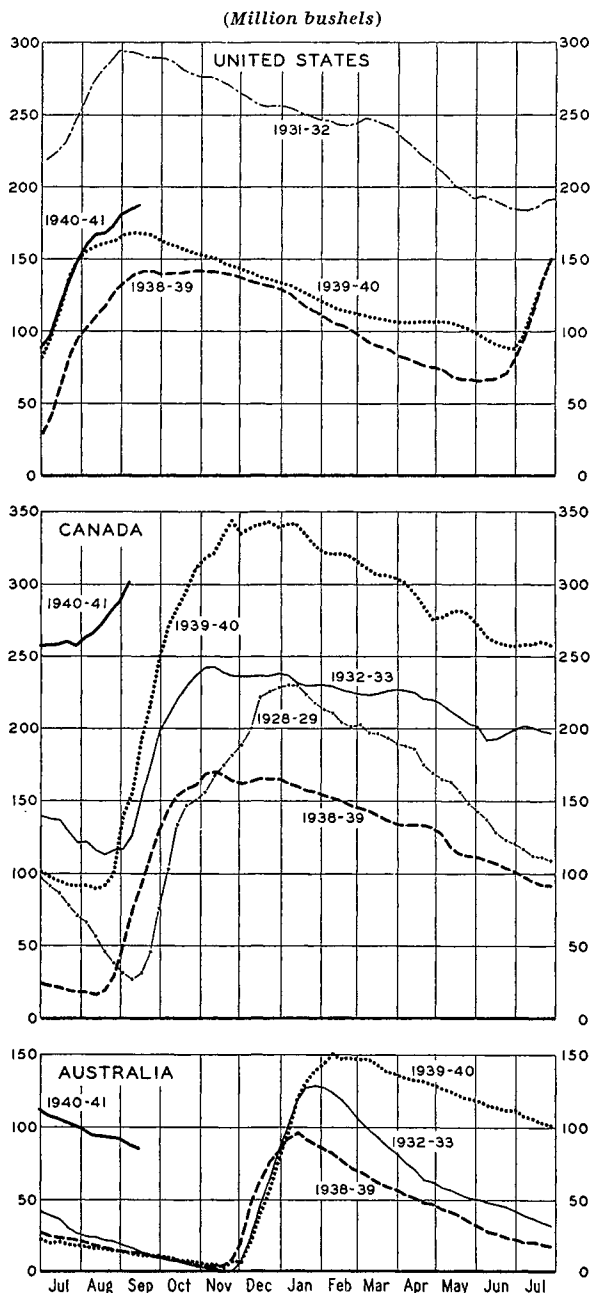
With visible wheat stocks on August 1 already at an unprecedentedly high level (Chart 3), the huge new wheat crop clearly foreshadowed serious storage difficulties.<sup>2</sup> In an effort to prevent the impending congestion, the Canadian Wheat Board, under special marketing legislation, made provisions to control deliveries by means of permits. Farmers were at first permitted to deliver not more than 5 bushels of wheat per seeded acre; but the board later enlarged quotas for specified points where extra storage space was available and in mid-September raised the general

<sup>1</sup> The official estimates of crop condition (calculated as a percentage of the long-time average condition) were: May 31, 96; June 30, 90; July 31, 87.

<sup>2</sup> It has been roughly estimated that the total working capacity of licensed elevators and annexes in the Prairie Provinces (including some under construction) is now about 239 million bushels. On August 1, 79 million bushels of grain were already in store in these elevators, leaving only something like 160 million bushels of space for the new crops. With allowance for estimated disappearance out of the elevators between August 1 and the close of navigation, it has been calculated that the storage space might (under favorable conditions) be adequate to receive deliveries of about 260 million bushels of wheat by or shortly after the close of navigation and of about 285 million before the reopening of navigation on or about May 1. (Estimates of James Richardson and Sons, *Weekly Grain Letter*, Sept. 5, 1940.) These estimates, admittedly optimistic, suggest that the Prairie Province wheat crop of 534 million bushels must necessarily be marketed at a very slow rate.

<sup>3</sup> In 1939-40, deliveries of wheat to the board at the guaranteed minimum price were limited to 5,000 bushels per farmer.

CHART 3.—NORTH AMERICAN AND AUSTRALIAN VISIBLE SUPPLIES, WEEKLY FROM JULY 1939, WITH COMPARISONS\*



\* Weekly data for certain series summarized by months in Table IV.

wheat quota to 8 bushels. Oats and barley, previously under quotas, may now be marketed freely. This year farmers can sell wheat without limit<sup>3</sup> to the Wheat Board at the basic minimum price of 70 cents per bushel for No. 1

Northern, in store at Fort William—Port Arthur or Vancouver, and they will receive storage payments on wheat stored on farms.

**Southern Hemisphere exporters.**—Excessive rains in Argentina prevented the seeding of as large a wheat area as had earlier seemed in prospect and materially lowered the early condition of the growing crop. In mid-September, the sown wheat area was officially estimated at 17.0 million acres, 4 per cent below last year's moderately small sowings. On the estimated area for 1940, an average yield per acre of wheat would result in a crop of 206 million bushels. This does not differ much from the Argentine crop approximation of 190 million bushels recently published by the United States Department of Agriculture; and we take a rounded figure of 200 million bushels as a reasonable summarization of present uncertain prospects. At this figure, the Argentine harvest would be 80 million bushels larger than last year's exceedingly poor crop; but it would still be materially below the average for the preceding decade.

In Australia, wheat sowings for 1940 are believed to have been slightly reduced from last year as a result of drought and prevailing low wheat prices. If the reduction amounted to 2 per cent, the crop would approximate 154 million bushels under conditions of average yield. Actually, however, the yield is expected to be materially below average in reflection of prolonged drought. Private forecasts now seem to center around 110 million bushels, while the current approximation of the United States Department of Agriculture is 120 million. Since the Australian crop has shown remarkable powers of recovery in some former years we prefer to accept the higher of these two figures as our own guess. This suggests that the present outlook is for a crop materially below average and reduced by roughly 90 million bushels from the near-record outturn in 1939.

Experience shows that Southern Hemisphere harvests may be very different from September forecasts. However, if this year these crops should turn out about as now suggested, total wheat supplies would be small in Argentina but relatively large (in reflection of an extremely heavy carryover) in Australia.

**The Orient.**—Now estimated at 403 million bushels, India's 1940 wheat crop is roughly equal to her record 1938 harvest and appreciably larger than any other previous crop.

Japan, also, has reported a bumper wheat harvest this year; but the high Japanese crop estimate is regarded as too optimistic by the Shanghai office of the United States Department of Agriculture,<sup>1</sup> and in any case it is partly offset by low private estimates for Manchukuo and Chosen. China is believed to have secured a somewhat larger wheat crop in 1940 than in any of the three preceding years of low outturn; yet the estimated Chinese production is still materially below crop averages for earlier years. In total, Chinese and Japanese-controlled wheat supplies (including carryovers) are probably no larger this year than last, and may, in fact, be slightly smaller.

#### RECENT PRICES AND SPREADS

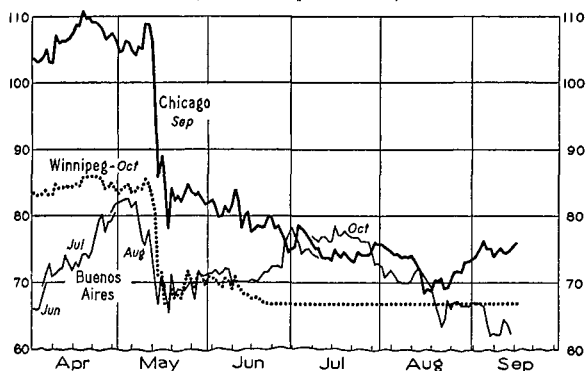
With the invasion of Belgium on May 10 and the immediate closure of the Antwerp grain market, the last semblance of a free international import market for wheat disappeared. In exporting countries, the three major futures markets—Chicago, Winnipeg, and Buenos Aires—remained open; but not one of these functioned as a true "international" market, freely reflecting the balancing of traders' opinions on world demand-supply conditions. Chicago prices continued on a domestic basis, despite evidence of heavy domestic wheat supplies, largely as a result of the government's loan program. Winnipeg prices were early influenced, and from late June determined, by the legal minimum-price levels established at the request of the Canadian government. Buenos Aires prices primarily reflected the growing shortage of Argentine supplies, with some influence exerted at times by government-decreed minimum-price limits. The major price developments in these three markets from April 1 are shown in terms of daily closing prices of specified futures in Chart 4.

**Argentine and Canadian prices.**—At Buenos Aires, expansion of the Argentine wheat ex-

<sup>1</sup> See *Foreign Crops and Markets*, Aug. 26, 1940, p. 239.

port movement in early April (Chart 1, p. 4), decline in ocean freight rates for neutral vessels, and a continued good demand for the remaining small supplies of Argentine export wheat were associated with an advance in wheat prices which continued almost uninterrupted for about five weeks. What appears to have been a normal reaction on May 8-9 was greatly extended over the next few days by reports of the invasion of the Netherlands and Belgium on May 10 and subsequent news of striking German successes. The invasion brought cancellation of many Dutch and Belgian contracts for Argentine grain, and was promptly interpreted as restricting the prospective export outlet.

CHART 4.—WHEAT FUTURES PRICES, DAILY  
FROM APRIL 1940\*  
(U.S. cents per bushel)



\* Closing prices, from Chicago Daily Trade Bulletin and Winnipeg Grain Trade News.

The net price decline in Buenos Aires from May 7 to May 18 amounted to about 16 cents—less than at Winnipeg and much less than at Chicago, but still disturbing enough to induce the Argentine government to take steps to limit further weakness. As from May 21, daily price fluctuations in Argentine wheat markets were limited to 50 Argentine cents per quintal (roughly 4 American cents per bushel). On May 28 the President of Argentina decreed that transactions in cereals and seeds should not take place in the future at prices lower than the registered closing quotations on May 27. Although this measure did not provide for governmental purchases of wheat at the specified minimum prices, and was therefore regarded by many in the trade

as foredoomed to failure,<sup>1</sup> there appears to have been little, if any, illegal trading in wheat below the minimum levels. In fact, throughout most of June and July, Buenos Aires wheat futures sold at prices substantially above the specified minima, mainly in reflection of the tight domestic supply position and evidence of declining new-crop prospects.<sup>2</sup> These two factors finally led the Argentine government on July 30 to ban further wheat exports, except under permit—a move which was followed by a price decline of roughly 5 cents per bushel.

With subsequent improvement in growing conditions in Argentina, increasing evidence of record exportable supplies of wheat in North America, further intensification of the European war and the blockade, and governmental removal of the fixed minimum prices on Argentine grains on August 19, Buenos Aires prices declined again after mid-August, falling to the lowest levels since March. Almost immediate partial recovery was followed by stability through September 5, when prices turned downward again on official confirmation of improvement in Argentine crop conditions during August. As of mid-September, Buenos Aires futures are below the lows of mid-August, but still above those of March.

