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WHEAT STUDIES

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WHEAT IN THE FOURTH WAR YEAR: MAJOR DEVELOPMENTS, 1942-43

Helen C. Farnsworth

Military developments in 1942–43 favored the United Nations. So too did the distribution of wheat and of total food supplies. Aided by a record potato crop, German Europe made adjustments to the greatest bread-grain deficiency of the war period. The United States, Canada, and Australia turned some of their surplus wheat to nonfood uses that contributed to the war effort. But shortage of shipping and shipping blockades prevented much wheat from flowing to major grain-deficit areas in three of the United Nations—Soviet Russia, India, and China.

Urban bread rations were reduced in various countries of the Danube basin, but elsewhere in German Europe the bread rations of the preceding year were generally maintained or increased. In most countries bread-grain supplies were stretched by greater diversion of feed grains to human consumption. This was associated with further reductions in the prevailing low rations of meat and fats.

World exports of wheat and flour were smaller in 1942–43 than in any year since the late 1880's. At least 90 per cent was supplied by the four chief exporting countries, which shipped about half of their aggregate exports to the British Isles. Britain's takings were nevertheless the smallest in 25 years. This reflected the efforts of the British Ministry of Food to cut importation and consumption of foreign wheat through increase in the average wheat-extraction rate for National Flour and through new admixtures of barley and oats.

The four chief exporting countries together used about as much wheat for livestock feed and alcohol production in 1942–43 as they exported to other countries. Yet at the end of the crop year the remaining wheat stocks in the four countries were by far the largest on record—more than sufficient for a year's domestic wheat consumption.

STANFORD UNIVERSITY, CALIFORNIA

WHEAT STUDIES

OF THE

FOOD RESEARCH INSTITUTE

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In the military and naval spheres, the crop year 1942–43 was a year of great gains for the United Nations. Allied armies shifted from defensive to offensive positions in all theaters of the war against the Axis. Extensive territories in Russia and North Africa were taken or retaken by United Nations troops. The Continent was subjected to increasingly systematic and heavy bombing, which was beginning to show important results at the end of the year. The conquest of northern Africa and Sicily opened the Mediterranean Sea to Allied shipping, shortening the routes to Egypt, the Middle East, and India. The Battle of the Atlantic was *probably* won—by a remarkable increase in Allied sinkings of enemy submarines and by a fabulous output of merchant vessels in American shipyards. In the Pacific, Allied gains were much less important, but nevertheless significant. The Japanese were successfully held back in China, cleared out of the Australia-pointed tip of New Guinea, pushed northward in the Solomons to Munda, and driven entirely from the Aleutian Islands.

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These important military developments had less effect on the *immediate* wheat situation than on the outlook for wheat in the near future. While huge quantities of bread grain were immediately needed to feed the millions of liberated Russians in the devastated areas relinquished by the Germans, this need was not translated into an effective demand on overseas export supplies. The Soviet government, fighting a total war, requested under Allied protocols in 1942–43 large shipments of planes, tanks, and other war supplies, but quite moderate amounts of food, apparently including only about 15–20 million bushels of wheat mostly as flour. Even less wheat and flour—scarcely 4 million bushels in wheat equivalent—was shipped by the United States and Britain to relieve the shortage encountered in North African cities after the Allied invasion.

These moderately expanded demands for overseas wheat were presumably more than offset by concurrent contraction of Britain's imports—a contraction dictated by the desire of the British government to conserve shipping for the North African invasion and later similar movements on a larger scale. Even the victories scored in the Battle of the Atlantic and the opening of the Mediterranean did not release enough shipping to weaken the conviction of British officials that continued curtailment of wheat imports was necessary. But for the more distant future, Allied progress in liberating Nazi-dominated areas and in easing the general shipping position promised to expand the demand for overseas wheat in Continental Europe, including Russia, and for improving the palatability of bread in the United Kingdom.

The major developments in the world wheat situation in 1942–43 stand out clearly, despite the obscurity of certain details attributable to the lack of adequate statistics. It is noteworthy that 1942–43 did not witness further substantial contraction of the volume of published statistical information on wheat. Indeed, during the year, Canada began again to release data on monthly exports of wheat and flour, and a number of other countries showed a tendency to relax the extreme positions they had previously taken with regard to the suppression of wheat and other economic data. Furthermore, in 1942–43 more nonstatistical information was available than in 1941–42, when organizations that were in the habit of relying on statistical materials had not yet made adequate arrangements to deal with

abundant nonstatistical information. In short, the large gaps that remain in our wheat statistics for 1942–43 represent less of a handicap to judgment about current wheat developments than did the similarly large gaps in statistics in the preceding year. For both years, however, we have preferred to express many of our approximations to missing data in terms of percentage-of-average symbols rather than in numbers (Appendix Tables II–VI, XV, XVII).

Wheat information is most complete for 1942–43 for the four major exporting countries. Bumper crops and unprecedentedly large old-crop stocks brought their total wheat supplies to the highest level ever reached. The large supplies presented difficult problems of marketing and storage; but under government-sponsored programs of surplus-wheat disposal, they proved useful in producing alcohol for war purposes and in maintaining livestock numbers at record heights. In spite of the extraordinarily heavy use of wheat for nonfood purposes in these countries, particularly in North America, year-end stocks were larger than ever before—larger, indeed, than the newly expanded wheat utilization of the four exporters combined, and almost twice as large as the record volume of world trade in 1928–29.

In North America, the huge wheat supplies of 1942–43 were associated with notably high wheat prices in the United States and moderate to moderately high prices in Canada. In both of these countries, but particularly the United States, farm income was the highest in many years. In contrast, the price and purchasing power of wheat were low in Argentina and low to large producers in Australia. In all four exporting countries, the levels of wheat prices to growers and to consumers were determined by government action.

The net wheat and flour exports of the four countries in 1942–43 were only about 345 million bushels—less than in any other year of the three preceding decades. Moreover, *world* net exports were only moderately larger—probably 360–380 million bushels, or the smallest since the late 1880's. Thus, the shipments from the four major exporting countries constituted some 90 per cent of the total, a figure reached in only a few preceding years. The Soviet Union, India, Turkey, and other Middle Eastern countries that usually export wheat were all net importers in 1942–43; and North Africa and the Danube basin exported very little on balance.

Almost half of the wheat exported in 1942–43 was shipped to the British Isles. Brazil was probably the second largest importer, receiving perhaps 32 million bushels of Argentine wheat. Much less wheat was sunk on ocean passage in 1942–43 than in the preceding year: we infer that the total came to only 10–15 million bushels, as compared with our approximation of 20–30 million in 1941–42.

Continental European countries received very little overseas wheat during the past crop year. Only the neutral countries (principally Spain) and Greece were granted navicerts for overseas shipments. In total, some 35 million bushels of wheat may have been shipped under such navicerts. This was more than in the preceding crop year, but the increase was about offset by a decline in North African exports.

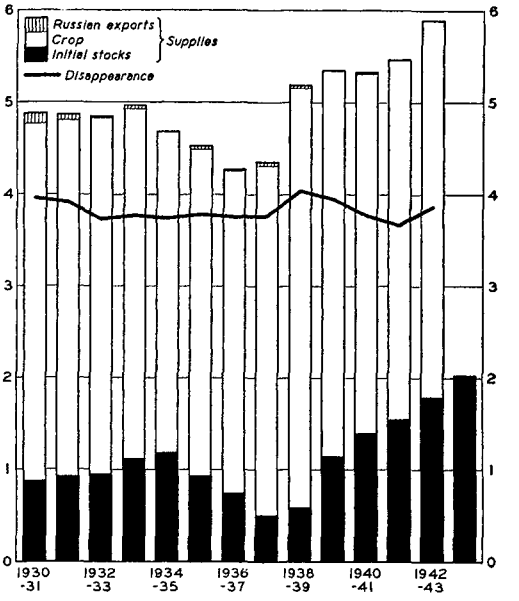
Very little information is available with regard to the volume of trade in bread grain on the European Continent. Certainly Danubian exports to Germany, Italy, and other countries were unusually small. On the other hand, the German Reich drew substantial quantities of wheat from former Poland, some from Czechoslovakia and France, and probably a little from occupied parts of the USSR.

In general, the bread-grain position of Nazi Europe was considerably worse in 1942–43 than in any preceding year of the war. In the Danube basin and a few other areas, this was reflected in reduced bread rations, but elsewhere earlier low rations were maintained by utilizing more feed grains and potatoes in the production of flour. Livestock numbers, already low, were further reduced during the crop year. Of the various major food crops only potatoes were relatively abundant, and these continued to be rationed sparingly, with a view to conserving as many as possible for feed. In no European country ex-Russia, however, were food conditions in general as serious in 1942–43 as they had been in Greece in 1941–42.

Chart 1 summarizes the wheat-supply position in the "world ex-Russia"[1] in 1942–43 in comparison with other recent years. Such global statistics have little immediate importance, since the current war has broken the unity of the wheat world, allowing serious shortages of bread grain to persist in deficit areas while stocks of troublesome proportions have accumulated in the overseas exporting countries. But as the end of the war approaches and shipping becomes easier, world statistics assume increased significance from the growing prospect for early renewal of the flow of wheat from surplus to deficit areas. Of the various facts shown in Chart 1, the most important is that world wheat disappearance was only moderately above average in 1942–43 in the face of unprecedentedly huge wheat supplies and heavy diversion of wheat to nonfood uses in North America. Thus, world year-end stocks of wheat reached a new record level of over 2 billion bushels in the summer of 1943.

CHART 1.—WHEAT SUPPLIES AND DISAPPEARANCE, WORLD EX-RUSSIA, ANNUALLY FROM 1930–31*

(Billion bushels)



* Food Research Institute estimates, utilizing available official data, shown for recent years in Table XXII.

I. MAJOR EXPORTING COUNTRIES

Government officials in the chief exporting countries showed a marked change of attitude during 1942–43 toward the holding of heavy wheat supplies. At the beginning of the crop year, official emphasis was still on solving the problems of burdensome wheat surpluses. By the end of the year, the current large supplies were widely recognized as a potent aid to the war effort of the United Nations. And in some circles concern even developed lest the available huge supplies later prove inadequate. This important shift of viewpoint is largely explained by the developments in supply and utilization described below.

CROP-YEAR SUPPLIES

After the outbreak of war in Europe in the fall of 1939, wheat supplies mounted higher and higher in the four chief exporting countries. By 1940–41 the combined crops and inward carryovers of these countries passed the 2.5 billion bushels mark for the first time. In the following year the total was up to 2.8 billion bushels (Table XXI). With wheat exports drastically cut by the naval blockade of Continental Europe, by German U-boat activity in the Atlantic, and, after December 7, 1941, by the closing of Oriental import markets, the only solution to the burdensome wheat-surplus problem of the chief exporters seemed to be the curtailment of wheat production.

In Canada and the United States strong measures were taken to keep down wheat acreage for 1941. These were changed only moderately for 1942. The Canadian system involved a limitation on total wheat deliveries in the Prairie Provinces (280 million bushels in 1942–43) and on the marketings of individual farmers. Supplementary payments were offered for diversion of 1940 *wheat* land to other specified crops—coarse grains, rye, grasses, summer fallow, or, in 1942, peas or

[1] Our designation for the world exclusive of the USSR, China, Iran, and a number of small wheat-consuming countries. The year-end stocks estimates apply to a considerably smaller area, including only the stocks of the four major exporting countries, Europe ex-Russia, North Africa (including Egypt), and stocks on ocean passage.

corn.[1] Moreover, in 1942 Canadian farmers were offered an additional inducement to shift part of their wheat acreage to oats, barley, or flaxseed by the establishment of minimum prices for these three crops, with guarantee of purchase by the Canadian Wheat Board (CWB). Under these government restrictions and incentives, the acreage sown to wheat in Canada was reduced from 28.7 million acres in 1940 to 21.9 million in 1941, to 21.6 million in 1942—the lowest figure in 17 years.