Wheat prices at Winnipeg, having moved within a narrow range for about five months,<sup>3</sup> turned up slightly in early May on the first reports of Germany's invasion of the Low Countries, then broke precipitously (under the leadership of Chicago) as the war increased in intensity and the implications of the invasion became clearer. The May official crop reports for the United States and Canada contributed to the general bearishness, but were of negligible importance as compared with the news from Europe. From May 10 to 18 Winnipeg prices declined about 19 cents (23 per cent) to levels which had prevailed prior to

<sup>1</sup> See *Times of Argentina*, June 3, p. 21 and June 10, pp. 22-23.

<sup>2</sup> During part of this period there was also some further softening in "neutral" freight rates, but neutral vessels willing to accept tonnage for shipment to Europe were so scarce that their reduced charges could not have had much, if any, effect on Argentine wheat prices.

<sup>3</sup> See our last survey of the wheat situation, *WHEAT STUDIES*, May 1940, XVI, 378-80, 384.

the spectacular advance of November–December 1939. There, as in United States markets, exchange officials at the instigation of the government ruled that subsequent sales of grain futures should not be made at prices below the closing quotations on May 17 (May 18 in the United States).

The establishment of minimum prices, increased mill and export buying of wheat, and strength at Chicago tended over the next two weeks to keep Winnipeg prices somewhat above the legal limits. During this period appreciable sales of Canadian wheat and flour were made almost daily to the United Kingdom; and on June 1 the British Cereal Import Committee purchased 50 million bushels of wheat futures from the Canadian Wheat Board at a price several cents above that registered on the Winnipeg exchange during the same day.<sup>1</sup> This large sale had little market effect: Winnipeg futures continued to fluctuate within a narrow range, finally moving downward to the legal minimum limits on June 20–25.

<sup>1</sup> This sale was taken to represent "a new departure in marketing policy on the part of the Canadian Wheat Board. Except for one occasion a few days before the outbreak of war, when a direct sale of something less than 10 million bushels was made to the British government, the Board . . . [had] conducted its operations through the Winnipeg exchange, offering wheat for sale on both the cash and futures markets at prices determined in those markets." (James Richardson and Sons, *Weekly Grain Letter*, June 5, 1940.) However, even under the new 50-million-bushel sale, the exchange of cash wheat for futures was left to the regular trade.

<sup>2</sup> This was apparently the second largest sale ever negotiated, smaller only than the Australian sale of 3 million tons of wheat to the Royal Commission on Wheat Supplies in 1916.

The price on the recent sale was not announced; but since the Canadian Minister of Trade stated that the 15-cent wheat-processing tax, that had just gone into effect in Canada, represented the government's attempt to make the domestic price of wheat commensurate with the price being paid by Great Britain, trade sources opined that the British purchase probably specified a price in the neighborhood of 85 cents. (See James Richardson and Sons, *Weekly Grain Letter*, Aug. 7, 1940.)

<sup>3</sup> On June 26 not a single transaction in wheat futures was recorded on the Winnipeg exchange, and on various days since that date there has been complete absence of trading in at least one of the listed futures.

<sup>4</sup> For the schedule of minimum cash prices effective from June 26 to December 31, see Dominion Bureau of Statistics, *Monthly Review of the Wheat Situation*, July 30, 1940, p. 6.

The persistent weakness at Winnipeg after June 11 was associated with bearish North American crop reports and developments, news of the collapse of France, and declining prices at Chicago. Since June 25 no Winnipeg future has sold above its fixed minimum price—not even temporarily on August 2 when announcement was made of a new sale by the Wheat Board of 100 million bushels of wheat futures to the United Kingdom at prices well above the market level.<sup>2</sup> Throughout the same period, trading in wheat futures has been notably—probably even unprecedentedly—light; and mills and elevators have faced exceptional difficulties in connection with hedging operations. Confronted with a complete lack of demand for wheat futures on June 26,<sup>3</sup> country elevator companies instructed their agents to cease purchasing wheat immediately; and to accept wheat only for future sale on the open market at the farmer's own risk, or for delivery to the Wheat Board up to 5,000 bushels for each farmer, or for co-operative marketing at an initial payment of 56 cents per bushel. On the same date, at the request of the government, the Council of the Winnipeg exchange established minimum prices for contract grades of cash wheat "in store" at Fort William or Port Arthur at levels consistent with those previously established for wheat futures.<sup>4</sup> These basic minima as well as those for futures were reduced roughly 3 cents per bushel effective September 18.

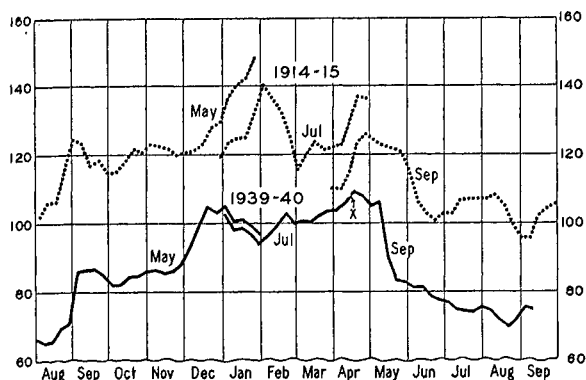
**United States.**—It is readily apparent from Chart 4 that wheat price changes at Chicago during April–September 1940 were much larger than corresponding changes at either Buenos Aires or Winnipeg. Moreover, because of the nature of the domestic factors which were operating to influence Argentine and Canadian prices during this period, the futures market at Chicago probably reflected better than did either of the other markets the changing aspects of the international wheat position, affected as that was by both military and crop developments.

The course of Chicago wheat prices over the past five months can be seen in better perspective in Chart 5, where it is shown as part of the longer crop-year movement. For comparative purposes we have added the price

curve for 1914-15—the first year of the World War.

CHART 5.—COMPARISON OF CHICAGO WHEAT FUTURES PRICES, WEEKLY, 1914-15 AND 1939-40\*

(Cents per bushel)



\* Prices from the Chicago Daily Trade Bulletin; in 1914-15 based on weekly averages of daily highs and lows; in 1939-40 based on weekly averages of daily closing prices.

The striking similarity of price movements in 1914-15 and 1939-40 is especially remarkable in view of the contrast between the wheat supply positions of the two years and the large differences between the causes of the similarly timed price movements. In 1914-15 the world's supply of wheat was relatively short; European countries in particular had deficient supplies; and the only large exportable surplus of wheat was in the United States.<sup>1</sup> In 1939-40 these factors were reversed: there was a record world wheat surplus; European countries were well supplied with wheat; and huge exportable stocks existed in each of the four major exporting countries and in the Danube basin.

The similarity of the major price movements in 1914-15 and 1939-40 is attributable mainly to "happenstance"—to the similarity of timing of different bullish and bearish developments in the two years. In both years wheat prices first moved up sharply in late August and early September. In 1914 this re-

flected the clearing away of financial and shipping difficulties which had been seriously restricting wheat exports from the United States, enormous foreign purchases of American wheat for export (partly consequent on the disappearance of Russia as a major exporter), and speculative public buying of wheat futures in response to these evidences of foreign demand. In 1939, there was also heavy speculative buying of wheat by the general public; but this time the speculation was without firm foundation in either the domestic or foreign wheat positions, and it seems to have been based almost wholly upon expectations of great general price advances such as were not expected when war broke out in 1914.

Again in December-January similar strong upward price movements resulted from quite different stimuli. In 1914 a new wave of heavy foreign buying of American export wheat was the primary strengthening factor, with crop news of relatively minor significance;<sup>2</sup> whereas in 1939 the corresponding upward movement was based mainly on crop reverses in Argentina following unprecedented deterioration in prospects for winter wheat in the United States, and revival of "war-price" and "inflation" talk. Finally, the striking price declines in the spring of 1915 and 1940 reflected the prospective reversal of the earlier price-supporting conditions which were themselves so different in the two years. In 1915 the price decline rested mainly on prospective easing of the domestic and foreign wheat position through bumper new harvests, whereas in 1940 the decline was based mainly on the turn of military events in Europe and its dampening effects on speculative hopes.

During the first nine months of 1939-40 an element of major market importance was the fact that dealers, traders, and the general public were more or less constantly expecting history to repeat itself in the form of higher "war prices" for wheat. The reasoning behind this expectation was doubtless quite diverse—ranging from unreasoned hunches or guesses based on World War experiences, to detailed analysis of existing prospects for monetary inflation and for tightening of the international wheat position under conditions of prolonged warfare. In any case, the effect

<sup>1</sup> See M. K. Bennett, "Wheat and War, 1914-18 and Now," WHEAT STUDIES, November 1939, XVI, No. 3.

<sup>2</sup> By this time, the virtual failure of the Australian crop had been recognized and discounted; and "bullish" crop news was confined mainly to moderately adverse reports of harvesting conditions in Argentina.

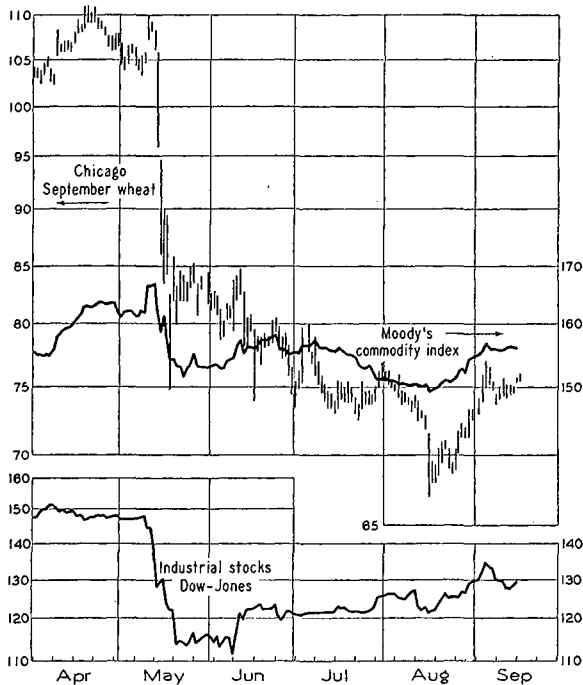


was the same—relatively heavy speculative holding of wheat, and at times speculative buying and the bidding up of wheat prices. Speculative holding by farmers was made much easier than usual by the government's wheat-loan program.

Against this background of "war psychology" came news in early April of the spread of war to Scandinavia, and then on May 10 of the invasion of Belgium and Holland. To these reports, United States wheat and other commodity markets responded by rising for a few days (Chart 6). But when the German

CHART 6.—CHICAGO SEPTEMBER WHEAT PRICES AND INDEX NUMBERS OF PRICES OF SENSITIVE COMMODITIES AND STOCKS, DAILY FROM APRIL 1940\*

(Cents per bushel; per cent; logarithmic vertical scales)



\* High and low prices of the Chicago future; index of closing prices of 15 sensitive commodities, base December 1931 = 100, compiled by Moody's Investors Service; index of closing prices of 30 industrial stocks, compiled by Dow-Jones News Service. The scales represent a change of 10 per cent in stocks prices by the same vertical distance as a change of 5 per cent in either the wheat price or the Moody index.

army made unexpectedly rapid headway against the Dutch and Belgian forces, the prospective effects of German victory in terms of a shortened war and of prompt loss of import markets sprang into prominence in the

"market-talk" of traders and speculators. At the same time, publication of the official North American crop reports suggested the probability of larger wheat yields in North America than had previously been anticipated.

These developments, but particularly the foreign situation, brought about an extensive revision in trade calculations of the wheat outlook—one of the most striking short-time changes in general market judgment that has ever taken place in the Chicago wheat pit. Chicago wheat futures prices weakened moderately on Monday May 13, then broke 20 cents over the next two days, dropping by the full 10 cents permitted daily under the prevailing market rules. A slight rally on May 16 was not sustained; and the decline persisted through May 18, when the directors of the Chicago exchange, at the request of Secretary Wallace, established minimum grain prices at the closing levels of that day.<sup>1</sup>

From May 11 to May 18 Chicago futures prices declined by approximately 30 cents per bushel, or 27 per cent. In both absolute and percentage terms, this was the greatest *general decline*<sup>2</sup> of Chicago wheat futures ever witnessed during seven days, except in May 1917 and on the downward movement of commodity prices in July and November 1920. None of the three earlier spectacular breaks was reasonably comparable with that of May 1940; for the decline in May 1917 was largely a reaction from an equally striking speculative advance that had taken place during the two or three preceding weeks, and the declines in July and November 1920 were part of the drastic postwar adjustment of commodity prices from the highly inflated levels of the World War period. Nor was the slightly smaller price decline in July 1933<sup>3</sup> (25 cents

<sup>1</sup> Only twice before in the history of the Chicago Board of Trade had minimum price limits been fixed to check price declines—in 1917 and in 1933.

<sup>2</sup> On at least one previous occasion—May 1898—the nearest future, though not the other futures, declined in the delivery month by considerably more than 30 cents in seven days. This decline was associated with collapse of the famous "Leiter corner."

<sup>3</sup> The two-day decline in July 1933 amounted to 25 cents as contrasted with the maximum two-day decline of only 20 cents in May 1940; but the latter was limited by exchange regulations forbidding daily price changes in excess of 10 cents per bushel.

over two days) fairly comparable, since that represented a reaction from an extreme speculative price rise that had immediately preceded it.

The precipitous break in Chicago wheat futures prices in May 1940 thus stands out as unprecedented. Never before had Chicago prices declined so much in such a short time from a price level that had changed but little over the preceding four or five months. The narrow range of prices from mid-December to early May 1940 suggests that the prevailing level of prices had become accepted by traders as reasonably discounting the known market facts. But when, in early May, the facts changed moderately, the price views held by traders changed very markedly and abruptly. It is true that the outlook for the United States wheat crop had improved and that German successes threatened to cut off import markets that annually take 60 to 65 million bushels of wheat. But Chicago prices had not wavered at their former level—30 cents higher—when the known facts had included evidence that (1) United States exports would be almost negligible in 1939–40, (2) the North American wheat carryover of 1940 would be heavy, and (3) existing world wheat stocks were larger than ever before in relation to expected wheat utilization.

How, then, can one account for the large, abrupt decline in Chicago wheat prices in early May? Apparently the major change was not in the commodity position or in traders' calculations of that position, but rather in market sentiment as it related to anticipations of higher wheat prices resulting from the disorganization of production and from the general price inflation likely to be associated with a prolonged war. As the prospects for a long war seemed suddenly to fade, traders paid increased attention to the commodity position which was itself bearish.

This view might suggest that other sensitive commodity markets, and the New York stock market as well, should have been similarly affected by the European developments of early May. Chart 6 shows that on the average both commodity prices and industrial stocks prices did decline markedly at this time. But the commodity price average, which

at the onset of war had advanced almost as much proportionally as the price of wheat, declined considerably less than Chicago wheat futures in May; and the Dow-Jones industrial stocks average, which normally makes larger swings than wheat prices in response to common market influences, in May showed about the same proportional weakness.<sup>1</sup> The more moderate declines registered by the average commodity and stocks indexes is not surprising in view of several pertinent facts: (1) most commodity prices had moved downward before the first of May to levels materially below the speculative peaks of September–December 1939, whereas Chicago wheat was selling in late April and early May at the highest level since October 1937; (2) the wheat commodity position had been getting increasingly bearish without reflection in the Chicago market; (3) some imported commodities, such as tin and silk, rose in value when the German invasion of Holland threatened to produce complications interfering with the sources of their supply; and (4) a few domestic commodities, such as corn, were so effectively supported by the American government's agricultural program that they declined very moderately or not at all.

One other feature of the Chicago wheat price decline in early May is worthy of attention—the course of open commitments in wheat futures over that period. Broadly, two groups of persons determine the volume of the open interest in the major wheat futures markets in the United States—hedgers and speculators. By the early fall of 1939, the government's wheat-loan program had gotten so well under way that a large amount of wheat that would otherwise have been hedged was lying in store unhedged under government loans. The loan program thus tended to reduce the volume of hedging; and at the same time it operated to discourage speculation.<sup>2</sup>

<sup>1</sup> It should be noted that Chart 6, like similar charts in previous "Surveys," shows stocks prices on a scale such that a 20 per cent change in stocks prices is represented by the same vertical distance as a 10 per cent change in wheat prices or in the commodity index, in recognition of the usual greater sensitiveness of stocks prices.

<sup>2</sup> Thus, in September–October 1939, the volume of open interest in wheat futures in the four major futures markets in the United States represented only

The total amount of wheat held by the government under loan apparently rose to a peak in late November or early December,<sup>1</sup> and thereafter is reported to have declined monthly as follows, in million bushels, from December 31 to June 29: 161, 151, 136, 106, 65, 14, 10. These official figures, as of the end of each month, clearly indicate that the amount of wheat taken from under government loan for private marketing was relatively small during January–February and markedly greater during March–May.

As this wheat was marketed, the open interest in wheat futures in the major markets increased sharply; it was 113 million bushels on February 20, 122 million on March 20, 153 million on April 20, 167 million on April 30, and a maximum of 168 million on May 8. To a considerable extent, this striking increase probably reflected, on the selling side, hedges against the newly marketed wheat and, on the buying side, speculative purchases of futures.

about 60 per cent or less of the total United States visible supply plus the approximate amount of outstanding mill hedges. Over the six preceding years for which estimates are available, the lowest corresponding percentage was 80 in December–January 1938–39.

<sup>1</sup> According to a weekly release of the Federal-State Market News Service, Sept. 7, 1940, the peak was reached in January at 167 million bushels.

<sup>2</sup> The *Northwestern Miller* reported that Northwestern mills sold flour amounting to 315 per cent of capacity during the week ending May 18, and southwestern mills to 255 per cent of capacity.

<sup>3</sup> Various factors appeared to market commentators to account for the improved prices of May 20–29: the establishment of minimum price limits, the announcement on May 20 of the federal wheat-loan program for 1940, reports of black rust development in the Southwest, and continued heavy, though reduced, flour purchases. These doubtless helped market sentiment, but the shake-out of weak holders during the preceding period had perhaps in any case set the stage for some upward reaction.

<sup>4</sup> The average daily volumes of trading in wheat futures on all United States futures markets fell to 17.3 million bushels in June, 19.0 million in July, and 16.7 million in August—all the smallest figures recorded for those months since the World War. A similar lack of speculative interest in the New York stock market induced New York stock exchange officials in August to have a special study made of possible solutions to the current dullness.

<sup>5</sup> The entrance of Italy into the war on June 10 and the collapse of France on June 17 reduced the freely importing countries of Europe to the British Isles, Spain, Portugal, and Greece, with Finland, Sweden, and perhaps Switzerland ranking as partially free.

Moreover, the strength of the speculative element is implied in the rise of futures prices during most of this period. During the last days of April and in early May, however, hedges were not absorbed by the markets as willingly as before, and prices weakened slightly. Then came the big price break of May 11–18: speculators hastened to liquidate, mills bought in hedges against heavy sales of flour,<sup>2</sup> and some cash grain dealers probably bought back their hedges because of the attractiveness of the low prices. These developments were reflected in a drop of 47 million bushels in the total open interest in wheat futures during the eight days of major price decline. Moreover, despite some temporary recovery in American wheat futures prices, the open interest declined by 13 million bushels more during the following week.

Although on May 20 Chicago futures prices closed 5 to 6 cents above the closing quotations on May 18 (by then established as the legal minimum figures), this improvement was not long sustained.<sup>3</sup> With speculative interest close to the lowest level in twenty years,<sup>4</sup> wheat prices remained relatively stable through May 29. Then they drifted irregularly downward over the next three months under the influence of increased North American crop estimates (pp. 16–17), the marketing of new-crop wheat in the United States, and developments in Europe which further restricted the export market<sup>5</sup> and seemed to many to threaten the security of the United States itself. On June 14 minimum price requirements were withdrawn in United States markets, and several days thereafter wheat futures prices first dipped below the previous limits. After temporary slight recovery, the downward trend was resumed with a net loss by mid-August of about 15 cents per bushel as compared with May 20.

One factor in particular—the federal wheat-loan program—operated strongly to limit the June–August decline. Since this program provided a loan value on eligible No. 2 Hard or Red wheat of 77 cents per bushel at Kansas City and 81 cents per bushel at Chicago, huge quantities of the newly harvested grain were not offered for sale at the current low prices but were put into storage unhedged for im-

mediate or future use as collateral under governmental loans. Observers estimated that 50 to 60 per cent of the total marketings would probably be so stored, with the proportion lowest in the eastern soft wheat region, moderate in the Pacific Northwest, and highest in the Great Plains region.<sup>1</sup> Many elevators, attracted by the possibility of earning over 8 cents per bushel storage charges on loan wheat, tended to restrict their own operations and willingly accepted the heavy new-crop offers on a storage basis. Temporary storage congestion developed in late July at Kansas City, and throughout August congestion constantly threatened to develop at various other leading terminals.<sup>2</sup>

Much less important than the loan program, but worthy of mention as a minor price-supporting factor in a thin market, were the "relief purchases" of flour made by the Federal Surplus Commodities Corporation during June and early July.<sup>3</sup> In total, these purchases apparently amounted to 1.5–2.0 million barrels.

From the lows of mid-August, Chicago futures prices moved steadily upward for three weeks to about the average level in July.<sup>4</sup> This recovery was associated with increased market confidence based on the strength of British resistance, and with some market talk of the

possible development of inflationary effects from the American defense program—factors that were also reflected slightly in stock prices at New York and in indexes of wholesale commodity prices (Chart 6). Domestic wheat markets felt the added influence of an improved mill demand and the lack of normal quantities of "free" wheat; and they showed virtually no trade concern over the increased official crop estimates for the United States and Canada issued in early September.

*North American price spreads.*—The major change in intermarket price relationships in North America during May–September was the striking advance of Winnipeg prices relative to prices in United States markets (Chart 7). On the spectacular break of early May, Winnipeg futures prices declined less than United States futures (which had previously been better maintained by "war psychology"); and after June 25 prices at Winnipeg remained stationary at the legal minimum limits while prices in United States markets drifted steadily downward. The artificial support afforded the Winnipeg market by the minimum price regulations was probably almost wholly responsible for the net change of 6 cents in the Chicago–Winnipeg spread after June 25.

Changes in price relations among United States futures markets were small during May–September. Hedging pressure caused a slight relative weakening of the Kansas City future from mid-June to mid-August. At Minneapolis, prices recovered somewhat in May from the uncommonly low relative position to which they had fallen in April,<sup>5</sup> advanced further in early July on adverse crop reports, and then declined again to about mid-August as prospects for a large spring-wheat crop became more definite. During the last three weeks of August the near futures at both Kansas City and Minneapolis advanced in relation to the Chicago September, but relations among deferred futures were little affected.