In the United States, wheat-acreage allotments under the agricultural adjustment program had been 62 million acres in both 1940 and 1941, and the areas actually seeded had been close to this goal. For 1942 the national goal was lowered to 55 million acres—the minimum allowed under existing legislation. Producers inclined to overplant their individual wheat-acreage allotments were confronted not only with loss of the full economic advantages offered co-operating farmers, but also with the special handicaps imposed by marketing quotas.[2] Under such quotas a non-co-operating producer of more than 15 acres of wheat could not secure a marketing card permitting sale of his "authorized" wheat output until he had (1) presented evidence of guaranteed storage of his "excess" grain, or (2) paid the penalty (half the basic loan rate) on the "excess" he planned to market or feed, or (3) delivered his "excess" wheat to an agent of the Secretary of Agriculture. Moreover, as a non-co-operating producer he was barred from the benefits of the wheat-loan program (except for restricted loans on his "excess" wheat at 60 per cent of the regular rate), and he was given *reduced* parity and conservation payments, with the amount of the reduction dependent on the degree of overplanting.[3]

All together, these penalties operated as strong inducements to United States farmers to co-operate in the government's 1942 wheat program. This tendency was strengthened by the higher government goals announced for a number of acreage-competing war crops—particularly soybeans and peanuts—and by sharply increased support and market prices for these products. Under this combination of circumstances, it is not surprising that the total area sown to wheat for harvest in the United States in 1942 came to only 52.5 million acres, or 2.5 million less than the allotted acreage. At this level, the wheat sowings of 1942 were the smallest in more than three decades and over 15 per cent smaller than in 1941.

The two exporting countries of the Southern Hemisphere also reduced their sown wheat acreage in 1942. The reduction was less important in Argentina, where positive government measures to bring about a decrease were limited to official "suggestions" that farmers plant less wheat (and also less linseed and less maize). Much more important than such suggestions was the prevailing low level of wheat prices to producers (Chart 8, p. 53)[4] and lack of sufficient rainfall in the latter part of the sowing period. Under these circumstances, the wheat area sown in Argentina was slightly less than 17 million acres, the smallest since 1935.

In Australia, too, wheat plantings were reduced mainly in response to unfavorable economic factors rather than to direct government restrictions on wheat sowings or marketings. Except in Western Australia, individual producers were authorized to plant as much land to wheat in 1942 as they had "normally" planted on the average in 1937–40; in Western Australia plantings were limited to two-thirds of the established "normal" areas, with compensation of 1*s.* per bushel on the

[1] Payments were made for diversion to flaxseed in 1941 but not in 1942. For 1941 the payments had ranged between $2 and $4 per acre, depending on the disposition of the land; but for 1942 a standard payment of $2 per acre was made for all of the uses specified.

[2] A marketing quota was in effect for the first time in 1941–42. The Secretary of Agriculture proclaimed the marketing quota for 1942 wheat on July 25, 1941, subject to the approval of wheat farmers in the spring of 1942. The referendum vote on May 2, 1942 indicated approval by 82.4 per cent as compared with 81.0 per cent in 1941. *Federal Register*, July 3, 1942, p. 5036. After harvest, the Agricultural Adjustment Administration announced that only about one per cent of the crop was subject to penalty.

[3] For every additional per cent by which his acreage was overplanted, the farmer received a reduction of not over 10 per cent in his parity payment, and a roughly similar reduction in his conservation payment.

[4] Moreover, there was uncertainty throughout the sowing period as to whether any government-guaranteed price would be established for the 1942 wheat crop.

ordered reduction. Under these light restrictions, something like 11.5 million acres might have been sown for the 1942 Australian crop. Actually, however, the area licensed for sowing was less than 11.0 million acres, and only 9.3 million acres were finally planted. Not since 1920 had Australian wheat sowings been so small. This mainly reflected restrictive shortages of agricultural labor and materials, and the low net return to be expected from wheat produced in excess of the initial 3,000-bushel marketing quota for each farm (p. 55).

In the four exporting countries combined, the area sown to wheat for 1942 was almost 20 per cent below the 1922–41 average and substantially the lowest acreage recorded during the past 21 years. These facts are apparent in Chart 2 (middle section), which also shows the 1942 wheat-acreage positions of the individual exporters.

Average yields per acre on these reduced areas would have resulted in below-average crops in all four countries. In actual fact, however, the yields per acre proved to be abnormally high and the crops all of average size or considerably larger (Chart 2, top and bottom sections).

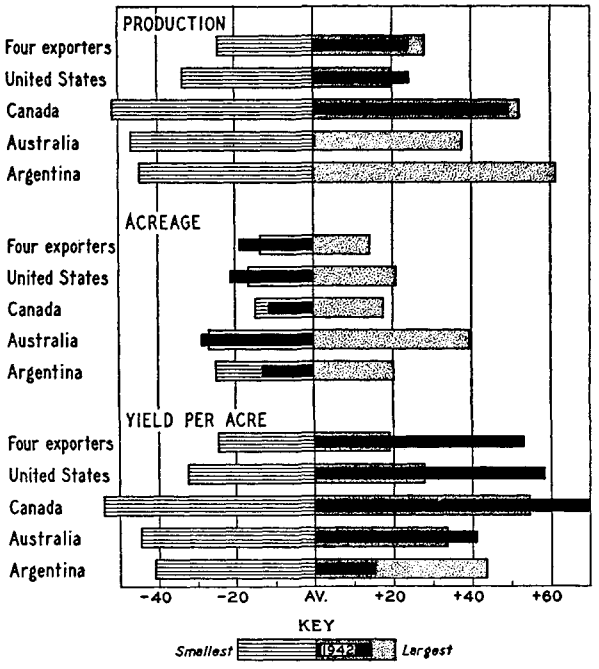
During the preceding twenty years, no yield per acre had ever approached that of 1942 in the United States, Canada, or the four exporters combined. In the United States, the reported yield per sown acre was 18.7 bushels, 24 per cent higher than the maximum yield of 15.1 bushels in the two preceding decades. Similarly, Canada secured a yield per acre of about 25.8 bushels in 1942,[1] as compared with an earlier 20-year maximum of 23.5 bushels. And despite shortages of labor and superphosphates, Australia obtained an all-time record of 16.8 bushels per acre, half a bushel higher than her previous maximum. Argentina's wheat yield in 1942, though above average, was less spectacularly high than the yields of the other three countries. It contributed, however, to the extraordinarily high average yield of 19.2 bushels in the four exporters combined —a figure almost 30 per cent above the notably high figure of 15.0 bushels for 1928.

[1] Based on production of 557 million bushels (Table III, note *b*). In 1915 both Canada and the United States secured yields per sown acre about as high or higher.

In some respects the high yields per acre of wheat in the four exporting countries in 1942 were the most important single feature of the crop year. They determined the level of wheat supplies in the exporting countries, influenced government decisions with regard to wheat utilization, and were primarily responsible for the record high carryover of 1943. On the other hand, the large stocks of old-crop wheat that were carried by the exporting countries on August 1, 1942 (July 1 in the United States) were also of major importance. Such stocks were almost as large as the corresponding 1942 crops in Australia and Argentina; and they amounted to 76 and 65 per cent, respectively, of the new Canadian and United States crops.

CHART 2. — WHEAT PRODUCTION, ACREAGE, AND YIELDS PER ACRE OF FOUR EXPORTERS, 1942, AND RANGES FOR 1922–41*

(Percentage deviations from 1922–41 averages)



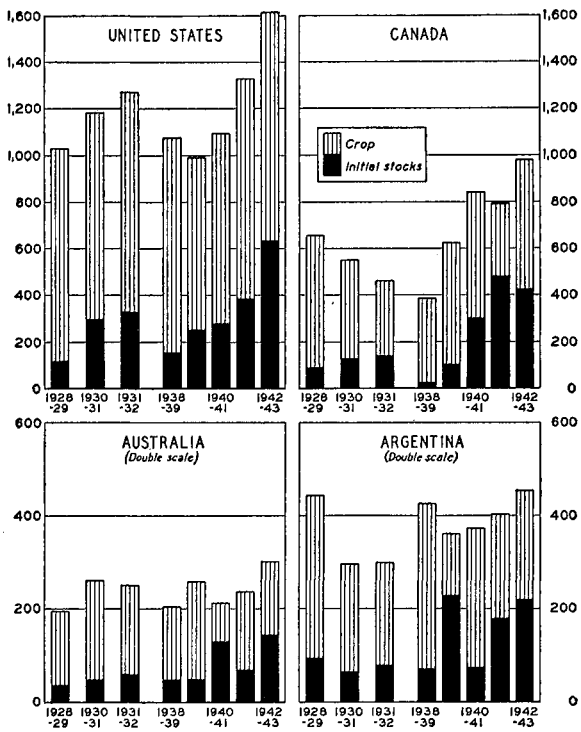
* Based on official data, which for recent years are shown in Tables III–V.

The relative sizes of the initial stocks, crops, and total supplies of 1942–43 in the four exporting countries are shown with pertinent past-year comparisons in Chart 3. The chart forcibly brings out the enormous size of the wheat supplies held in 1942–43 by the two

North American exporters, and the strikingly high level of supplies in Australia and Argentina also. With such huge supplies of wheat and heavy additional supplies of feed grains (Table VI), these countries faced serious problems of grain marketing and storage.

CHART 3.—WHEAT SUPPLIES IN THE FOUR CHIEF EXPORTING COUNTRIES, ANNUALLY FROM 1928–29*

(Million bushels)



* Official data for production and for stocks in the United States (July 1) and Canada (July 31); Food Research Institute estimates for Aug. 1 stocks in Australia and Argentina. See Table XXI.

Such problems were perhaps most acute in Canada and, secondarily, in the United States. Over the past few years both countries had considerably increased farm and commercial grain-storage capacity. Licensed commercial warehouses expanded their storage space (including many "temporary annexes") as shown below in million bushels:[1]

Survey date	Canada	Survey date	United States
July 1940	423	.....	....
July 1941	546	March 1941 ..	1,535
July 1942	600	February 1942	1,601
May 1943	603	April 1943 ...	1,667

The expansion in commercial storage capacity in North America was not sufficient to permit a free flow of wheat and other grains from farms to central markets in 1942–43. Canada met this problem for the third year by a system of marketing quotas, under which deliveries of individual farmers were limited to announced amounts of wheat per "authorized" sown acre.[2] The quota was set initially, as in the two preceding years, at 5 bushels per acre. In particular localities where more storage space was available, it was soon raised to 8 or 10 bushels or higher. But such increases were authorized more slowly than in either of the two preceding years, and the *general* quota of 5 bushels for bread wheat was not raised to 8 until December 9. Subsequent changes in the general quota were withheld until the spring of 1943. Even then the maximum announced was only 15 bushels, which remained unchanged till the end of the crop year,[3] or (by special ruling) till August 15 in certain localities. These developments contrasted sharply with those of 1940–41 and 1941–42, when all marketing limitations had been removed in April and December respectively.

Under the more severe restrictions of 1942–43, Canadian wheat was marketed more slowly than ever before. The August movement, handicapped partly by rains and shortage of harvest labor, was particularly light (Table IX). Not until October 21 did reported deliveries in the Prairie Provinces come to 25 per cent of the authorized crop-year total of 280 million bushels, and the 50-per-cent point was not reached until December 25. These dates reflected the slowest marketing move-

[1] Data for Canada from Board of Grain Commissioners and *Monthly Summary of the Wheat Situation*, Oct. 23, 1942, p. 20, and June 24, 1943, p. 25. Data for the United States from U.S. Dept. Agr., press releases of Apr. 3, 1942 and May 10, 1943.

[2] The authorized acreage of each farmer was defined for both 1941 and 1942 as 65 per cent of the area he planted to wheat in 1940.

[3] The general quota was raised to 10 bushels on April 13, to 12 bushels on May 21, to 15 bushels on June 9. This quota was extended to August 15 in many localities where farmers had not been able to make their authorized deliveries by August 1 because of local storage congestion. Up to August 1, only some 260 million bushels of the 280 million authorized had been delivered.