Deferred futures stood consistently above prices of nearer futures at Winnipeg—after June 25 in reflection of the differentials established under the minimum price provisions. Also in reflection of the government's price regulation, No. 1 Northern wheat sold

<sup>1</sup> According to the latest report of the CCC, 142.8 million bushels of 1940 wheat were held at collateral against government loans on Sept. 18, 1940. This compares with 103 million bushels as of the same time last year.

<sup>2</sup> On August 1 stocks of wheat in Kansas City public elevators totaled 41.9 million bushels. This was a new high record but it was promptly exceeded as these stocks rose to a peak of 42.7 million on August 9. Various Kansas City elevators are reported to have been carrying more than their rated capacity of grain. In the Northwest, the storage problem was somewhat complicated by current or expected pressure for storage of Canadian wheat in this country.

<sup>3</sup> In the main, these purchases were essentially orders for wheat, which were reflected in the wheat market: none appears to have resembled the exchange "purchase" of flour by the FSCC in late May, which involved the exchange of 59,967 million barrels of flour for 848,052 bushels of the Corporation's wheat.

<sup>4</sup> This advance was associated with a decline of roughly 20 million bushels in the total open interest in Chicago wheat futures. At 59 million bushels in mid-September, the volume of open commitments was the lowest since 1936.

<sup>5</sup> See our May survey of the wheat situation, *WHEAT STUDIES*, May 1940, XVI, 384.

at narrowing discounts under the October future during late June and again after August 1.<sup>1</sup>

In contrast, Chicago cash wheat commanded small premiums over the near future throughout the period under review; and despite a heavy wheat carryover—284 million bushels—May wheat sold above the July delivery and the July sold almost on a par with the September future. This unusual relationship of old-crop futures in a year of heavy carryover finds explanation in the combination of several extraordinary factors. (1) Through April a very substantial portion of the existing wheat stocks was carried under government loan; and as the remaining loans expired after April 30 considerable quantities of wheat were probably turned over to the Commodity Credit Corporation in payment rather than redeemed and marketed at the lower prices prevailing after mid-May. (2) A large part of the 85 million bushels of stocks carried over on farms on July 1 had probably been hopefully held unhedged through early May in anticipation of higher "war" prices, and after the May price break in anticipation of "reasonable" price recovery. The great bulk of the 114 million bushels of old-crop wheat held in country and city mills and mill elevators on July 1 was an offset against unfilled flour orders and therefore not hedged in any futures market. Thus, although the physical carryover of old-crop wheat was large on July 1, 1940, much of it was carried by persons or organizations willing to carry heavy stocks unhedged without the economic incentive of premiums on distant futures.

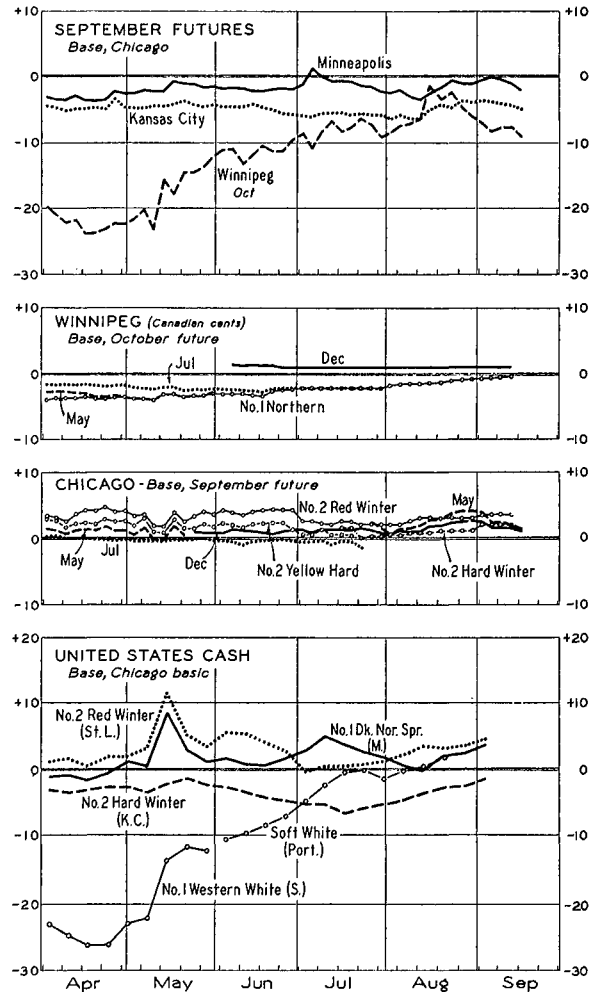
Among cash wheat markets in the United States there was no important sustained change in relationship except a rise in price

<sup>1</sup> The minimum cash price schedule fixed on June 20 by the council of the Winnipeg exchange at the request of the Canadian government provides for weekly price increases of  $\frac{1}{4}$  cent per bushel during August–September, unchanged prices from September 30 through November 9, and weekly increases of  $\frac{1}{4}$  cent per bushel from November 11 to December 2.

<sup>2</sup> It is noteworthy that as of April 18, only 7 million bushels of wheat were under government loan in Washington, Oregon, and Idaho. Moreover, as of July 1, the total carryover of *white* wheat in the United States was placed at the relatively normal figure of 21 million bushels.

of Pacific White wheats relative to Eastern wheats. Through early May, Western wheats at Seattle and Portland sold at such heavy price discounts that substantial quantities

CHART 7.—NORTH AMERICAN WHEAT PRICE SPREADS, FROM APRIL 1940\* (U.S. cents per bushel)



\* Price differences based on Tuesday and Friday closing quotations, except for United States cash wheats; these are weekly averages of daily quotations at Chicago (taken as the base), Seattle, and Portland, and weekly averages of all reported cash sales of the designated grades at Minneapolis, Kansas City, and St. Louis.

were moved by rail to Eastern distributing points. As the available supply of Pacific wheat<sup>2</sup> was reduced by Eastern rail shipments and subsidized exportation, Seattle and Portland prices strengthened materially. A considerable part of the relative strength developed on the May price decline, when the west-

ern prices, having had less speculative support earlier, moved downward much less sharply than did prices at Chicago.

#### ASPECTS OF THE OUTLOOK

The wheat outlook for 1940-41 rests principally upon three factors: (1) the huge wheat supplies now available in the world ex-Russia; (2) their marked concentration in three of the four overseas exporting countries; and (3) the future course of the present war.

Less can be known this year than usual about the size and distribution of the world's supply of wheat. Yet some of the most important features stand out clearly from analysis of information earlier assembled for individual countries and areas (pp. 11-18). These features may be summarized as follows.

In total, wheat supplies for the world ex-Russia for 1940-41 are likely to prove roughly as large as the record supplies of last year, despite a marked reduction in the 1940 world crop. In Canada the exportable surplus of wheat is extremely, embarrassingly heavy. The United States has a large, but by no means record, surplus. In Australia even a small harvest next November-December will be associated with large aggregate supplies, in reflection of heavy old-crop stocks. Argentina now seems likely to have only a small wheat surplus for 1940-41; but the reduction there will not keep total wheat supplies in the four major exporting countries from rising to a new record peak.

In contrast to the abundance of wheat in the overseas exporting countries and probably in Russia, the Near East, and North Africa, wheat supplies are relatively short in Europe ex-Russia. In parts of that area the wheat position is worsened by the unusually heavy concentration of supplies in the three major belligerent countries—Great Britain, Germany, and Italy (pp. 11, 14). The relation of wheat supplies to wheat requirements for food is also adversely affected by the more or less general shortage of supplementary foods—meats, fats, and dairy products—and by the fact that an appreciable amount of wheat and other food that would normally flow to market may this year be held back by farmers aiming to assure their own food and feed positions and hoping to benefit from future price advances.

Apparently gross food supplies (including wheat) are reasonably adequate this year in Greater Germany and Italy, but if overseas imports should remain restricted, the composition of diets even within these favored areas will be poorer than usual. Moreover, actual food shortage may persist in the cities of Germanized Poland. In France as a whole, despite seriously reduced crops, wheat supplies and food supplies in general may be adequate; but the German occupation, the artificial division of France, the disruption of normal transportation and trade facilities, and the concentration of refugees in the unoccupied area (which is not the chief wheat-surplus area) present difficult problems in food distribution.

Spain, Greece, and several other nations outside the German-controlled area will presumably need to supplement their domestic food supplies by imports of wheat and other food in 1940-41. Most of these countries are favorably situated near surplus-food areas from which supplies may flow; and, in any case, they would probably be able to obtain needed overseas imports on British navicerts, if they maintain their present status of nonbelligerency. Switzerland, despite normally heavy dependence on food and feed imports and a geographical location unfavorable for obtaining import under war conditions, will have adequate food supplies this year if her reserve stocks are as large as reported.

In contrast, the northwestern countries in the German-controlled area definitely face the threat of quantitative as well as qualitative deficiencies in food if the present blockade continues well into 1941. These countries—Belgium, the Netherlands, Denmark, and perhaps Norway—normally import considerably over half of their basic food and feed supplies; and with the exception of Norway, they seem not to have had large food supplies on hand at the time of the German invasion. Belgium's position seems potentially the most critical, with Holland's ranking next (pp. 14-15). The British Isles, too, are necessarily dependent this year, as always, upon foreign food imports; but so long as Britain can maintain the flow of shipping and can prevent her domestic economy from being shattered, the British diet should suffer only qualitative reduction.

*Prospects for trade, 1940-41.*—War events may largely determine how far the major wheat-deficit countries in Europe will be able to cover their customary requirements. The course of the war will presumably also have an important effect upon the size and distribution of year-end wheat stocks and upon the course and level of prices in various commodity markets. Yet at present we are not in a position to deal with the extremely important but unpredictable matter of war developments except in terms of possible alternatives.

Two such alternatives, in particular, now seem to warrant attention: (1) the possibility that Britain will successfully resist German destruction and invasion, and that the war will continue at least through the spring of 1941 with continued tight British naval blockade of the Continent; and (2) the possibility that the war will soon terminate in a German victory. Obviously, other possibilities might be considered, but at present these two appear of the greatest importance and the greatest immediate concern.

Should the present war be prolonged, with continued maintenance of the British blockade, most Continental importing countries, and certainly those in the German-dominated area, will be virtually cut off from overseas wheat. Some few—Greater Germany, Italy, and perhaps Greece and Switzerland—might draw some imports from the Danube basin. But this year the Danubian countries are not well supplied with wheat; and, Danubian farmers are likely to hold back substantial stocks under existing conditions of uncertainty. Indeed, it appears now that Yugoslavia, at least, will be a net importer.<sup>1</sup> With allowance for Yugoslavian imports, the Danube basin area seems unlikely, under the assumed circumstances, to export more than 25 to 35 million bushels of wheat to outside countries unless the Axis Powers should impose extremely heavy pressure to secure increased quantities of wheat. In any case, Germany would probably get the bulk of the Danubian exports, which would

<sup>1</sup> The Yugoslavian government recently put an export embargo on wheat and authorized the importation of one million quintals.