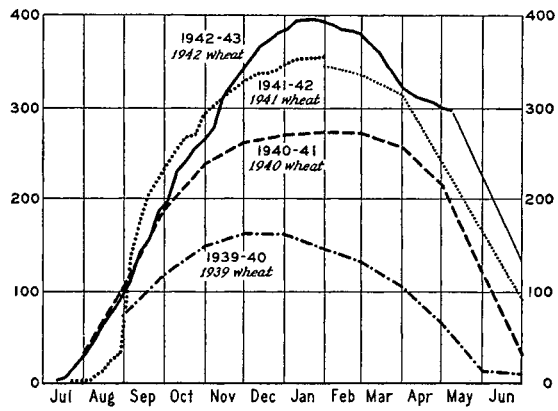
ment in more than two decades,[1] if not in history. And they leave entirely out of account the wholly unprecedented amount of old-crop wheat that remained stored on farms on August 1, 1943—stocks equal to 75 per cent of the total actual marketings during the crop year. These huge stocks were partly stored in newly-constructed or converted farm warehouses and bins. The grain-storage capacity on Western farms was reportedly increased by 94 million bushels during the year ending with July 1943.[2]

In the United States most farmers were restricted in their wheat marketings only by the early shortage of storage space for receiving their grain.[3] A few, holding about one per cent of the 1942 crop,[4] could market their grain only after payment of a penalty of 57 cents per bushel; but even this restriction was removed in February 1943, when the great need of wheat for feed became apparent.[5] More important in determining the rate of wheat marketings were (1) the government's loan program, under which farmers could earn 12 cents per bushel for proper farm storage of their loan wheat till April 30, 1944,[6] and (2) the inclinations of many farmers to hold their unpledged wheat in anticipation of higher wheat prices later in the crop year. These factors and the serious storage congestion in some localities resulted in a notably slow movement of wheat to market in the early months of the crop year. Only a little over half of the crop year's receipts of wheat at primary markets in the United States was recorded during July–December 1942 (Table IX), as contrasted with a normal figure of over 70 per cent and a previous low of 63 per cent. Moreover, farm stocks of wheat on both January 1 and April 1 were unprecedentedly large even in relation to the record wheat supplies that had been available for marketing in the crop year.

The same price developments and expectations (p. 59) that discouraged early marketings of United States wheat also discouraged a heavy early pledging of wheat under CCC loans. Chart 4 shows the reported flow of 1942 wheat under loan as compared with wheat-loan developments in the three preceding years. Through September hardly more wheat was pledged under loan in 1942 than had been pledged two years earlier from the much smaller 1940 crop, and through early November the volume of 1942 wheat under loan fell short of the corresponding figures reported for 1941 wheat in the preceding year. However, before the period for obtaining loans ended on December 31 (January 31 in some areas), considerably more 1942 wheat was put under loan, bringing the maximum reported to about 400 million bushels as compared with the 350 million maximum for 1941 wheat a year earlier. At the highest point for 1942 loan wheat in January 1943, total CCC holdings (wheat under loan, pooled, and

CHART 4.—NEW-CROP UNITED STATES WHEAT UNDER CCC LOANS FROM AUGUST 1939*

(*Million bushels*)



* Data from press releases of the U.S. Department of Agriculture and monthly statements of the CCC.

[1] Holbrook Working, "Price Effects of Canadian Wheat Marketing," WHEAT STUDIES, October 1937, XIV, 51.

[2] *Northwestern Miller*, Aug. 25, 1943, p. 24.

[3] See WHEAT STUDIES, September 1942, XIX, 9–11.

[4] U.S. Dept. Agr., Release 257-43, Aug. 5, 1942.

[5] *Ibid.*, Release 1679-43, Feb. 23, 1943.

[6] Farm loans on 1942 wheat do not mature until Apr. 30, 1944. Farmers who redeem their 1942 loan wheat before that date receive smaller storage payments or none at all. On wheat redeemed before Apr. 30, 1943, farmers had to forfeit the 7-cent storage advance paid them in the fall of 1942. Wheat redeemed between May 1 and June 30, 1943 earned the 7-cent payment but no more. On wheat held beyond June 30, 1943, but redeemed prior to Apr. 30, 1944, farmers earn the 7-cent initial advance plus an appropriate proportion (depending on date of redemption) of the extra 5 cents authorized for storage payment in the second year.

owned) amounted to well over 700 million bushels or to some 60 per cent of all the wheat then on hand in the United States.

Less information is available on the course of wheat marketings and the grain-storage problems encountered in 1942–43 in Australia and Argentina. Apparently sales of wheat by farmers to the Australian Wheat Board (AWB) and to the Argentine Grain Regulating Board (GRB) were only a little slower than usual in December–February 1943. But the movement of wheat from country points to leading terminals was considerably delayed. In Australia lack of adequate transport facilities for handling wheat along with the increased war traffic resulted in heavy accumulations of bagged wheat at country rail sidings. To prevent heavy deterioration of this wheat, the AWB requested nearby farmers to inspect the stocks frequently and to report evidence of mice damage, weevil infestation, and other types of deterioration which are bound to occur under such conditions of prolonged storage.[1]

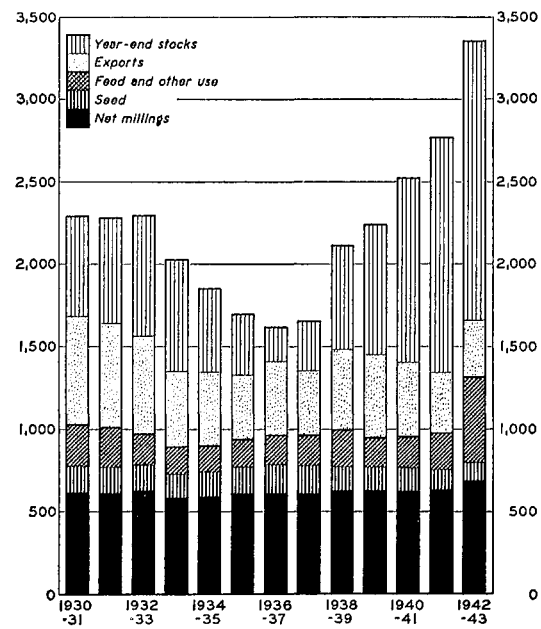
In Argentina, delay in the movement of wheat from country points occurred partly because of a shortage of bags and in spite of the priorities given wheat over corn both in shipment and in storage. Evidence of poor storage conditions was furnished by the official supplies report of May 21, which stated that 400,000 tons (14.7 million bushels) of wheat had been so damaged by insects that it would have to be written off as unsuitable for human consumption.[2]

Domestic Utilization of Wheat

The outstanding feature of wheat utilization in the four major exporting countries in 1942–43 was the unexpectedly and unprecedentedly heavy diversion of wheat to feed and other nonfood uses exclusive of seed. Chart 5 shows the contraction in seed use and the sharp expansion in other nonfood uses that occurred in 1942–43 in the four exporting countries combined. Never before in history had so much wheat been used for feed and industrial purposes. The amount so utilized (including waste) in 1942–43 came to well over 500 million bushels, or more than 75 per cent as much as the retained mill grindings of the four countries.

Chart 5.—Disposition of Total Wheat Supplies of Four Chief Exporters, Annually from 1930–31*

(*Million bushels*)



* Recent data from Table XXI for the United States, Canada, Australia, and Argentina combined.

The United States alone was responsible for two-thirds to three-fourths of this huge nonfood item. According to standing official estimates some 316 million bushels of wheat were used for feed in this country—about 100 million on farms where grown and 215 million sold by the Commodity Credit Corporation (CCC).[3] Another 60 million bushels of CCC wheat were used for the production of industrial alcohol. These estimated "use" figures are smaller than the corresponding crop-year figures on *sales* of CCC wheat for feed and alcohol, which totaled 275 and 70 million bushels, respectively. The implication is that at least 60 million bushels of the CCC wheat sold for feed and 10 million bushels sold for alcohol production were still in the hands of purchasers on July 1, 1943.

[1] *Primary Producer* (Perth, W. A.), June 10, 1943, p. 4.

[2] *Boletín Informativo* (Comisión Nacional de Granos y Elevadores, Buenos Aires), June 15, 1943, p. 270.

[3] Estimates of the Bureau of Agricultural Economics of the U.S. Department of Agriculture. See *Wheat Situation*, September 1943, p. 5.

The huge sales of government-owned wheat made by the CCC for nonfood purposes in 1942–43 were authorized by special Congressional action. The 1943 Agricultural Appropriation Act of July 22, 1942 (Public 674) provided for unlimited sales of government-owned grain for alcohol at unrestricted prices and for sales of as much as 125 million bushels of government-owned wheat for feed at prices not less than 85 per cent of the parity price of corn. In the early months of the crop year the demand for such wheat was light, but it expanded markedly as the price of corn advanced and the sales program of the CCC became better known and understood. By the end of February the first quota for feed was exhausted. Less than a month later Congress granted Secretary Wickard's request that the CCC be authorized to sell an additional 100 million bushels of wheat for feed (Public 18, approved March 25, 1943). For this wheat the CCC was instructed by Congress to charge not less than the national average or regional parity price of corn at the time of sale, whichever should be lower. The increased prices interfered little, if at all, with CCC sales of feed wheat, and within two months almost all of the 100 million bushels had been sold. The joint prospect of a continued heavy demand for grain for feeding in June–July and of persisting tightness in the corn market induced the House Committee on Agriculture to recommend extension of the authority of the CCC to sell an additional 50 million bushels of wheat for feed prior to July 1. This recommendation was adopted (Public 71, approved June 14), with stipulation of the same minimum price base specified in March.

In total, then, 275 million bushels of good-quality CCC wheat were authorized for sale and actually sold in 1942–43 at prices well below 1942 wheat-loan rates and current wheat prices. On the first 125 million bushels sold, the public treasury stood a loss of $43,750,000.[1] The per-bushel loss on subsequent sales was probably not appreciably smaller despite the requirement that later sales should be made at 100 per cent of corn parity.

Whether these outlays of public funds will appear justified in the light of history is an open question. If the 1942 loan rate for wheat had not been politically inflated to such a high level, almost as much wheat might have been fed in 1942–43 without any price subsidization. The prevailing high prices for poultry and livestock and the scarcity of protein feeds would have stimulated heavy feeding of wheat even at prices that would fully have covered the costs of the wheat. Moreover, if the record large supplies of feed grains available in the United States in 1942–43 had been better managed—if the price ceiling on hogs had not been put so high in relation to the price ceiling on corn—the same record livestock population could have been maintained with less waste of feed grain and less drain on the country's wheat stocks—either subsidized or unsubsidized. Congress, the Office of Price Administration (OPA), and the War Food Administration (WFA) failed to co-operate successfully in 1942–43 in developing a sound war-food policy in the interests of the nation as a whole. The best that can be said for the subsidized sales of CCC wheat for feed last year is that the small sales in the early months helped to relieve storage congestion, and the larger later sales helped in certain regions to offset the bad effects of other unwise government measures.

Much less criticism can reasonably be directed at the sales of government-owned wheat for alcohol production in the United States. Shortage of shipping made it desirable to substitute higher-priced domestic grain for imported molasses and sugar in the production of industrial alcohol for war purposes. Corn, not wheat, was the logical choice for substitution;[2] but the larger wheat holdings of the government and the light flow of corn to market (attributable to unwise governmental price policies) furnished a basis for preferring wheat. Moreover, by using granular wheat flour, rather than wheat or corn

[1] Information supplied the House Committee on Agriculture by President Hutson of the CCC.

[2] A report of the Wheat-Alcohol Research Committee, Chemicals Division of the War Production Board in co-operation with the U.S. Department of Agriculture indicated the following yields of alcohol from grain: 56 lbs. whole corn, 5 proof gallons; 56 lbs. granular flour (from about 92 lbs. wheat), 5.45 proof gallons; 56 lbs. whole wheat, 4.6 proof gallons.

as grain, less plant construction and new equipment were required for the increased output of alcohol, and the resulting mill offals constituted a welcome addition to the nation's supply of protein feeds. The program for manufacture of granular flour for alcohol production was established in late December 1942. During the following six months over 22 million bushels of wheat were ground to make granular flour, at an average extraction rate of slightly less than 61 per cent. The use of granular flour and wheat for alcohol production was stimulated by the increasing tightness in corn in the spring of 1943. In April the CCC stopped selling corn to distillers,[1] and in July the War Production Board (WPB) banned the use of corn in the manufacture of grain alcohol in order that the short market supplies of corn might be conserved for producers of food products and starch.[2]

In Canada, almost twice as much wheat was fed to livestock as was used for human food in 1942–43. The amount fed probably came to 95 million bushels—much the largest quantity ever so utilized. The bulk of this, about 80 million bushels, was fed on farms where grown without benefit of any feeding subsidy.[3] The remainder was mostly shipped from the Prairie Provinces to eastern Canada or to British Columbia under freight assistance and other subsidies (pp. 58–9). In total, 19 million bushels were *shipped* under freight assistance in 1942–43, but some of this wheat was stored for use in 1943–44.

Heavy use of wheat for feed in Canada in 1942–43 reflected high livestock-feed price ratios, record livestock numbers, and more restrictive marketing quotas for wheat than for oats and barley. Feed-grain supplies were almost twice as large as usual, and the volume fed was increased about as sharply in percentage terms. Yet a number of Western farmers deemed it more profitable to feed part of their wheat and to market correspondingly more of their coarse grains.

Little Canadian wheat was used for other nonfood purposes. Late in 1942 plans were made for the production of a small amount of industrial alcohol from wheat, and it is now estimated that 4.4 million bushels were used for this purpose during 1942–43. Distilleries are reported to have taken 3.7 million bushels in the form of wheat grain and .7 million in the form of granular flour (151,113 barrels).[4]

Neither Australia nor Argentina appear to have used really large quantities of wheat for feed or other nonfood uses during August–July 1942–43. However, wheat feeding was apparently heavier than usual in both countries, and in both there were signs of expansion toward the end of the crop year. Australia made an insignificant start in the direction of using wheat for alcohol production (which may take 5 million bushels in 1944), and at the very end of the crop year Argentina authorized large sales of wheat for fuel and feed.

In Australia, drought, shortage of mill offals, the availability of appreciable quantities of storage-damaged grain, and reduced prices of f.a.q. wheat for feed (p. 55) apparently resulted in a sharp increase in Australian feeding of wheat during 1942–43. This was particularly marked in the last quarter of the crop year. In mid-August 1943 the Canadian Trade Commissioner in Melbourne reported that consumption of wheat by livestock was 30 per cent higher than a year earlier.[5]

In Argentina, the prolonged drought that damaged pastures and wrecked the 1943 maize crop stimulated the demand for maize and, to some extent, the demand for wheat to feed the unprecedentedly large livestock population of that country. In the drought areas the government distributed some wheat along with other grain for emergency feeding, but otherwise no official step seems to have been taken to encourage feed use of wheat until July 22, 1943. Then, several months after the maize surplus had admittedly disappeared,[6] and two months after 14.7 million bushels of wheat had been officially written off as "unfit

[1] *Northwestern Miller*, Apr. 14, 1943, p. 14.

[2] *Southwestern Miller*, July 13, 1943, p. 36.

[3] Sixty million bushels were fed on farms in the Prairie Provinces, where 43 million had been fed in 1941–42 and 32 million in 1940–41.

[4] Data from *Monthly Review of the Wheat Situation* (Dominion Bureau of Statistics), Aug. 20, 1943, p. 6.

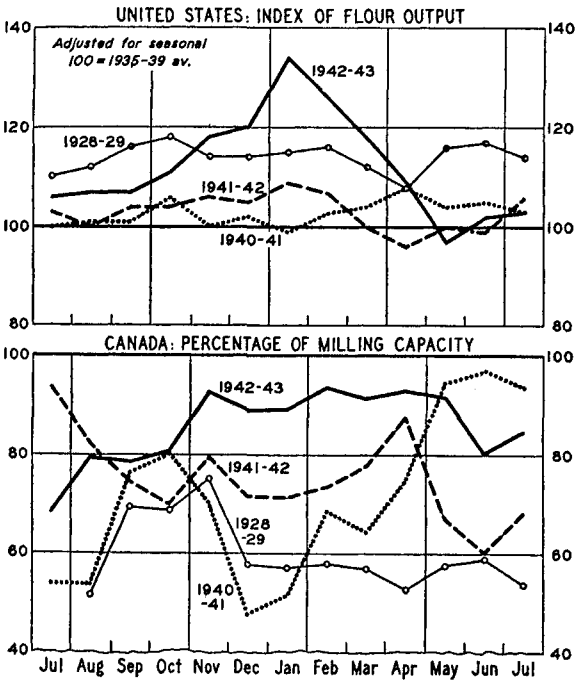
[5] *Ibid.*, p. 10.

[6] For a brief discussion of recent developments in the maize situation in Argentina, see WHEAT STUDIES, September 1943, XX, 14–15.

for human consumption," the Argentine government authorized the sale of 18.4 million bushels of wheat for feed and 73.5 million for fuel at reduced prices (p. 54). This new action foreshadowed sharply increased use of Argentine wheat for nonfood purposes in 1943–44, but it came too late to stimulate such use in 1942–43.

A second striking feature of domestic wheat disposition in the four exporting countries in 1942–43 was the expanded output and net retention of flour in North America. Chart 6 shows the extremely high level of milling activity in both the United States and Canada last year as compared with the two preceding years and also with 1928–29, the year of maximum interwar output in both countries. The figures shown for the United States are the

CHART 6.—INDEXES OF NORTH AMERICAN FLOUR OUTPUT AND MILLING ACTIVITY, 1942–43 WITH COMPARISONS*



* United States data from *Federal Reserve Bulletin*. Canadian data from Canada, Dominion Bureau of Statistics, *Canadian Milling Statistics*.

recently revised indexes of flour production of the Federal Reserve Board[1]—figures adjusted for average seasonal variations. These clearly indicate that United States mills were abnormally active during the late fall and winter months, after which production declined sharply as the demand for flour for North Africa dropped off and consumers in this country began to draw on the large stocks of flour they had previously built up.

Canada produced more flour in 1942–43 than ever before—23.5 million barrels. Over half of this—a record quantity—was exported (p. 49), but the amount retained domestically was large in comparison with most previous years (Table XVII). It is still too early to know whether the increased retention points to expanding domestic consumption of flour. Until further evidence is available, however, we are inclined to assume that per capita consumption rose only slightly, if at all, in 1942–43 and that the increased retention mainly reflected the building up of flour stocks.

At 121 million barrels or 238 million units of 100 pounds (exclusive of granular flour for alcohol), United States flour production was the largest since 1928–29.[2] But production had been heavier in 1918–19, 1919–20, 1926–27 and 1928–29 — all years of extraordinarily large flour exports. Although official trade data are not available for the past two years, there is good evidence that United States exports and lend-lease shipments of flour were relatively small in 1942–43 (p. 50). And even though these were substantially swelled by shipments for military stock piles and for the consumption of our armed forces, prisoners of war, and army-fed civilians overseas, we infer that the amount of flour actually retained in this country in 1942–43 probably totaled 113–114 million barrels (221–223 million units of 100 pounds).

Such a net retention figure would be considerably the largest on record (Table XIX). But it would not necessarily imply a corresponding increase in the flour *consumption* of civilians and the armed forces located in this

[1] Our last issue of WHEAT STUDIES (September 1943, XX, 9) carried a chart based on the unrevised figures. Those for 1942–43 were considerably changed in the October revision.

[2] See Table XIX, where figures are shown in million 100-pound units. On May 1 the 100-pound unit was officially adopted by the flour industry on the order of the War Production Board.

country. Indeed, while one may reasonably assume that some increase in consumption did take place as our armed forces expanded,[1] as the number of actively employed civilians mounted and working hours lengthened, and as shortages of some other foods developed, we infer that the increase in per capita flour consumption in this country in 1942–43 was probably not over 2 or 3 per cent. How an increase of this magnitude might have been shared by the armed forces and civilians is not clear. But unless the increase was appreciably larger than we believe, flour stocks must have been built up sharply in the United States during the course of the crop year. Presumably these stocks were held in large part by the army, navy, and marine corps.[2]

Milling statistics for Australia for July–June 1942–43 and for Argentina for the calendar year 1942 show no tendency toward expansion of per capita flour consumption (Table XVII). During 1942 Australia supplied American troops, under reverse lend-lease, with 22,956,000 pounds of bread, cake, and biscuits, and 6,985,000 pounds of other wheat and cereal products.[3] This probably amounted to something like 24 million pounds of flour or half a million bushels of wheat. But this demand on Australian mills was more than offset by reduction in the normal demand for Australian flour exports. Consequently, Australian mills produced less flour in 1942–43 than in any year of the two preceding decades.

Our last issue of WHEAT STUDIES briefly reviewed the measures taken in 1942–43 to insure a high level of "enrichment" of all white bread sold in the United States.[4] This movement in the direction of making bread a more nutritious food had no counterpart in the other three exporting countries. "Canada Approved" flour and bread—roughly equivalent in nutritive values—have not been widely promoted either by government educational campaigns or trade advertising. Indeed, in many parts of Canada these improved products were apparently unobtainable in 1942–43.

NET EXPORTS OF WHEAT AND FLOUR

Canada was by far the largest exporter of wheat and flour in the world in 1942–43. Argentina, with exports only a third as large, ranked second. Official export data, now available for both of these countries, indicate combined exports of 281 million bushels. The other two major exporting countries have not published trade figures for the past two crop years; but the available evidence suggests that in 1942–43 their aggregate net exports and shipments (exclusive of military supplies) did not exceed 60 million bushels.

Chart 7 shows the reported net exports of Canada and Argentina and our approximations to the net trade figures of the United States and Australia in 1942–43, in comparison with net exports in other recent years. The total indicated for the four countries in the past crop year is the lowest since 1911–12. The same total export figure is shown in relation to other items of disposition in Chart 5, p. 44.

In spite of the low total, Canada's exports were larger than they had been in five years of the preceding decade. This primarily reflected Canada's favored position (both geographically and as a member of the British Commonwealth) for shipping wheat to the United Kingdom. It also reflected the policy of the British government to maintain wheat and flour stocks at a high level. But Canadian wheat exports would have fallen off much more sharply than they did in 1942–43 (in response to the decline in Britain's demand for foreign wheat) if Canada had not supplied relief wheat to Greece and flour on special credit terms to the Soviet Union. Exports to these two countries alone apparently came to

[1] It is not at all certain that the per capita flour consumption of the men and women in our armed forces is any higher than the per capita consumption of the same group would be in civilian life. Such evidence as we can muster suggests an average per capita consumption of ½ pound of flour per day for soldiers —182 pounds per year. This figure, which is for active adult males, is not directly comparable with the 154-pound figure for all civilians (including women and children) which we have accepted in recent years.

[2] For a discussion of the stocks policy of the United States Army, see Maj. Gen. E. B. Gregory, "Army Does Not Hoard Food," *Northwestern Miller*, July 7, 1943, pp. 42, 44, 46.

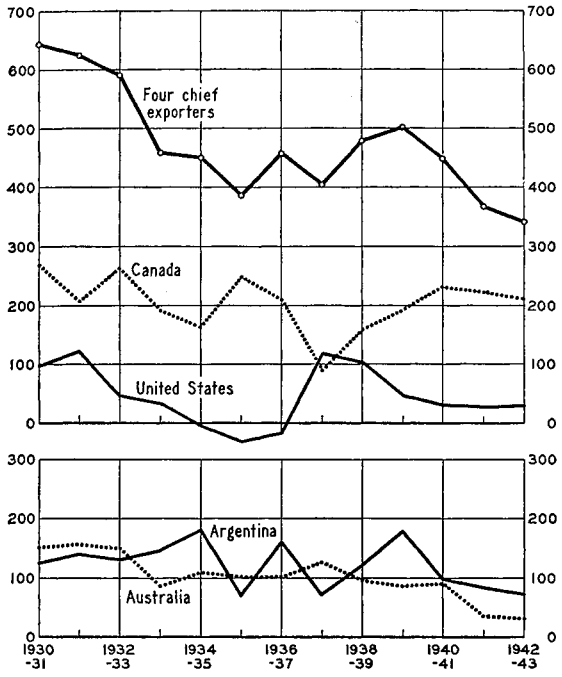
[3] The Parliament of the Commonwealth of Australia, *Reciprocal Lend-Lease Statement Concerning Administration in Australia to December 31, 1942* (Parliamentary Papers, 1940–43, No. 98).

[4] WHEAT STUDIES, September 1943, XX, 21–22.

about 15 million bushels during the crop year. Another 10 million bushels or so went to European neutral countries—Eire, Portugal, and Switzerland. On the other hand, transport difficulties prevented sizable shipments of Canadian wheat to the United States until after the close of the crop year (p. 51).

CHART 7.—WHEAT AND FLOUR NET EXPORTS OF THE FOUR CHIEF EXPORTING COUNTRIES, ANNUALLY FROM 1930–31*

(Million bushels)



* Data from Table XIV. In 1941–42 and 1942–43 exclusive of military shipments from the United States.

Over a fourth (26.8 per cent) of Canadian wheat and flour exports in 1942–43 went in the form of flour. This was an extraordinarily high figure—the largest since 1919–20. It was high even as compared with the two preceding years, when Canadian flour exports had been regarded as relatively heavy at some 20 per cent of total exports. In absolute terms, the flour exports of Canada in 1942–43 were the largest on record—12.7 million barrels or 57.1 million bushels as wheat. We infer that about three-fourths of this went to the United Kingdom, and about half of the remainder to the Soviet Union.