<sup>2</sup> Turkey is reported recently to have prohibited all grain exports except under permit (Broomhall's cable service, Sept. 13, 1940).

necessarily move almost entirely by rail and river.

Under continued blockade, another small group of European countries might perhaps draw something like 15-20 million bushels from northern Africa. If it should prove possible for France to import North African wheat, she would undoubtedly get the bulk of this surplus. Otherwise, it might go mainly to Spain, Greece, and perhaps Switzerland, if these countries technically remain neutral. Presumably the British government would exercise its influence to divert as much as possible of the northern African surplus to such "neutrals"—an influence that could be exercised partly through its issuance of navicerts.

Other wheats geographically accessible to Greece and Germany are the exportable supplies of Russia, Turkey, and perhaps Syria. We doubt that Turkey<sup>2</sup> and Syria together, despite their reported record crops, will export more than 5 million bushels; and we hazard the guess that Russia may not find political incentives strong enough to warrant other than small shipments (as a friendly gesture) to Germany and perhaps additional small shipments to Finland, Sweden, and/or Greece.

This would leave other European countries wholly dependent on overseas wheat or on the distribution of grain stored by Germany. Small quantities of overseas wheat might get past the blockade, but certainly not wheat from Canada, Australia, or the United States—the major surplus-holding countries. Other small quantities would probably be permitted under navicert to go to Spain, Portugal, Greece, Finland, and perhaps Switzerland. But in the absence of change in stated British policy, no food would be authorized to pass through the blockade to the leading deficit areas of northwestern Europe. If widespread food shortage should develop in those countries, pressure of public opinion in the United States for European food relief might lead to modification of the present British policy. However, the recent evidences of American sympathy with Britain's cause suggest that restraining influences would lessen the pressure for relief shipments which might weaken the British position and give indirect aid to Germany.

In the event of continued war and effective

blockade and in the absence of relief shipments of wheat, Continental importing countries would probably be able to secure not more than about 75 to 100 million bushels of import wheat in 1940-41, nor more than 25 to 35 million bushels of overseas wheat. Under the same assumptions, Britain might be in a position to maintain wheat consumption and year-end wheat stocks in the British Isles at about the same level as in 1939-40. This would apparently mean the importation of something over 200 million bushels of wheat into the British Isles. On the other hand, Germany might succeed, through her air force, in so crippling British ports and British storage facilities that importation of as much as 200 million bushels of wheat would be difficult or even impossible. In the absence of heavy losses to stored wheat, the British might maintain flour consumption with smaller imports, through elevation of extraction rates and reduction of wheat stocks: this would seem possible with imports of no more than 125 million bushels, if the newly imported wheat could be directed into consumption channels without serious losses.<sup>1</sup>

In total, European net imports of wheat in 1940-41 might possibly range between 250 and 300 million bushels under continued warfare and British blockade; but they would presumably run materially smaller if the German counterblockade of Britain should prove extremely effective. The quantity of exports needed to meet this importation would depend largely on the effectiveness of German-Italian attacks on British shipping; but in any case, larger exports would be required to cover losses in transit.

Should the present war speedily terminate in a German victory over Britain, the outlook for trade might or might not be considerably different. The settlement following German victory might mean either cessation of warfare in the western world, or continuation of it on different fronts. Assuming merely British defeat, one can only conjecture as to what might ensue with respect to continued belligerence of the dominions, the position of the United States on food-relief shipments or on belligerency, the activities of Soviet Russia on her Eu-

ropean frontier, the command of the British navy, the control of the seas and shipping, and the arrangements for use of international credits. It seems futile to discuss prospective wheat-trade developments in terms of persisting warfare on altered fronts.

If, however, defeat of Britain should mean cessation of warfare in the western world with removal of the threats of war, several inferences can be made concerning the prospective trade in wheat. Larger exports than under continuing blockade and insecurity might be obtained from the Danube basin, northern Africa, and probably Russia. The major holders of wheat stocks in Europe ex-Danube—Germany, Italy, and Great Britain—would presumably draw more heavily upon their stocks and less heavily upon foreign imports, while credit and relief arrangements would be made for larger wheat shipments to Belgium, the Netherlands, Denmark, and Norway. Switzerland, Spain, and Finland, if not Greece or Sweden, would probably take somewhat more wheat than under continued war conditions. In total, the reduced import takings of the three belligerents would probably go far toward offsetting the increased imports of the other countries; and *overseas* exports of wheat to Europe in 1940-41 might not be much larger than under continued warfare and effective British (but not German) blockade.

The *sources* of overseas exports, however, would probably be materially changed. Under peace, Canada would probably ship proportionally less wheat to Europe, and Argentina, Australia, and the United States proportionally more. Cessation of hostilities would free for export larger quantities of wheat in the more distant exporting countries and would enlarge the Continental market for Argentine wheat in particular. If the United States should decide to donate a considerable amount of wheat to European relief, she would find no important competitor in her way; and United States exports might be further expanded through higher governmental subsidies or as a result of an international agreement on export quotas. Otherwise, European countries would probably draw virtually all of their overseas imports from Canada, Argentina, and Australia.

<sup>1</sup> This would presumably leave British stocks still somewhat above a low-normal level.



With abandonment of the convoy system of shipments to Europe, and with reduction of insurance and probably ocean freight costs following return of peace, the spread in wheat prices between export and uncontrolled import markets would presumably be materially reduced. This might moderately stimulate non-European imports, which, in any case, would probably expand somewhat in response to increased efforts of the major exporting countries to dispose of their large surplus stocks. But the expansion in non-European takings could not be expected to be large.

These considerations may perhaps be interpreted to suggest that world net exports (using clearances from North America) might range between 450 and 500 million bushels in 1940-41 if the war is prolonged and the blockade continued as at present, while the total might be no more than 50 to 75 million bushels larger with cessation of hostilities in the western world. However, we wish to emphasize the fact that the existing uncertainties regarding the war and the size and distribution of European wheat supplies make quantitative trade forecasts almost valueless this year.

**Wheat utilization and stocks.**—In spite of the record or near-record large wheat supplies available to the world ex-Russia in 1940-41, world wheat utilization will probably not be exceptionally heavy, especially if the European war is prolonged. Light wheat consumption in Europe ex-Danube and very moderate consumption in the Danube basin will presumably go far to offset relatively heavy utilization in the four major exporting countries, India, and the Near East.

Table IX shows our tentative approximations of wheat utilization in the four major exporting countries, based on standing evidence regarding current wheat supplies. In these four countries as a group, we anticipate some small increase in wheat millings for domestic use in reflection of increasing populations, a slight reduction in seed use of wheat in response to current heavy supplies and low export prices, and an appreciable increase in wheat feeding mainly as a result of the recent abnormal relationship between corn and wheat prices in various parts of the United States.

The aggregate supplies of wheat for export

and carryover in the four major exporting countries appear likely to approximate 1,445 million bushels, if the Southern Hemisphere crops should turn out as now indicated. Hence, even if these four countries together should be able to export as much as 500 million bushels—a figure that now appears improbably high—they would have left at the end of the crop year some 945 million bushels to be carried forward into 1941-42. This would be roughly 175 million larger than the record carryover these same countries held in 1940. In other areas, however, 1941 stocks will presumably be considerably lower than they were this year; and the aggregate for the world ex-Russia may not be materially increased.

**Prices.**—In the two principal futures markets of North America, wheat prices now stand (in mid-September) above levels ruling in August 1939, prior to the beginning of the present war. Comparisons for the September and October futures, respectively, at Chicago and Winnipeg are shown below in terms of monthly average prices in cents per bushel, both as

	Quoted prices		Deflated prices <sup>a</sup>	
	Chicago (U.S. cents)	Winnipeg (Canadian cents)	Chicago	Winnipeg
August				
1914.....	96	106	137	160
1915.....	105	100	153	145
1930.....	90	94	107	112
1931.....	49	55	68	78
1932.....	52	58	80	86
1933.....	92	75	132	108
1934.....	104	87	136	120
1935.....	88	84	110	117
1936.....	112	101	137	133
1937.....	110	126	126	147
1938.....	64	69	82	91
1939.....	66	54	88	75
1940.....	73	74	95	90
September 20, 1940.....	78	70	100 <sup>b</sup>	85 <sup>b</sup>

<sup>a</sup> Chicago prices deflated by the U.S. Bureau of Labor Statistics index of wholesale commodity prices in the United States, and Winnipeg prices deflated by the Dominion Bureau of Statistics index of wholesale commodity prices in Canada. For both wholesale price indexes 1926 = 100.

<sup>b</sup> Our tentative approximations.

quoted and as deflated by wholesale price indexes for these countries.

In quoted cents per bushel, current North

American wheat prices are somewhat above the levels of August 1938 and 1939 and considerably above the "depression" levels of 1931-32. Moreover, in purchasing power, wheat is somewhat higher now than in any of those four earlier years, with the exception of 1932 and 1938 at Winnipeg. It may not be said that the current price levels represent traders' ideas of the international demand-supply position for wheat in 1940-41, for this position may well be more bearish than in several of the earlier periods of lower prices. Nor are present prices based largely upon speculative anticipation of inflation or of expanded import needs arising out of the war in Europe. Rather do the current levels mainly represent the influence of the minimum price regulations in operation in Canada and the early effect of the federal wheat-loan program in the United States.

So long as these measures are in force, Winnipeg wheat prices cannot legally fall below current values (after September 18, reduced about 3 cents from previous levels),<sup>1</sup> and Chicago prices are unlikely to decline materially. In fact, as the year advances, the Chicago December and May futures, now quoted at 77 $\frac{7}{8}$  and 78 $\frac{1}{8}$  cents, respectively, may well climb above the basic loan value of 81 cents for No. 2 Hard and Red wheat at Chicago,<sup>2</sup> if traders become convinced that the amount of

wheat likely to be freely marketed at current prices (rather than held by farmers for speculation or placed directly under government loan) may prove inadequate to meet expected demands. This anticipation would likewise tend to strengthen cash premiums, which have already tended to harden over the past few weeks. The influence of the loan program in stimulating speculative holding of wheat by farmers may be considerably greater than the reported wheat-loan figures would themselves suggest.

Temporarily, at least, changing war developments will probably also have an important influence upon the course of Chicago wheat prices. Recent market reactions suggest that most traders look upon serious British reverses as bearish and upon British gains as bullish. This may well continue to be the market-reaction pattern, in spite of growing expectation that early termination of the European war would be more likely to expand than to contract Europe's demand for and consumption of import wheat. But there may also be a tendency for market sentiment to respond less forcibly than in the past to changing war news.

Finally, Chicago wheat prices may be influenced during the next few months by any major swing in general market sentiment that may result from concentration of attention upon the early business effects and "inflationary" possibilities of the huge expenditures incident to the American national defense program. But strong advances above the wheat-loan values for the Chicago market may be checked by increased offers of wheat held by farmers for speculation or voluntarily withdrawn from government loan and by the possibility that the Commodity Credit Corporation will exercise its right to demand immediate settlement of some of the outstanding loans.

<sup>1</sup> Effective September 18, the minimum price of the October future at Winnipeg was reduced from 73 $\frac{1}{2}$  to 70 cents; the minimum for the December was cut from 74 $\frac{1}{2}$  to 71 $\frac{1}{2}$  cents; and the May was posted at 75 $\frac{1}{2}$  cents.