Argentina's exports of wheat and flour were barely more than half as large as the average for the decade before the war. Yet they were reduced only moderately from the preceding year—a decline wholly attributable to reduced British takings. The policy of the British government was to use as little shipping as possible on the longer routes and to reserve most of the return-shipping on the Plate run for meat.[1] Almost half of Argentina's small wheat exports went to Brazil. More than a fourth went to Spain. The remaining fourth was distributed among a large number of countries, including Peru, Chile, the United Kingdom, and Sweden. Perhaps for the first time in history Argentina shipped as much wheat to Peru as to the United Kingdom. Argentina's *flour* exports were slightly larger than in either of the two preceding years, but they were still significantly below the prewar average and, as usual, represented only a small proportion of the total trade.

Much less information is available with regard to Australia's exports. Her low flour millings in July–June 1942–43 suggest notably low flour exports—smaller even than in 1941–42. Yet these probably accounted for almost half of Australia's total wheat and flour shipments—a notably high percentage. Reports from the United Kingdom indicate that relatively little Australian wheat or flour found its way to that important prewar market last year. From other reports we infer that about 10 million bushels of Australian wheat went to India, that New Zealand and South Africa each received a couple of million, that the Middle Eastern countries imported 6 to 10 million bushels, and that another million or so may have gone to Egypt for the use of British troops in North Africa. We have seen no reports indicating that Australia sent wheat grain or flour to the USSR.

[1] During the past two crop years Argentine exports of meat to the United Kingdom have been extraordinarily large. Meat shipments were as follows (according to data in the *Times of Argentina* and *Boletín Mensuel Estadística Agropecuaria*):

Aug.–July	Preserved meat (*1,000 tons*)	Pork (*1,000 tons*)	Beef (*1,000 quarters*)	Lamb, mutton (*1,000 carcasses*)
1933–42 av.[a]	67.5	15.5	5,045	3,333
1941–42	70.5	45.3	5,956	3,367
1942–43	106.6	72.8	4,895	4,065

[a] Calendar years.

Although official data on United States exports are not available, reports on lend-lease shipments and government-subsidized sales of wheat and flour for export give us sufficient information to make a fairly confident estimate of the volume of trade in 1942–43. The pertinent data with past-year comparisons are summarized in the following table.

SALES AND DELIVERIES OF UNITED STATES WHEAT AND FLOUR FOR EXPORT COMPARED WITH REPORTED OR ESTIMATED EXPORTS

(Million bushels, wheat-grain equivalent)

July–June	Subsidized export sales		Lend-lease deliveries	Shipments to poss.[a]	Total[b]	Gross exports[c]	Net exports
	Wheat	Flour					
1938–39	71.3	22.1	...	2.9	96.3	110	109
1939–40	18.6	16.5	...	3.5	38.6	48	47
1940–41	3.3	18.0	...	3.6	24.9	37	33
1941–42	7.8	11.5	3.7[d]	*3.0*[e]	26.0	*29*[e]	*27*[e]
1942–43	10.0	10.0	11.4[d]	*2.8*[e]	34.2	*31*[e]	*28*[e]

[a] Almost all flour.

[b] Total of figures in four preceding columns.

[c] Official data through 1940–41; exclusive of exports of flour milled from imported Canadian wheat. The differences between this column and the preceding one reflect additional commercial exports in the first three years, and in all years changes in year-end stocks of unexported wheat and flour previously sold for export under the subsidy program.

[d] Including 1.0 and .6 million bushels of wheat grain in 1941–42 and 1942–43 respectively.

[e] Our approximation.

Since practically no *commercial* exports of United States wheat or flour were made during the past two years, gross exports in each of these years should have approximated closely the corresponding annual sum of subsidized export sales, lend-lease deliveries, and shipments to possessions. Precise agreement could not be expected, however, since export sales and lend-lease deliveries are often completed weeks or even months before the wheat and flour are actually shipped. We infer that at the end of 1942–43 some 6 million bushels of wheat and flour which had been sold or delivered for export remained unshipped—mainly grain for Mexico, flour for Cuba, and part of the lend-lease deliveries of May–June. In contrast, the wheat and flour that had been carried over for export in 1942–43, on the basis of export arrangements made in the preceding year, must have been appreciably smaller. Consequently, it seems reasonable to assume that the gross wheat and flour exports of 1942–43 were something like 3 million bushels smaller than the total subsidized sales, lend-lease deliveries, and estimated shipments to possessions.[1]

The bulk of the subsidized sales of wheat grain represented sales of privately owned wheat to Mexico under the grain-export subsidy program inaugurated December 2, 1942 and discontinued effective May 14, 1943.[2] Subsidized export sales of wheat grain from the stocks of the CCC probably totaled only about half a million bushels during the crop year. The subsidized export sales of flour were destined primarily to Cuba, and secondarily to other countries of the West Indies and to Central America. Over 700,000 barrels of flour (3.2 million bushels as wheat) were sold to Cuba between April 16 and 26 at the extraordinarily high indemnity rate of $2.64 per barrel.[3] This rate is shown below, in comparison with the corresponding rates in force during the past three years.

UNITED STATES INDEMNITY RATES ON FLOUR EXPORTS TO THE AMERICAS FROM JULY 1940*

(Dollars per barrel)

Effective date	All ports	Effective date	All ports
1940		1942	
July 1	.00	Mar. 9	1.25
July 18	.70	July 1	.00
Sept. 18	.85	Aug. 3	1.25
Nov. 7	1.05	1943	
		Jan. 28	1.60
1941		Feb. 11	1.75
Feb. 6	.90	Mar. 11	2.00
Mar. 25	1.05	Apr. 16	2.64 (Cuba); 2.00 (Others)
May 7	1.35	Apr. 26	2.00
July 1	.00	July 1	.00
July 16	1.35		

* Data from official releases and milling journals.

Lend-lease *shipments* of wheat and flour during 1942–43 (presumably smaller than the

[1] This assumption is strongly supported by the fact that our approximations to *net* exports in the past two years, derived by subtraction of indicated imports from the gross exports shown above, check with export estimates seemingly implied in the *Wheat Situation*, August 1943, p. 11.

[2] While this program was in force, the following per-bushel subsidies were announced: Dec. 2, 1942, $.20; Jan. 12, 1943, $.25; Mar. 30, 1943, $.30.

[3] For details regarding this sale see WHEAT STUDIES, May 1943, XIX, 207.

deliveries shown in the table) went almost entirely to the Soviet Union and North Africa. We infer that the United States supplied the bulk of the 80,000 tons of flour and 6,500 tons of wheat (in total, 3.9 million bushels as wheat) that Britain and the United States shipped to North Africa for civilian consumption during 1942–43.[1] These shipments were presumably made mainly under lend-lease arrangements and reported as exports. The rest of the American lend-lease shipments of wheat and flour — about 8 million bushels — went mainly to Soviet Russia. In addition, some flour was apparently drawn from British and American army stocks for distribution to civilians in Algeria and Tunis. This would not be counted as an export.

United States shipments of wheat abroad for American armed forces and their prisoners and for army stock piles that have been or later may be used for feeding some of the "liberated peoples" are not included in our estimate of exports in 1942–43. Nor are they likely to be included in the official export figures that will later be published for the war years. We infer that such shipments were substantial. Though American troops stationed in Britain and Australia were furnished British and Australian flour on reverse lend-lease account, other American forces overseas were apparently supplied with flour from this country. For most of these forces, stocks overseas and on ocean passage on July 1 may have approximated 6 months' consumption (including allowance for shipping losses).[2] And army shipments for immediate or later use in the liberated areas may have been not much smaller. The army's experience in North Africa last year and the decision of President Roosevelt in July to make the army responsible for relief operations in all liberated areas during the early months of occupation must have stimulated army shipments for stock piles overseas. But such shipments were probably insignificant before December 1942, and still small during the following months.

United States imports of wheat and flour for human consumption were limited to about one million bushels annually by the import quotas established by Presidential proclamation on May 28, 1941.[3] Effective April 29, 1943 these quotas were suspended by the President "insofar as they apply to wheat and wheat flour purchased by the War Food Administrator or any agency or person designated by him."[4] Actually, the War Food Administration (WFA) made no move in 1942–43 to import wheat for human consumption, but it did purchase for importation from Canada 9.25 million bushels of wheat (higher than feed-grade) for use as feed.[5] Transport difficulties interfered with shipment, and apparently not more than about 1 million bushels were imported prior to June 30. Together with quota imports for human consumption and commercial imports for feed, these brought total gross imports (exclusive of grain for milling in bond) to perhaps 3 million bushels.

Changes in Government Policy

On August 1, 1943 (July 1 in the United States) the four exporters combined held almost 1,700 million bushels of old-crop wheat —over 270 million bushels more than ever before. These huge stocks were larger than the crop-year utilization of wheat in the four countries, though that had been expanded in 1942–43 by heavy use of wheat for nonfood purposes (Chart 5, p. 44). They were 1.8 times as large as the record world wheat exports of 1928–29.

Beside these enormous stocks, the so-called "depressing surpluses" of 1931–35 and 1939–41 seemed to shrink in importance. Even the huge stocks of 1942 appeared less large. Yet the stocks of 1943 were widely regarded more as a blessing than as a menace. Indeed, in the United States, where the 1943 carryover and new crop came to a total that had been exceeded only in the preceding year, there was some concern lest the wheat supplies for 1943–44 should prove too small to meet current pressing needs for domestic feed and alcohol, for essential food in devastated, reoccupied

[1] *Department of State Bulletin* (U.S.), Oct. 23, 1943, pp. 271–72.

[2] See Gregory, *op. cit.*, p. 42.

[3] See Wheat Studies, September 1941, XVIII, 8.

[4] *Federal Register*, May 4, 1943, p. 5693.

[5] The first purchase of 7.25 million bushels was announced April 21 (U.S. Dept. Agr. Release 2183-43, Apr. 21, 1943); the second, of 2 million bushels, on June 28 (*Winnipeg Free Press*, June 29, 1943, p. 14).

areas of the USSR, and for food relief in areas that may soon be liberated in Europe.

This change in attitude toward large wheat carryovers in the four exporting countries occurred during the course of 1942–43 in reflection of two important new developments. First, wheat began to be used on a large scale under government sponsorship and subsidy to meet wartime needs for livestock feed, alcohol production, and fuel (in Argentina)—uses that could be expected to absorb huge quantities of wheat at appropriately low prices. Second, the successes scored during 1942–43 by the armed forces of the United Nations encouraged the growing belief that large populations in the Soviet Union and western Europe would soon be liberated and thereafter partially dependent on overseas food supplies. Early estimates of the quantities of wheat and other foods likely to be shipped to the liberated peoples of Europe varied widely, but seemed mostly too high in view of prospective transport difficulties (within Europe as well as outside), relief organization and financing problems, and political considerations related to requests for food sacrifices by the American public.[1] In our opinion, many of the estimates also implied excessive reliance on United States food supplies, without providing for appropriate use of food surpluses in other countries.

In the light of these developments, it is not surprising that government officials in the various exporting countries should begin to look with favor upon the maintenance of heavy wheat stocks that in earlier years would have been regarded as a burden. This change in viewpoint necessitated a change in previous government policies with respect to restriction of wheat plantings. The United States was the first country to relax acreage restrictions: in February 1943, Secretary of Agriculture Wickard suspended existing wheat-marketings quotas, canceled the 1943–44 quota referendum scheduled for vote in the spring, and announced that wheat farmers who exceeded their wheat allotments for 1943 would receive their full AAA wheat payments for 1943 provided they fulfilled 90 per cent of their farm war-crop goals.[2] In Argentina, where failure of the 1943 maize crop centered attention on wheat and linseed as possible fuels, the new government abolished existing acreage-restriction measures in July[3] and encouraged expansion of sowings of wheat, linseed, and sunflowers by promising markets for these crops at supported prices if necessary.[4]

No official steps were taken to relax wheat-acreage restrictions in either Canada or Australia, though in Canada farmers and members of the grain trade were beginning to talk about the prospect for increased wheat-marketing quotas in 1944–45. Less optimism seemed warranted in Australia, because of the shipping disadvantages that country suffers as an exporter to Europe, and because of the continuing prospect that most Pacific markets will remain closed for many months after the European phase of the war is ended. Moreover, considerable expansion of wheat acreage can take place in Australia without change in existing acreage restrictions (p. 41).