<sup>2</sup> In a precise calculation of the theoretical relation between loan values and the price of Chicago futures, interest and storage charges should be considered and account should be taken of the fact that No. 2 Yellow Hard, which is deliverable on Chicago futures without discount carries a loan value of only 79 cents.

*The authors are indebted to B. M. Jensen for the summary of crop developments in the United States and Canada and to other members of the Institute staff for counsel. The statistical tables were prepared by Rosamond H. Peirce and Marion Theobald, and the charts by P. Stanley King and Jean Hoover Ballou.*

# APPENDIX TABLES

TABLE I.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING AREAS, 1935-40\*  
(Million bushels)

Year	World ex-Russia <sup>a</sup>			United States	Canada	Argentina, Australia	Europe ex-Russia				French North Africa <sup>d</sup>	India	Others ex-Russia <sup>e</sup>	USSR
	Total <sup>a</sup>	Northern Hemisphere	Southern Hemisphere				Total	Lower Danube <sup>b</sup>	Mediterranean <sup>c</sup>	Others				
1935 ..	3,557	3,184	373	626	282	286	1,575	302	490	783	70	363	355	1,133 <sup>o</sup>
1936 ..	3,509	3,038	471	627	219	401	1,480	384	374	722	50	352	380	1,135
1937 ..	3,789	3,344	445	876	180	372	1,537	361	451	725	72	364	388	1,625
1938 ..	4,572	3,954	618	932	360	535	1,857	466	445	946	72	402	414	1,494
1939 <sup>f</sup> ..	4,192	3,788	404	755	490 <sup>o</sup>	330	1,703	453 <sup>h</sup>	462	788 <sup>h</sup>	100	371	443	.....
1940 <sup>f</sup> ..	3,986	3,582	404	784	561	320	1,400	325 <sup>h</sup>	441	634 <sup>h</sup>	75	403	443	.....
1940 <sup>f</sup> ..	3,916	3,512	404	784	561	320	1,330	295	441	594	75	403	443	.....

\* Data summarized from Table II (except for India and USSR). Figures in italics are in part unofficial approximations. Dots (.....) indicate no data available.

<sup>a</sup> Excludes China, Iran, and Iraq.

<sup>b</sup> Hungary, Yugoslavia, Rumania, Bulgaria.

<sup>c</sup> Portugal, Spain, Italy, Greece.

<sup>d</sup> Morocco, Algeria, Tunis.

<sup>e</sup> Not comparable with later years.

<sup>f</sup> As of about Sept. 20, 1940.

<sup>o</sup> Presumably underestimated; see p. 9.

<sup>h</sup> Danube increased, other Europe decreased, by 10-15 million bushels in comparison with earlier years by change in Hungarian-Czechoslovakian boundary.

<sup>h</sup> With allowance for recent boundary changes made by Russia.

TABLE II.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING COUNTRIES, 1935-40\*  
(Million bushels)

Year	U.S. winter	U.S. spring	Canada	Australia	Argentina	Uruguay	Chile	Brazil, Peru	Hungary	Yugoslavia	Rumania	Bulgaria	Morocco	Algeria	Tunis
1935.....	465.3	161.0	281.9	144.2	141.5	15.1	31.8	7.41	84.2	73.1	96.4	47.9	20.0	33.5	16.9
1936.....	519.9	106.9	219.2	151.4	249.9	9.2	28.6	8.36	87.8	107.4	128.7	60.4	12.2	29.8	8.1
1937.....	685.8	189.9	180.2	187.3	184.8	16.6	30.3	9.58	72.2	86.2	138.2	64.9	20.9	33.2	17.6
1938.....	688.1	243.6	360.0	155.4	380.0 <sup>a</sup>	15.5	35.5	....	98.8	111.3	177.2	79.0	23.2	34.9	14.0
1939 <sup>b</sup> .....	563.4	191.5	489.6 <sup>c</sup>	210.1	119.5	9.9	30.0	....	112.8 <sup>d</sup>	105.7	163.6	71.2	38.8	42.6	18.6
1940 <sup>b</sup> .....	555.8	227.7	561.1	120.0	200.0	....	....	....	....	....	109.8 <sup>d</sup>	....	....	....	....

Year	United Kingdom	Elre	France	Italy	Germany	Austria	Czechoslovakia	Switzerland	Belgium <sup>a</sup>	Netherlands	Denmark	Norway	Sweden	Spain	Portugal
1935.....	65.4	6.69	285.0	282.8	171.5	15.5	62.1	5.97	17.1	16.7	14.7	1.87	23.6	158.0	22.1
1936.....	55.3	7.84	254.6	224.6	162.7	14.0	55.6	4.47	17.2	15.4	11.3	2.09	21.6	121.5	8.7
1937.....	56.4	6.99	257.8	296.3	164.1	14.7	51.3	6.81	16.8	12.6	13.5	2.50	25.7	110.0	14.7
1938.....	73.3	7.40	372.9	297.3	205.0	16.2	66.7	7.81	22.0	15.9	16.9	2.64	30.2	96.0	15.8
1939 <sup>b</sup> .....	61.6	9.52	276.0	293.9	206.3 <sup>f</sup>	....	40.0 <sup>o</sup>	6.36	13.8	13.3	15.1	2.55	31.4	111.8	18.4
1940 <sup>b</sup> .....	....	....	....	268.2	....	....	....	....	....	....	....	....	....	121.3	....

Year	Poland	Lithuania	Latvia	Estonia	Finland	Greece	Turkey	Other Near East <sup>b</sup>	Egypt	Japan	Chosen	Manchukuo	Mexico	South Africa	New Zealand
1935.....	73.9	10.1	6.52	2.27	4.23	27.2	92.6	24.8	43.2	48.7	9.7	37.3	10.7	23.7	8.86
1936.....	78.4	8.0	5.27	2.43	5.26	19.5	141.6	20.3	45.7	45.2	8.2	35.2	13.6	16.1	7.17
1937.....	70.8	8.1	6.30	2.79	7.66	30.0	133.0	24.1	45.4	50.4	10.2	41.4	10.6	10.2	6.04
1938.....	79.8	9.2	7.05	3.14	9.40	36.1	156.1	27.3	45.9	45.2	10.4	34.3	11.9	17.1	5.56
1939 <sup>b</sup> .....	83.4	9.4	7.77	3.13	8.34	38.3	169.3	28.1	49.0	61.1	12.6	34.5	14.8	15.8	9.00
1940 <sup>b</sup> .....	....	....	....	....	....	34.2	170.1	....	49.8	61.3	....	30.9	12.9	14.0	....

\* Data of U.S. Department of Agriculture and International Institute of Agriculture. Figures in italics are unofficial approximations. Dots (.....) indicate no data available.

<sup>a</sup> Our approximation; see p. 4.

<sup>b</sup> As of about Sept. 20, 1940.

<sup>c</sup> See Table I, note g.

<sup>d</sup> 1939 boundaries.

<sup>o</sup> Including Luxemburg.

<sup>f</sup> Including the Sudeten area.

<sup>o</sup> Bohemia-Moravia and Slovakia.

<sup>h</sup> Syria and Lebanon, Palestine, Cyprus.

TABLE III.—WHEAT RECEIPTS IN NORTH AMERICA, MARCH–AUGUST 1940, WITH COMPARISONS\*  
(Million bushels)

Year	United States (13 primary markets)							Canada (country elevators and platform loadings)						
	March	April	May	June	July–June <sup>a</sup>	July	Aug.	March	April	May	June	July	Aug.–July <sup>a</sup>	Aug.
1935.....	4.7	6.4	8.3	10.0	160.1	28.9	48.2	8.1	6.6	5.6	9.3	12.6	228.2	13.3
1936.....	9.8	7.4	11.1	14.8	229.6	84.2	29.5	7.2	4.6	5.5	8.7	4.0	217.0	42.9
1937.....	7.6	8.9	7.6	19.4	218.1	111.9	62.2	5.8	4.2	4.1	3.6	3.1	161.7	20.5
1938.....	10.6	10.9	14.3	17.0	330.9	101.2	61.1	4.0	4.6	2.8	3.9	3.1	125.6	39.6
1939.....	13.7	16.0	25.5	44.0	382.8	99.0	43.9	5.5	5.1	5.0	5.2	8.0	290.5	54.0
1940.....	21.9	28.4	29.4	13.4	339.5	103.9	46.2	7.9	6.0	7.0	12.8	20.0	426.5	35.1

\* United States data unofficial, compiled from *Survey of Current Business*; Canadian data computed from official figures given in *Canadian Grain Statistics*.

<sup>a</sup> From 1934–35 to 1939–40.

TABLE IV.—WHEAT VISIBLE SUPPLIES, MAY–SEPTEMBER 1940, WITH COMPARISONS\*  
(Million bushels)

Date	Grand total <sup>a</sup>	Total four ex-ports	Total North America	United States grain		Canadian grain		Afloat to Europe	U.K. ports	Total U.K. and afloat	Aus-tralia	Argen-tina
				United States	Canada	Canada <sup>b</sup>	United States					
1940												
May 1.....	....	622.8	383.4	105.6	.7	259.3	17.8	....	....	....	126.5	112.9
June 1.....	....	580.3	370.0	97.7	.7	249.0	22.6	....	....	....	117.8	92.5
July 1.....	....	526.2	345.2	87.3	.6	233.4	23.9	....	....	....	111.5	69.5
Aug. 1.....	....	577.5	422.9	160.2	.0	235.6	27.1	....	....	....	98.5	56.1
Sept. 1.....	....	605.4	470.0	180.1	.6	257.8	31.5	....	....	....	92.2	43.2
Sept. 1												
1937.....	238.1	206.9	180.8	137.9	1.4	38.9	2.6	20.0	11.2	31.2	10.0	16.1
1938.....	293.2	237.0	184.2	133.7	.1	49.7	.7	39.6	16.6	56.2	13.8	39.0
1939.....	....	....	305.6	166.3	.6	131.5	7.2	29.9	29.0	58.9	13.5	....

\* Selected, for dates nearest the first of each month, from weekly data in *Commercial Stocks of Grain in Store in Principal U.S. Markets*, *Canadian Grain Statistics*, *Broomhall's Corn Trade News* (for Afloat to Europe, U.K. ports, and Australia), and *Boletín Informativo* for Argentina.

<sup>a</sup> Not comparable with totals formerly published, since a more inclusive series (official) is now employed for Argentina.

<sup>b</sup> Excluding, for comparability, stocks in transit by rail which are now included in officially published totals.

TABLE V.—UNITED STATES AND CANADIAN CARRYOVERS OF WHEAT, FROM 1935\*  
(Million bushels)

Year	United States (July 1)						Canada (July 31)						
	On farms	In country mills and elevators	Commercial stocks	In city mills <sup>a</sup>	Total in four positions	U.S. grain in Canada	On farms	In country mills and elevators <sup>b</sup>	In terminal elevators	In transit	In flour mills <sup>c</sup>	Total in five positions	Canadian grain in U.S.
1935.....	44.3	30.9	22.0	49.5	146.7	.0	7.9	53.8	126.6	12.9	.9	202.1	11.7
1936.....	44.0	21.9	25.2	50.6	141.7	.0	5.5	36.2	59.7	5.0	1.7	108.1	19.3
1937.....	21.9	11.5	9.0 <sup>d</sup>	40.4 <sup>d</sup>	82.8 <sup>d</sup>	.1	4.0	7.4	17.7	2.8	1.0	32.9	4.1
1938.....	59.1	30.6	22.2 <sup>d</sup>	40.8 <sup>d</sup>	152.7 <sup>d</sup>	.7	5.1	2.8	12.2	2.4	1.1	23.6	1.0
1939.....	90.4	36.6	64.1 <sup>d</sup>	61.1 <sup>d</sup>	252.2 <sup>d</sup>	.6	4.7	16.8	67.2	4.8	1.1	94.6	8.3
1940.....	85.5	33.7	84.2 <sup>d</sup>	80.7 <sup>d</sup>	284.1 <sup>d</sup>	.6	17.3	73.3	159.3	21.9	1.3	273.1	27.7

\* Official data of U.S. Department of Agriculture and Dominion Bureau of Statistics.

<sup>a</sup> Estimates of U.S. Department of Agriculture, based on stocks in city mills reported to the Census Bureau, raised to allow for stocks in non-reporting mills.

<sup>b</sup> Includes private terminal elevators and flour mills in Western Division.

<sup>c</sup> In Eastern Division only.

<sup>d</sup> Excluding new-crop wheat. See *The Wheat Situation*, August 1940, p. 2.

TABLE VI.—UNITED STATES FLOUR PRODUCTION, EXPORTS, AND NET RETENTION, MONTHLY, SEPTEMBER—AUGUST 1939-40, WITH COMPARISONS\*

(Thousand barrels)

Month or period	Production						Net exports and shipments to possessions			Estimated net retention		
	All reporting mills			Estimated total			1937-38	1938-39	1939-40	1937-38	1938-39	1939-40
	1937-38	1938-39	1939-40	1937-38	1938-39	1939-40						
Sept. ....	9,234	9,699	11,191	9,782	10,285	11,867	496	444	746	9,286	9,841	11,121
Oct. ....	9,446	9,634	9,428	10,006	10,216	9,997	533	572	663	9,473	9,644	9,334
Nov. ....	8,698	8,838	8,298	9,234	9,372	8,800	512	466	610	8,722	8,906	8,190
Dec. ....	8,168	8,416	8,119	8,670	8,925	8,610	510	607	464	8,160	8,318	8,146
Jan. ....	8,116	8,476	8,649	8,625	8,989	9,171	415	548	471	8,210	8,441	8,700
Feb. ....	7,572	7,757	8,025	8,047	8,226	8,510	430	698	557	7,617	7,528	7,953
Mar. ....	8,600	8,951	8,320	9,149	9,492	8,823	518	612	740	8,631	8,880	8,083
Apr. ....	7,834	8,244	8,269	8,334	8,742	8,769	481	802	476	7,853	7,940	8,293
May ....	7,739	8,516	8,514	8,207	9,030	9,028	559	853	485	7,648	8,177	8,543
June ....	8,474	8,440	7,682	8,986	8,950	8,146	457	671	309	8,529	8,279	7,837
July ....	8,507	8,432	8,504	9,021	8,942	9,018	447	988	446	8,574	7,954	8,572
Aug. ....	9,160	9,522	....	9,714	10,098	9,583 <sup>a</sup>	452	698	500 <sup>a</sup>	9,262	9,400	9,083 <sup>a</sup>
July-June .	100,974	104,638	104,448	107,147	110,963	110,761	5,649	7,172	7,207	101,498	103,790	103,554

\* Reported production and trade data from U.S. Department of Commerce, *Wheat Ground and Wheat Milling Products*, and *Statement No. 3009*. Total production and net retention are our estimates.

<sup>a</sup> Preliminary.

TABLE VII.—INTERNATIONAL SHIPMENTS OF WHEAT AND FLOUR, WEEKLY FROM MAY 1940\*

(Million bushels)

Week ending	Totals <sup>a</sup>	Shipments from							Shipments to Europe				To ex-Europe		
		North America	Argentina <sup>b</sup>	Australia <sup>c</sup>	South Russia	Danube <sup>d</sup>	India	Other countries	Total <sup>e</sup>	United Kingdom	Orders	Continent	Total <sup>e</sup>	Brazil	Others
May 4 ....	10.44	4.93	4.28	...	.00	1.23	.00	.00	8.89	...	...	...	1.55	...	...
11 ....	7.60	3.55	2.75	...	.00	1.30	.00	.00	6.54	...	...	...	1.06	...	...
18 ....	12.20	4.67	6.30	...	.00	1.23	.00	.00	10.27	...	...	...	1.93	...	...
25 ....	10.85	6.38	3.77	...	.00	.70	.00	.00	9.86	...	...	...	.99	...	...
June 1 ....	9.78	5.72	3.10	...	.00	.96	.00	.00	8.62	...	...	...	1.16	...	...
8 ....	9.59	4.90	3.26	...	.00	1.43	.00	.00	8.90	...	...	...	.69	...	...
15 ....	7.70	2.97	2.98	...	.00	1.75	.00	.00	6.54	...	...	...	1.16	...	...
22 ....	7.43	2.30	3.99	...	.00	1.14	.00	.00	6.38	...	...	...	1.05	...	...
29 ....	8.14	2.52	5.19	...	.00	.43	.00	.00	6.58	...	...	...	1.56	...	...
July 6 ....	7.34	3.18	3.42	...	.00	.74	.00	.00	5.25	...	...	...	2.09	...	...
13 ....	7.51	4.19	2.73	...	.00	.59	.00	.00	6.68	...	...	...	.83	...	...
20 ....	5.98	2.69	2.77	...	.00	.52	.00	.00	4.95	...	...	...	1.03	...	...
27 ....	7.74	3.95	3.34	...	.00	.45	.00	.00	5.50	...	...	...	2.24	...	...
Aug. 3 ....	7.22	3.42	3.59	...	.00	.21	.00	.00	5.26	...	...	...	1.96	...	...
10 ....	4.79	2.32	2.23	...	.00	.24	.00	.00	3.98	...	...	...	.81	...	...
17 ....	6.70	3.60	2.91	...	.00	.19	.00	.00	5.01	...	...	...	1.69	...	...
24 ....	5.01	2.18	2.74	...	.00	.09	.00	.00	3.62	...	...	...	1.39	...	...
31 <sup>e</sup> ....	5.47	3.48	1.77	...	.00	.22	.00	.00	4.35	...	...	...	1.12	...	...
Sept. 7 <sup>e</sup> ....	6.03	4.00	1.84	...	.00	.19	.00	.00	4.10	...	...	...	1.93	...	...
14 <sup>e</sup> ....	4.89	2.66	1.97	...	.00	.26	.00	.00	3.68	...	...	...	1.21	...	...

\* Here converted from data in Broomhall's *Corn Trade News*. Dots (...) indicate that data are not available.

<sup>a</sup> Excluding Australia.

<sup>b</sup> Including Uruguay.

<sup>c</sup> Weekly data not received after September 2, 1939.

<sup>d</sup> In mid-July Broomhall raised the Danube total for the crop year by 28 million bushels, without revision of the weekly figures.

<sup>e</sup> Preliminary.

TABLE VIII.—NET EXPORTS AND NET IMPORTS OF WHEAT AND FLOUR, MONTHLY FROM AUGUST 1939, WITH SUMMATIONS AND COMPARISONS\*

(Million bushels)

## A. NET EXPORTS (In parentheses, net imports)

Month or period	United States <sup>a</sup>	Canada	Australia	Argentina	Hungary	Yugoslavia	Rumania	Bulgaria	Morocco	Algeria	Tunis	India	USSR
Aug. ....	8.24	11.95	4.45	16.06	5.86	2.39	1.54	.48	...	...	.12	.17	...
Sept. ....	5.32	17.45	3.67	14.10	4.78	.43	1.70	.30	...	...	.01	.36	...
Oct. ....	3.89	18.78	5.74	14.76	5.06	1.38	2.97	.25	...	...	...	.38	...
Nov. ....	3.29	23.18	5.93	17.00	4.78	1.04	5.86	1.12	...	...	...	.62	...
Dec. ....	.54	38.46	3.25	17.67	4.74	1.32	4.59	.79	...	...	...	.22	...
Jan. ....	1.88	13.59	5.66	13.39	2.07	...	2.79	.76	...	...	...	.05	...
Feb. ....	3.22	9.10	7.52	10.81	.95	...	2.09	...	...	...	...	...	...
Mar. ....	6.32	11.83	...	11.55	...	...	2.36	...	...	...	...	...	...
Apr. ....	3.29	7.37	...	15.85	...	...	4.12	...	...	...	...	...	...
May ....	1.62	26.72	...	17.91	...	...	...	...	...	...	...	...	...
June ....	1.43	15.86	...	17.22	...	...	...	...	...	...	...	...	...
July ....	3.34	13.31	...	13.50	...	...	...	...	...	...	...	...	...
1939-40 ....	42.38	207.60	77.00 <sup>b</sup>	179.82	...	...	...	...	...	...	...	...	...
1938-39 ....	162.87	165.07	95.57	122.16	29.64	5.46	45.96	3.50	4.10 <sup>c</sup>	1.48 <sup>c</sup>	4.27	(1.28)	...

## B. NET IMPORTS (In parentheses, net exports)

Month or period	United Kingdom	Elre	France <sup>d</sup>	Italy	Germany <sup>e</sup>	Bohemia-Moravia	Switzerland	Belgium <sup>f</sup>	Netherlands	Denmark	Norway	Sweden	Portugal
Aug. ....	20.98	1.05	...	...	...	2.80	1.34	2.81	3.04	.43	.72	.23	.11
Sept. ....	...	...	...	...	...	...	1.68	2.38	1.65	.29	1.12	.14	...
Oct. ....	...	...	...	...	...	...	2.07	5.11	2.09	.51	1.04	...	.00
Nov. ....	...	...	...	...	...	...	2.15	5.20	2.95	.38	.99	...	.29
Dec. ....	...	...	...	...	...	...	2.29	3.59	2.32	.40	2.95	...	...
Jan. ....	...	...	...	...	...	...	...	2.76	1.94	.38	1.36	...	.04
Feb. ....	...	...	...	...	...	...	...	3.44	1.26	.44	1.04	...	.04
Mar. ....	...	...	...	...	...	...	...	1.75	3.81	...	...	...	...
Apr. ....	...	...	...	...	...	...	...	...	...	...	...	...	...
May ....	...	...	...	...	...	...	...	...	...	...	...	...	...
June ....	...	...	...	...	...	...	...	...	...	...	...	...	...
July ....	...	...	...	...	...	...	...	...	...	...	...	...	...
1939-40 ....	...	...	...	...	...	...	...	...	...	...	...	...	...
1938-39 ....	229.54	17.10	(9.24)	13.16	42.94	(1.33)	17.10	37.65	30.35	5.08	8.61	1.63	2.25