In the field of international co-operation, there were also significant changes in government policy during 1942–43. Relief projects, which had previously been envisaged as primarily the responsibility of Britain and the United States, were revised to fit into the prospective program of the United Nations Relief and Rehabilitation Administration (UNRRA)—a more appropriate international organization. Moreover, relief planners who had earlier placed major reliance on the food resources of the United States began to investigate other countries as possible sources of relief supplies. It is to be hoped that the recent trend away from American and Anglo-American relief planning toward international co-operation in that field will be continued; but a danger lies in the present lack of accepted responsibility for building up large reserve stocks of flour, lard, margarine, beans,

[1] This and related aspects of United Nations relief policies are discussed in WHEAT STUDIES, September 1943, XX, 22–29.

[2] The 90 per cent requirement was later dropped for many farms. See U.S. Dept. Agr., Release 2475-43, May 31, 1943.

[3] Farmers' sales of 1942 wheat to the GRB had been conditioned on agreement to reduce wheat plantings for 1943 by 10 per cent; but no special efforts appear to have been made to enforce such reductions.

[4] *Boletín Informativo*, July 15, 1943, pp. 326–27.

canned milk, and other essential foods ready for immediate shipment when needed to Soviet Russia and liberated areas in western Europe.

International co-operation in *long-term* food planning also proceeded apace in 1942–43, through the deliberations of the United Nations Conference on Food and Agriculture.[1] That conference was noteworthy mainly for its emphasis on an important shift of policy —a shift away from international co-operation in restricting food production to co-operation in expanding the consumption of food, especially food of high nutritive value.

Wheat Prices

Price levels. — Over the past few years it has been impossible to generalize, except very broadly, about the levels of wheat prices in the different exporting countries. Under the influence of governmental efforts to support and raise wheat prices to producers, to "stabilize" prices to domestic millers, to sell for export at competitive world prices, and to divert surplus wheat to nonfood uses at prices even lower than those quoted for export, each country has had two or more different levels of wheat prices, rather than one basic level as in earlier years.

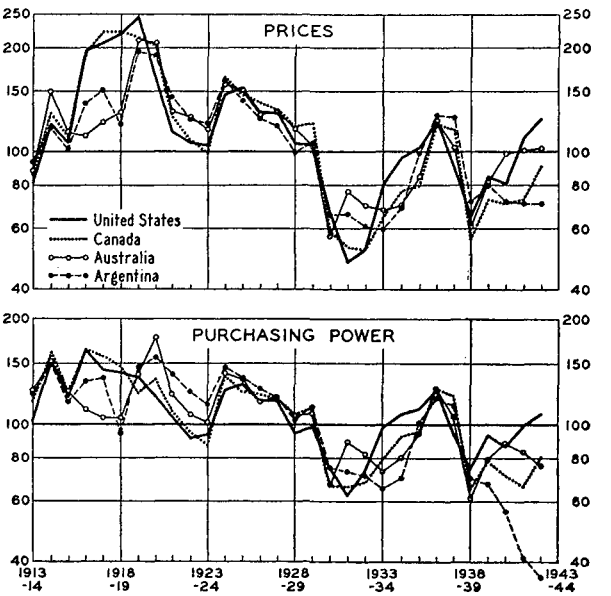
Chart 8, based so far as possible on cash prices in leading markets, shows some of these levels in terms of averages for the years 1924–25 to 1938–39. Unfortunately, in recent years the basic price figures do not represent the same type of price in each of the different countries: Buenos Aires prices reflect prices to producers; Kansas City prices better reflect prices to millers (at least to millers in the hard winter wheat belt); and Winnipeg prices more closely approximate prices for export. The Australian price series represents average export values throughout the period of years covered, though since 1939–40 the figures are partly nominal.

[1] On this subject, see J. F. Booth, "United Nations Conference on Food and Agriculture," *Economic Annalist*, XIII, August 1943, 33–37, *Federal Reserve Bulletin*, July 1943, pp. 609–12, *International Labor Review*, August 1943, pp. 139–56, *Department of State Bulletin* (U.S.), June 19, 1943, pp. 546–72, U.S. State Dept., *United Nations Conference on Food and Agriculture: Final Act and Section Reports* (Publication 1948, Conference Series 52, 1943).

Despite these differences, Chart 8 correctly shows the broad tendencies in wheat prices since 1913–14. It is clear, for example, that both the prices and the purchasing power of wheat have been lower during World War II than they were in World War I, when a world shortage of wheat existed. Moreover, the

Chart 8.—Price Indexes and Purchasing Power of Wheat in the Four Exporting Countries, Annually from 1913–14*

(Averages of prices and purchasing power in 1924–25 to 1938–39 = 100)



* August–July averages of No. 2 Hard Winter, Kansas City, No. 3 Manitoba, Winnipeg, and Buenos Aires cash. Sources as given for recent years in Table XXIII. For Australia, 1913–34, weighted average prices in principal Australian ports, from Australia, Royal Commission on the Wheat, Flour, and Bread Industries, *Second Report* (Canberra, 1934–35); from 1934–35, weighted averages of shippers' limits for growers' bagged and bulk lots, Sydney, Melbourne, and Adelaide (partly nominal from 1939–40) from *Monthly Summary of the Wheat Situation in Australia*. Wheat prices deflated by wholesale price indexes of the respective countries (1926 = 100) in calculation of purchasing power.

wheat prices of the past few years have been generally higher than the depression prices of 1930–34, but lower (except in the United States) than prices in 1936–38, when wheat supplies were again short. In 1942–43, the level of wheat prices and the purchasing power of wheat were particularly high in the United States. There wheat loan rates and prices were raised by legislative mandates in

the face of huge supplies.[1] In contrast, Argentina's wheat prices were notably low—in relation to average wholesale commodity prices, lower than in any other year of the three decades here considered. On the other hand, the extremely low purchasing power of Argentine wheat indicated in the chart for 1942–43 should be partly discounted, since it is largely attributable to the heavy weights given to non-agricultural, imported commodities in the wholesale price index.[2]

Argentina stands out as the exporting country in which governmental efforts to raise wheat prices to producers have been least aggressive. Since November 1941 the Argentine Grain Regulating Board has operated as a monopoly buyer of wheat from growers and a monopoly seller of wheat for domestic milling and export. For both 1941- and 1942-crop wheat (as also for 1940 wheat) the basic buying price of the GRB was 6.75 pesos per quintal, Buenos Aires (55 cents, U.S., per bushel), and the basic selling price to millers was 9.00 pesos per quintal (73 cents per bushel).[3] Not until late May were Argentine millers permitted to grind any 1942-crop wheat, and then their use of such wheat was limited to 30 per cent of their total grindings.[4] The gains made by the GRB on sales of wheat to domestic millers went to make up the losses incurred by the board on sales below cost for export, feed, and fuel.

On most of the wheat sold for export in 1942–43, however, the GRB appears to have made a profit, even after deduction of storage and transport costs. This is suggested by the accompanying table, which shows the board's export prices for Europe-Brazil. It is noteworthy that the prices for bulk wheat (which represented most of the exports) included a deposit of roughly half a peso for the use of bags for delivery. Thus, the net price obtained by the GRB for export wheat in bulk ranged between 6.40 and 6.60 pesos for 1940 wheat, between 7.60 and 7.80 pesos for 1941 wheat, and in July reached 8.70 pesos for first offers of the new high-quality 1942 crop. On exports to destinations other than Europe and Brazil, the prices demanded by the GRB were .40 peso higher.

PRICES OF THE GRB ON WHEAT FOR EXPORT TO EUROPE-BRAZIL*

(Pesos per quintal ex-dock)

Approximate date effective	Bulk wheat[a]		Bagged wheat[b]	
	1940 crop	1941 crop	1940 crop	1941 crop
1942				
Aug. 1.....	7.00	8.10	8.00	9.10
Sept. 22.....	6.90	8.10	7.90	9.10
Oct. 20.....	7.00	8.10	8.00	9.10
Dec. 20.....	7.10	8.10	8.10	9.10
1943				
Mar. 1.....	....	8.10	....	9.10
Apr. 20.....	....	8.20	....	9.20
May 25.....	....	8.30	....	9.30
July 1.....	....	8.30[c]	....	9.30[c]

* Data from *London Grain, Seed and Oil Reporter*, Friday issues. Dots indicate no quotation and, therefore, presumably no export offer.

[a] Prices for bulk grain include a deposit of about .50 peso for the use of bags for delivery; a corresponding refund is granted on return of the bags.

[b] Permits to export bagged grain granted only when loading conditions require.

[c] Export prices for 1942-crop wheat were first reported at this time, with bulk wheat quoted at 9.20 pesos, bagged at 10.20.

In contrast, the GRB clearly sustained losses on its sales of wheat for feed and on all the grain, including wheat, sold for fuel. Relatively little wheat was diverted to either purpose prior to August 1943. However, some inferior wheat from earlier crops was sold for feed in the drought areas during February–April 1943 at prices equal to the purchase price from farmers;[5] and on July 21, the GRB was authorized to sell 18.4 million bushels for feed at the reduced price of 4.50 pesos per quintal (36 cents, U.S. per bushel).[6] The

[1] On this point, see WHEAT STUDIES, September 1943, XX, 11–12.

[2] Between August 1939 and July 1943, the wholesale price index for Buenos Aires rose 98 per cent while the cost of living index rose only 6 per cent.

[3] Effective Aug. 15, 1943, the GRB ceased buying 1942 wheat and linseed. For the small amount of wheat left in farmers' hands there was no mill or export market, since millers and exporters were still required to buy all their wheat from the GRB.

[4] *Situation in Argentina* (First National Bank of Boston, Buenos Aires Branch), May 31, 1943, p. 2. The decree (No. 596) specifically authorizing this, however, seems not to have been issued until June 18 (*Boletin Informativo*, July 15, 1943, p. 311).

[5] *Situation in Argentina*, Feb. 22, 1943, p. 2.

[6] U.S. Dept. Agr. Release 231-44, Aug. 2, 1943.

same price was simultaneously established for authorized sales of 73.5 million bushels of wheat for fuel to the National Petroleum Board up to December 31, 1943.

In Australia, a governmental monopoly on wheat purchases and sales has been maintained since the beginning of the war. The different governments in power have ceaselessly struggled to raise returns to wheat growers in the face of mounting wheat stocks. In 1941–42 Australian wheat producers were guaranteed eventual payment of 3*s.* 10*d.* (about 62 cents, U.S.) per bushel for bagged wheat, *f.o.b. ports*, for marketings of 140 million bushels or less, with 2*s.* per bushel guaranteed on excess marketings from unlicensed acreage.[1] Many farmers complained that these payments, which had to cover all handling and transport charges to the ports, as well as increased wartime costs of farm production, did not leave enough to pay the farmers' own living expenses. For 1942–43, therefore, the level of payment was raised to 4*s.* (65 cents, U.S.) per bushel for bagged wheat, *net at country sidings*, on the first 3,000 bushels delivered by each grower. An initial advance of 2*s.* per bushel was paid on all additional marketings from licensed acreage. This meant a substantial increase in price for about 70 per cent of Australia's wheat farmers—those who had delivered 3,000 bushels or less from their recent crops—but no increase or an actual reduction in the average price received by large wheat producers.[2] It was officially anticipated that about 80 per cent of Australia's wheat growers would obtain a good living under the new price scheme.[3]

Per-bushel payments made to producers by the AWB for bagged wheat of the last four crops were as follows through September 1943 (bulk wheat payments roughly 2*d.* lower):[4]

Advance	1939 crop	1940 crop	1941 crop	1942 crop	
				Quota	Excess
	s. d.	*s. d.*	*s. d.*	*s. d.*	*s. d.*
Initial	2 10½[a]	3 0[a]	3 0[a]	4 0[b]	2 0[c]
Final total.	3 8[a]	3 11¼[a]	3 10[ad]	4 0[b]	.. ..[e]

[a] For wheat delivered at ports, freight charges paid by farmer.

[b] For wheat at country sidings (net to grower) on first 3,000 bushels delivered; presumably the initial advance represents the entire payment on such wheat.

[c] For wheat at country sidings (net to grower) on all "legitimate" wheat delivered in excess of 3,000 bushels.

[d] Amount guaranteed, of which 3*s.* 3*d.* had been paid through September 1943.

[e] No additional payment over the 2*s.* advance on marketings in excess of 3,000 bushels has been guaranteed, but this wheat has been pooled and will share pooled earnings above the 2*s.* initial advance.

Producers' payments have been reflected only roughly in the prices paid by Australian exporters and millers. The board's wheat price to millers for wheat to be ground for domestic consumption averaged 3*s.* 10½*d.* f.o.r. in 1942–43;[5] but millers had to pay an additional tax on such grindings, which brought up their total outlay per bushel to 5*s.* 2*d.*, the net charge that has been in force since December 1938. We infer that exporters and millers who bought AWB wheat for export purposes paid the same basic price, i.e. about 3*s.* 11*d.* f.o.r., but the board's price for export wheat may have been a penny or two higher than its price for wheat for domestic consumption. In contrast, f.a.q. wheat was sold to poultry and livestock raisers after April 24, 1942, at a 6*d.* discount under the board's regular selling price; this made such wheat available for feed at about 3*s.* 5*d.* (55 cents U.S.) per bushel. The 6*d.* difference was paid by the Commonwealth treasury on the theory that it was in the national interest to stimulate the production of pork and poultry products. Unmentioned, but presumably important, was the government's desire to reduce the country's heavy surplus of wheat.

The United States has long taken the lead in pushing wheat prices upward, largely through the mechanism of nonrecourse government loans to wheat producers. Chart 9 shows the successive sharp advances in wheat-loan rates since their establishment in 1938–39, the "parity" prices on which these rates

[1] We are still uncertain as to the payment guaranteed on excess marketings from *licensed* acreage.

[2] In the preceding year, 40,385 out of 57,859 Australian wheat growers (69.8 per cent) delivered 3,000 bushels or less, according to data in the *Monthly Summary of the Wheat Situation in Australia*, June 1943, VII, 3.

[3] *Commercial Intelligence Journal* (Canada, Dept. Trade and Commerce), Oct. 23, 1943, p. 318.

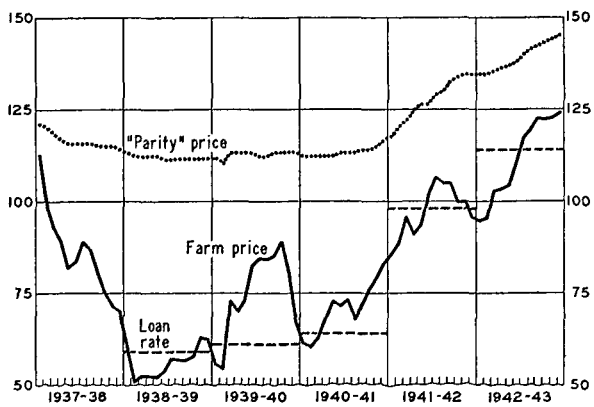
[4] Data from *Monthly Summary of the Wheat Situation in Australia*, June 1943, VII, 7, and later issues of *The Land* (Sydney, N.S.W.).

[5] *Monthly Summary of the Wheat Situation in Australia*, June 1943, VII, 3.

have been based, and the average farm prices of wheat that in recent years have been largely determined by the loan rates. The big increase in the loan rate for the 1941 crop was forced upon the Administration by Congress, which specified in legislation of May 1941 that wheat-loan rates should be set at 85 per cent of the wheat-parity price at the time of the establishment of the loan rate.[1] The two subsequent increases in the basic loan rate—to $1.14 for 1942 wheat and to $1.23 for 1943—reflected the upward trend of the parity price of wheat.

CHART 9.—UNITED STATES MONTHLY AVERAGE FARM PRICES, PARITY PRICES, AND LOAN RATES FOR WHEAT, FROM JULY 1937*

(Cents per bushel)



* Data of the Bureau of Agricultural Economics.

During July–June 1942–43 the weighted average farm price of wheat in the United States was $1.06—the highest since 1927–28. In addition, farmers who co-operated in the AAA program received conservation payments amounting to 9.9 cents per bushel on the "normal yields" of their allotted wheat acreages and parity payments equal to 13.5 cents per bushel on the same yield basis (Table XXIV). These payments, added to the high prices received for the large 1942 crop, brought the total income of wheat growers in this country to the highest level in at least 23 years. Even with allowance for increased costs of labor and materials, the *net* income attributable to wheat must have been abnormally high, and indeed, unwarrantably so in view of the huge supplies of wheat available and the position of wheat in current war-production plans.

It should be emphasized, however, that wheat was only one of many agricultural commodities similarly overpriced in the United States in 1942–43—overpriced largely as a result of pressure of agrarian organizations on legislative (to a lesser extent on administrative) price policies. The implications of such overpricing were extremely serious for the government's rationing and price-control programs, for the operation of industries processing farm products, and for postwar price and farming readjustments.[2]

The conflict between the United States Congress and the Administration over fundamental price policies became increasingly serious during 1942–43. Congress persisted in its efforts to raise agricultural prices even after passing the Administration-sponsored Economic Stabilization Act (Public 729, 77th Congress, approved October 2, 1942). The Administration, operating mainly through executive orders and the OPA, strenuously tried to hold down retail prices, especially prices of major "cost-of-living" items such as flour and bread. Retail-ceiling prices on bread had been imposed in May 1942 at levels prevailing in the preceding March. Immediately after approval of the new price-control legislation, the President issued Executive Order 9250, which specified (1) that so far as practicable the prices of agricultural commodities and commodities processed therefrom should be stabilized at the levels prevailing on September 15, and (2) that in the establishment and maintenance of ceilings on these products, "appropriate deductions" should be made from parity prices for conservation and parity payments and subsidies. The OPA established temporary flour-price ceilings effective October 5 at the highest prices charged by individual millers and blenders from September 28 to October 2. These individual ceilings were superseded on January 4, 1943 by "permanent" regional ceilings stated in spe-

[1] The wheat-loan rates of 1938, 1939, and 1940 represented 52, 55, and 57 per cent, respectively, of the current parity prices.

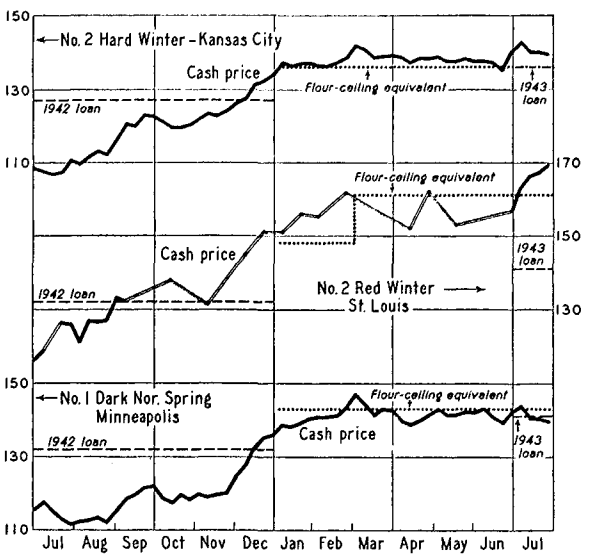
[2] See WHEAT STUDIES, September 1943, XX, 12.

cific monetary terms[1]—ceilings that averaged about 10 per cent higher than the earlier temporary ones.

The new flour ceilings were based on the following primary market prices of wheat per bushel: Minneapolis, No. 1 Dark Northern Spring, $1.43; Kansas City, No. 2 Hard Winter, $1.36; Gulf, No. 2 Hard Winter, $1.43; St. Louis, No. 2 Red Winter, $1.48.[2] These are shown in Chart 10 in comparison with weekly average prices and the corresponding wheat-loan levels of 1942 and 1943. The flour

CHART 10.—WHEAT PRICES IN UNITED STATES MARKETS, AND CORRESPONDING LOAN VALUES AND FLOUR-CEILING EQUIVALENTS, 1942–43*

(Cents per bushel)



* Weighted average prices as described in Table XXIII. Loan values as announced by the CCC. Flour-ceiling equivalents from Millers National Federation, *Bulletin*, Oct. 25, 1943, p. 1.

ceilings established in early January went far toward relieving the "price squeeze" that millers had been subjected to in the preceding month, when wheat prices rose above the levels at which many millers could sell flour profitably at the "temporary" ceiling prices then in force. But even the revised ceilings did not give full relief to millers of soft red winter wheat, who were further handicapped by market shortage of such wheat[3] and by the continuing advance of soft wheat prices in January–February. This complex situation was met (1) by CCC sales of soft red and Pacific soft white wheats in eastern markets at the parity price of soft red winter, basis Kansas City, St. Louis, and Chicago,[4] and (2) by upward revision, effective March 2, of the soft-winter-wheat flour ceiling to the wheat equivalent value of $1.61 at St. Louis.[5]

Subsequent price advances in all markets pushed hard winter wheat prices at Kansas City appreciably above the flour-ceiling equivalent in that market. And for short periods St. Louis and Minneapolis prices rose to levels that squeezed flour millers. These developments might have been followed by further increases in flour ceilings, but the President's "hold-the-line" order of April 8 made such increases impossible. In the case of soft red winter wheat, some relief could have been afforded by the establishment of a price ceiling on that type of wheat. A ceiling at the parity level, such as was finally imposed on soft wheats effective November 6, 1943 ($1.63½ plus .01½ commission charges for No. 2 Red Winter at St. Louis), would have prevented most of the squeeze on millers of soft wheat that occurred during July.[6]

Millers in the United States bought their wheat at prevailing market prices during 1942–43. The United States price program did not provide drawbacks or subsidies to millers (as did the Canadian program), nor did it impose any milling charge or tax (as

[1] Maximum Price Regulation (MPR) 296. *Federal Register*, Jan. 5, 1943, pp. 158–63.

[2] Millers National Federation, *Bulletin*, Oct. 25, 1943, p. 1.

[3] With regard to the shortage of soft red wheat, see WHEAT STUDIES, September 1943, XX, Chart 4 and discussion, p. 8.

[4] This was authorized by Secretary Wickard on Jan. 13. U.S. Dept. Agr. Release 1340-43, Jan. 13, 1943.

[5] Amendment 1 to MPR 296. *Federal Register*, March 2, 1943, p. 2598. This amendment did not apply to flour milled in the Pacific Northwest.

[6] Such a ceiling was proposed in the spring by OPA officials and its adoption was long anticipated by the trade. Presumably an important problem associated with the delay was whether the wheat ceiling should be set at full parity price (the minimum level at which the CCC could sell wheat) or at parity price minus "appropriate deductions" for conservation and parity payments—the specific basis specified in the President's Executive Order 9250 (p. 56). Millers, concerned over a possible squeeze that could not be relieved by sales of wheat by the CCC, favored wheat ceilings at full parity prices (see WHEAT STUDIES, May 1943, XIX, 211).

did the Argentine and Australian schemes). In contrast, American exporters could secure wheat for export as grain or flour at prices considerably below current market quotations: typically, the export subsidies amounted to price reductions of 25–45 cents per bushel. Similar or larger reductions were available on CCC wheat purchased for feed or alcohol production (pp. 45, 46). The discounts for feed typically amounted to 35–45 cents, those for alcohol to 45–60 cents.

In Canada, the government provided that wheat farmers should be paid by the CWB an initial price of 90 cents (Can.) per bushel for No. 1 Northern wheat of the 1942 crop, basis Fort William – Port Arthur or Vancouver. This was 20 cents higher than the initial price established for each of the three preceding years. It reflected, as did prices in the United States, the pressure of agrarian groups on government policy; but it was less unwarrantably high than United States wheat prices and accordingly presented fewer serious problems of adjustment. Under this guarantee and later evidence of an expanding export demand, the average farm price of Canadian wheat in 1942–43 must have reached 70 cents (Can.) per bushel[1]—the highest farm price since 1937–38 and the third highest in more than a decade.

Had Canadian wheat growers been able to obtain this price for their total wheat production, their incomes would indeed have been unjustifiably large in 1942–43; but the prevailing limitations on wheat marketings made it impossible for such a high level of income to be realized. Nevertheless, the cash income farmers received from their marketed wheat came to $179,606,000 in 1942–43 as against $118,711,000 in 1941–42 and $132,597,000 in 1940–41.[2] This increase, though substantial, was much smaller than the increases in income received for Canadian livestock and dairy products. Many wheat farmers benefited from the higher livestock prices, both through the livestock they raised on their farms (and fed with home-grown wheat or other grain) and through the higher prices they received for feed grains and forage crops grown on former wheat land. Finally, the incomes of Canadian wheat farmers were materially supplemented by payments under the Wheat Reduction Act: these totaled $29,654,228 (Can.) on 1941 plantings and $24,526,362 for 1942.[2] Prairie Farm Assistance payments, which had also added substantially to farmers' incomes in 1941–42 ($13,680,743), were not required in 1942–43 because of the generally favorable growing conditions for the 1942 crop. In total, the gross income of Canadian *wheat* farmers must have been fairly large in 1942–43 and their net income fairly satisfactory. And all Canadian farmers *as a group* probably enjoyed the greatest degree of prosperity they had known for several decades. Moreover, they can look forward with confidence to a more sharply inflated income in 1943–44.