## B. NET IMPORTS (In parentheses, net exports)

Month or period	Poland	Finland	Greece	Turkey	Syria, Lebanon	Egypt	Japan	Manchukuo	China	Cuba <sup>g</sup>	Uruguay	South Africa	New Zealand
Aug. ....	...	.15	1.66	(.08)	(.02)	.02	(1.74)	2.82	2.84	.51	(.99)	.18	.31
Sept. ....	...	...	.92	(.01)	...	.01	(1.28)	3.28	.99	.69	...	...	.03
Oct. ....	...	...	.90	(.00)	...	.02	(.79)	1.35	2.60	.29	(.54)	...	.02
Nov. ....	...	...	.92	(.00)	...	.02	(1.37)	...	.22	.24	(.61)	.00	.02
Dec. ....	...	...	.66	(.00)	...	.01	(.70)	...	.45	.30	(.25)	.00	.04
Jan. ....	...	...	.60	(.01)	...	.03	(.04)	...	.11	.43	(.22)	...	.04
Feb. ....	...	...	.56	(.10)	...	.01	.49	...	.61	.45	(.04)	.05	.23
Mar. ....	...	...	...	(.06)	...	.00	(.59)	...	.71 <sup>h</sup>	.47	...	...	.09
Apr. ....	...	...	...	...	...	(.01)	(.08) <sup>i</sup>	...	2.93 <sup>h</sup>	.46	...	...	.04
May ....	...	...	...	...	...	...	(.80) <sup>i</sup>	...	2.32 <sup>h</sup>	.55	...	...	.22
June ....	...	...	...	...	...	...	.19 <sup>i</sup>	...	1.97 <sup>h</sup>	.36	...	...	...
July ....	...	...	...	...	...	...	...	...	...	.28	...	...	...
1939-40 ....	...	...	...	...	...	...	(7.00) <sup>b</sup>	...	17.00 <sup>b</sup>	5.03	...	...	...
1938-39 ....	(3.13)	2.30	13.00	(2.01)	(1.06)	.20	(9.82)	13.34	29.27	5.01	(4.62)	1.74	3.34

\* Data from official sources and International Institute of Agriculture. Dots (...) indicate that data are not available.

<sup>a</sup> Includes shipments to possessions.<sup>b</sup> Including our estimates for missing monthly data.<sup>c</sup> August-June.<sup>d</sup> Net trade in *commerce général*.<sup>e</sup> Including Austria.<sup>f</sup> Including Luxemburg.<sup>g</sup> Gross imports of flour from the United States.<sup>h</sup> Gross imports.<sup>i</sup> Including unofficial estimates for wheat grain imports.

TABLE IX.—WHEAT DISPOSITION ESTIMATES, ANNUALLY FROM 1935-36\*

(Million bushels)

Year	Domestic supplies			Domestic utilization				Surplus over domestic use <sup>c</sup>	Net exports	Year-end stocks
	Initial stocks	New crop	Total	Milled (net)	Seed use	Balancing item <sup>a</sup>	Total <sup>b</sup>			
<b>A. UNITED STATES (JULY-JUNE)</b>										
1935-36....	147	626	773 <sup>d</sup>	466	88	+105	659	114	(28) <sup>e</sup>	142
1936-37....	142	627	769 <sup>d</sup>	471	97	+141	709	60	(23) <sup>e</sup>	83 <sup>f</sup>
1937-38....	83 <sup>f</sup>	876	959	468	94	+137	699	260	107	153 <sup>f</sup>
1938-39....	153 <sup>f</sup>	932	1,085	475	76	+173	724	361	109	252 <sup>f</sup>
1939-40 <sup>g</sup> ...	254 <sup>f</sup>	755	1,009	471	79	+135	685	324	45	279
1939-40 <sup>h</sup> ...	252 <sup>f</sup>	755	1,007	472	74	+131	677	330	46	284 <sup>f</sup>
1940-41 <sup>h</sup> ...	284 <sup>f</sup>	784	1,068	477	75	+141	693	375	...	...
<b>B. CANADA (AUGUST-JULY)</b>										
1935-36....	202	282	484	45	34	+43	122	362	254	108
1936-37....	108	219	327	44	34	+21	99	228	195	33
1937-38....	33	180	213	43	33	+26	102	111	87	24
1938-39....	24	360	384	47	35	+42	124	260	165	95
1939-40 <sup>g</sup> ...	95	490	585	50	35	+42	127	458	...	...
1939-40 <sup>h</sup> ...	95	490	585	50	39	+15	104	481	208	273
1940-41 <sup>h</sup> ...	273	561	834	49	35	+50	134	700	...	...
<b>C. AUSTRALIA (AUGUST-JULY)</b>										
1935-36....	57	144	201	33	13	+10	56	145	102	43
1936-37....	43	151	194	32	15	+ 5	52	142	102	40
1937-38....	40	187	227	30	15	+ 7	52	175	126	49
1938-39....	49	155	204	31	14	+13	58	146	96	50
1939-40 <sup>g</sup> ...	50	211	261	34	13	+12	59	202	75	127
1939-40 <sup>h</sup> ...	50	210	260	32	13	+13	58	202	77	125
1940-41 <sup>h</sup> ...	125	120	245	33	13	+14	60	185	...	...
<b>D. ARGENTINA (AUGUST-JULY)</b>										
1935-36....	85	141	226	69	23	- 2	90	136	70	66
1936-37....	66	250	316	67	23	+13	103	213	162	51
1937-38....	51	185	236	71	25	+ 3	99	137	72	65
1938-39....	65	380 <sup>i</sup>	445	72	21	+10	103	342	122	220
1939-40 <sup>g</sup> ...	175	118	293	73	23	+ 7	103	190	140	50
1939-40 <sup>h</sup> ...	220	119	339	73	19	+ 7	99	240	180	60
1940-41 <sup>h</sup> ...	60	200	260	74	20	+11	105	155	...	...

\* Based on official data so far as possible; see WHEAT STUDIES, December 1939, Table XXX.

<sup>a</sup> Total domestic utilization minus quantities milled for food and used for seed.<sup>b</sup> Total domestic supplies less surplus over domestic use.<sup>c</sup> Summation of net exports and year-end stocks.<sup>d</sup> Not including net imports.<sup>e</sup> Net imports.<sup>f</sup> Excluding new-crop wheat in some positions.<sup>g</sup> Estimates as of May 1940.<sup>h</sup> Estimates as of September 1940.<sup>i</sup> Our approximation; see p. 4.

TABLE X.—SELECTED WHEAT PRICES, WEEKLY FROM MAY 1940\*  
(U.S. cents per bushel)

Week ending	United States								
	Futures (Chicago)			Cash					
	July	Sept.	Dec.	Basic cash (Chi.)	No. 2 H.W. (K. C.)	No. 2 R.W. (St. L.)	No. 1 Dk.N.S. (Mnpls.)	No. 2 Hd. A.D. (Mnpls.)	Western White (Seattle) <sup>c</sup>
May 4.....	105.6	105.9	....	108.1	105.3	110.0	109.3	96.8	85.1
11.....	105.8	106.1	....	108.1	104.6	111.2	108.5	97.1	85.9
18.....	89.9	90.0	....	90.9	88.6	102.4	99.3	85.7	77.2
25.....	83.2	83.4	....	84.9	83.4	90.0	87.7	79.9	73.2
June 1.....	82.8	82.9	83.6	84.8	82.3	88.2	85.8	76.5	72.5
8.....	80.5	81.0	82.0	82.9	80.1	88.4	84.5	74.1	72.2
15.....	80.6	81.2	82.2	83.1	79.5	88.5	83.8	74.5	73.3
22.....	78.2	78.5	79.2	80.7	76.4	....	81.3	72.0	72.2
29.....	77.1	77.5	78.5	79.3	74.6	82.0	81.0	74.0	72.2
July 6.....	76.4	76.9	77.9	77.6	72.5	77.1	80.5	79.2	72.8
13.....	74.0	74.8	76.0	75.4	70.3	75.8	80.4	79.8	72.9
20.....	73.8	74.2	75.5	74.7	68.1	75.2	78.5	76.4	74.1
27.....	....	74.0	75.2	74.1	68.3	74.8	76.7	75.5	73.8
Aug. 3.....	....	75.5	76.2	76.0	70.9	77.2	77.8	75.8	74.5
10.....	....	74.2	75.1	74.7	70.1	77.0	75.4	72.3	74.7
17.....	....	71.6	73.0	72.1	68.4	75.5	72.0	74.5	72.5
24.....	....	69.8	71.8	70.2	67.4	73.3	72.2	76.6	72.0
31.....	....	71.9	74.4	72.4	69.8	76.0	74.8	81.1	73.0
Sept. 7.....	....	75.2	77.1	76.1	74.5	80.7	79.8	82.6	74.0
14.....	....	74.7	76.2	75.7	73.9	82.6	80.1	83.3	....
21.....	....	76.7	77.4	....	....	....	....	....	....

Week ending	Winnipeg <sup>b</sup>					Buenos Aires			Australian f.o.b.
	Futures		Cash			Futures		78-kilo	
	July	Oct.	Wtd. average	No. 1 Man.	No. 3 Man.	July	Sept. <sup>c</sup>		
May 4.....	82.5	84.4	80.3	80.8	75.8	80.6	81.9	76.7	69.1
11.....	82.4	84.5	80.1	80.7	76.0	77.6	78.8	74.9	69.1
18.....	69.2	71.2	66.9	68.3	63.3	68.1	69.4	65.6	68.5
25.....	66.5	68.9	64.3	65.5	60.4	68.2	69.2	66.5	67.9
June 1.....	68.2	70.4	66.4	67.3	61.4	69.4	70.4	68.0	68.5
8.....	67.9	70.2	66.6	67.3	61.3	70.7	71.6	69.8	68.1
15.....	66.6	69.1	65.6	66.2	60.4	69.3	70.1	68.1	67.7
22.....	64.9	67.4	63.8	64.5	58.2	69.6	70.8	68.2	67.2
29.....	64.9	66.9	64.0	64.6	57.7	71.6	73.1	71.0	67.2
July 6.....	64.9	66.9	64.2	64.9	57.6	74.5	77.5	73.5	67.2
13.....	64.9	66.9	64.0	64.9	57.6	72.5	75.5	72.7	67.2
20.....	64.9	66.9	64.0	64.9	57.6	74.4	76.2	74.4	67.2
27.....	64.9	66.9	64.1	64.9	57.6	....	75.5	73.9	67.2
Aug. 3.....	....	66.9	64.3	65.1	58.3	....	71.6	70.1	67.2
10.....	....	66.9	64.9	65.5	59.2	....	70.0	68.1	67.2
17.....	....	66.9	64.7	65.5	59.6	....	70.1	68.5	67.2
24.....	....	66.9	64.8	65.8	60.4	....	64.9	....	67.2
31.....	....	66.9	64.9	66.0	60.8	....	65.3	....	67.2
Sept. 7.....	....	66.9	65.5	66.3	61.0	....	65.6	....	67.2
14.....	....	66.9	....	....	....	....	62.8	....	67.2

\* For methods of computation see *Wheat Studies*, December 1939, XVI, 200-01. For the United States, prices are from *Daily Trade Bulletin* and *Foreign Crops and Markets*; for Canada, *Grain Trade News* and *Canadian Grain Statistics*; for Buenos Aires, *Revista Oficial* and *Daily Trade Bulletin*; for Australia, Broomhall's cables. Dots (...) indicate no quotations.

<sup>a</sup> Soft White (Portland) from June 2.

<sup>c</sup> August future through June 29; October future from September 2.

<sup>b</sup> Converted at constant official exchange rate (90.9090 U.S. cents per Canadian dollar).



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