Canadian millers, bound to deliver flour at ceiling prices established when wheat prices were much lower, met this obligation with the aid of government subsidies. The Canadian flour-ceiling-equivalent price of wheat was tentatively set at 77⅜ cents (Can.) for No. 1 Northern at Fort William, for purposes of calculating millers' subsidies. Such subsidies, termed "drawbacks," increased moderately during the first half of the crop year, rising from 11⅝ to 13¼ cents (Can.) per bushel between August 1942 and February 1943. During the following six months, however, the sharp price advances at Winnipeg raised the drawbacks in successive months to 19⅞, 21⅝, 21⅝, 24⅛, and 31⅞ cents respectively. Still further increases occurred after the end of the crop year.

Purchasers of Western Canadian wheat for feed also received federal government subsidies during 1942–43. The rate of drawback for wheat for feed appears to have remained constant during the year at 8 cents (Can.) per bushel. More important to livestock feeders in the five eastern provinces and British Columbia were the federal freight-assistance payments. For the Montreal freight zone such payments amounted to 13.5 cents

[1] Through December 1942 the average was 66 cents.

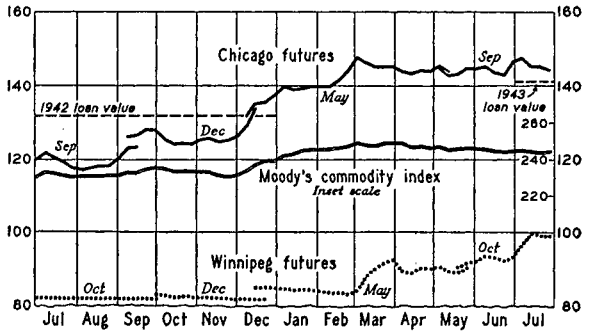
[2] Information for the last two years supplied by letter from James McAnsh, Statistician, Agricultural Branch of the Dominion Bureau of Statistics. Income for 1940–41 based on statement in *Quarterly Bulletin of Agricultural Statistics* (Dominion Bureau of Statistics), January–March 1942, XXXV, 39.

per bushel on Western feed wheat; for more distant zones they were larger. On July 1, 1943 a new Dominion subsidy was introduced to encourage livestock producers in eastern Canada to buy their winter feed supplies of Western wheat, oats, and barley in the summer and autumn months. The new subsidy was set at 3 cents per bushel for July, and at rates one-half cent lower for each successive later month.[1]

Course of prices.—In earlier issues we have discussed at some length the course of wheat futures and cash prices in North American markets during 1942–43.[2] Here we shall confine attention to the principal influences responsible for the broad price movements indicated by the weekly average prices shown in Chart 11.

CHART 11.—WEEKLY PRICES OF SELECTED WHEAT FUTURES AT CHICAGO AND WINNIPEG, CORRESPONDING LOAN VALUES AT CHICAGO, AND PRICE INDEXES OF SENSITIVE COMMODITIES, 1942–43*

(U.S. cents per bushel; per cent)



* Averages of daily closing prices from *Chicago Journal of Commerce* and Winnipeg *Grain Trade News*. Loan values as announced by the CCC.

In the early months of the crop year, Chicago futures reflected marked weakness in relation to current loan values largely because of unprecedented storage congestion. The lowest prices of the year were recorded in early August. Thereafter Chicago futures moved irregularly upward to a peak at the beginning of March. The early part of the rise mainly reflected moderate diversion of new wheat to the CCC under government loans (Chart 4, p. 43) and the willingness of farmers to hold unpledged wheat in expectation of higher prices. Aside from the strengthening influence of the current high loan value of wheat, there was widespread anticipation of continuing pressure toward general price inflation and, specifically, of further Congressional action to raise wheat prices further.[3] By mid-December, Chicago futures had risen above the corresponding terminal loan value, but prices continued upward in response to accumulating evidence of heavy utilization of wheat for nonfood uses (p. 45) and sporadically strengthened prospects for price-raising legislation.[4] The peak prices reached in early March were high enough to encourage redemption and liquidation of considerable quantities of loan wheat as well as heavy marketings of unpledged grain. Many traders feared that higher prices would bring a burdensome flow of wheat to the markets—a fear that effectively put a ceiling on Chicago futures prices through April. Thereafter, reduced prospects for new legislative instructions on parity-price[5] calculations, and general anticipation that the 1943 loan rate would be set close to current wheat values, kept futures prices from advancing in the face of expanding evidence of current heavy use of wheat for feed and alcohol production.

[1] *Canadian Coarse Grains* (Dominion Bureau of Statistics), Aug. 16, 1943, p. 5.

[2] WHEAT STUDIES, September 1942, XIX, 6–7; January 1943, XIX, 126–29, 130–31; May 1943, XIX, 208–11, 214–15; September 1943, XX, 14.

[3] The two legislative measures that received most attention were: (1) the Pace bill (H.R. 1408, 78th Cong., introduced Jan. 21), which required inclusion of farm wages in calculations of parity prices; and (2) the Bankhead bill (S. 660, 78th Cong., introduced Feb. 4), which prohibited inclusion of governmental payments to farmers in calculations of parity, maximum, or comparable prices. The latter bill was basically the same as one which had been proposed but defeated as an amendment to the Price-Control Act of Oct. 2, 1942.

[4] The most important legislative development was passage of the Bankhead bill by the Senate on Feb. 25.

[5] The amended Bankhead bill, passed by the House March 24 and by the Senate March 26, was vetoed by the President on April 2. Instead of being repassed by the Senate during the next few days (as many had anticipated), it was referred back to the originating committee on April 7 for reconsideration. The President's "hold-the-line order" of April 8 made early revoting on the bill politically inexpedient. Meanwhile, the Pace bill had been shelved, partly because agrarian groups had begun to fear its possible "boomerang" effects in later years.

II. BRITISH ISLES AND THE USSR

About half of the wheat and flour that moved overseas from the four chief exporting countries went to the United Kingdom. The next largest overseas importer was probably the USSR. Both countries restricted imports of wheat to reserve shipping for war materials and other army supplies, but the *degree* of restriction on domestic consumption of wheat was much greater in Soviet Russia. Moreover, only in Russia were other civilian food supplies seriously deficient.

The British Isles

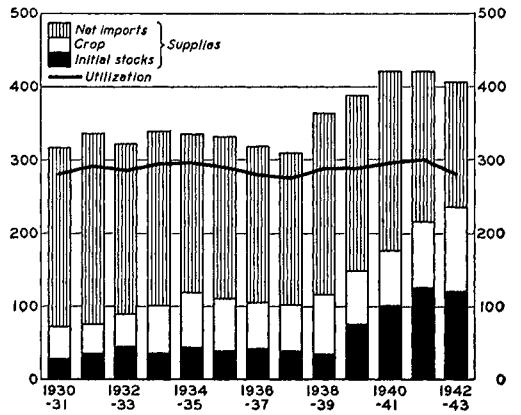
Since the beginning of the war, officials in both the United Kingdom and Eire have been endeavoring to increase the domestic production of basic foods and feeds. These efforts have been directed toward the larger objective of providing adequate supplies of good nutritious food with the least possible demand on cargo space for imports.

Under the stimulus of acreage subsidies, favorable prices for major crops, and guaranteed markets, the area tilled in the United Kingdom has expanded 53 per cent since prewar years and the agricultural production (in terms of calories) has increased 70 per cent.[1] Specifically, the wheat area sown for 1942 was 35.6 per cent above the prewar average (years not designated), and the acreage for 1943 some 25 per cent higher still. In Eire there was a similarly great expansion in wheat area, from 225,000 acres on the average in 1935–39 to 575,000 acres in 1942 and to over 650,000 (*planned*) in 1943.

On the basis of acreage alone, one would assume that the United Kingdom and Eire harvested large wheat crops in 1942. The unusually favorable weather conditions of 1941–42, scattered reports of exceptional harvest yields per acre, and Eire's official production estimate of 19 million bushels strengthen this assumption. Indeed, it seems fairly probable that the total wheat harvest of the British Isles may have reached 115 million bushels or so in 1942—the highest figure in 69 years. The aggregate initial supplies of wheat (crops plus initial stocks) were relatively even larger, in reflection of the heavy war reserves carried by the United Kingdom and in spite of Eire's depleted stocks. Comparisons for the past 13 years are shown by the solid black and white sections of the bars in Chart 12.

Chart 12.—Wheat Supplies and Utilization in the British Isles, from 1930–31*

(*Million bushels*)



* Data as shown for recent years in Table XXII.

Through 1942–43 the policy of the British government continued to be to import as much foreign wheat as was needed to supply the full demand of the British public for unrationed bread and to maintain substantial war reserves. But particularly since March 1942 there has been increasing emphasis on changing the ingredients of bread in such a way as to reduce requirements for *foreign* wheat. This aspect of the government's program was a major feature of the crop year under review.

The first major change in the British loaf was made in the spring of 1942, when the extraction rate of wheat milled in the United Kingdom was raised from 75 to 85 per cent. Four months later, in July, the maximum proportion of white flour allowed for admixture purposes in mills and bakeries (separately) was reduced from 25 per cent to 12½.[2]

[1] Great Britain, Ministry of Agriculture, *Agriculture*, August 1943, pp. 217–18.

[2] This regulation, effective July 13, 1942, meant that the maximum proportion of white flour allowed in any specific lot of bread was reduced from 43 per cent to 23, implying an increase in the *average* extraction rate for the flour used for such bread from 78½ per cent to 81½.

This allowance remained unchanged until February 21, 1943, when the separate allocations of white flour to bakers were discontinued and the maximum percentage allowed millers was cut to 7½.[1] During the remainder of the crop year white-flour distributions to millers apparently ranged between 7½ and 10 per cent, depending on the changing level and age of the government's stocks of white flour.

Meanwhile, the British Ministry of Food ordered admixtures of coarse-grain flours with wheat flour for the first time since World War I.[2] The intention to order such admixtures was announced in late November 1942,[3] and during the following two months arrangements were quietly made in various districts for the addition of small amounts of barley and oats in millers' grists. On January 20, 1943, the Parliamentary Secretary of the Ministry of Food reported that "the proportion of diluents, although it may vary slightly in different areas does not, at present, in general exceed 5 per cent."[4] By March some districts were apparently using as much as 10 per cent diluents, and by late June a 10 per cent admixture was perhaps common.[5]

These forced changes in bread quality and the simultaneous efforts of the Ministry of Food to encourage the British people to substitute home-grown potatoes for bread as a "filler" in their diets did not result in as much saving of wheat as had been hoped for. Statements in Parliament and in the trade press reflect official disappointment over the slow decline in flour consumption during the winter and spring of 1942–43.[6] Probably the peak of per capita flour consumption was reached during the calendar year 1942, with some reduction thereafter; but the evidence thus far available to us suggests that the reduction has been moderate.

The expansion of flour consumption in Britain since the beginning of the war has been an important factor in maintaining the prewar level of wheat utilization through the war years. In the summer of 1941 the Parliamentary Secretary of the Ministry of Food reported that the consumption of all types of bread in Britain had increased 20 per cent.[7] More recently (January 1943) a British weekly publication reported that the per capita consumption of flour had apparently increased from 8½ ounces per day before the war to 11 ounces or more[8]—an increase of almost 30 per cent. This increase, in terms of wheat milled at the prewar extraction rate of about 70 per cent, would mean a demand for an additional 65 million bushels. At the higher rate of extraction in 1942–43 (perhaps 82–83 per cent as an average for the crop year), and with barley and oats used to take the place of 5 to 10 per cent of the grain required for milling during February–July 1943, the net increase in the demand for wheat for flour would be no more than 15 million bushels. This figure would be enlarged moderately by the extra 2 to 3 million bushels used for seed in 1942–43 and by the flour Britain furnished American troops (probably something like 2 million bushels in terms of wheat).[9] On the other hand, regulations for-

[1] This implied a minimum average extraction of 83.9 per cent.

[2] Broomhall's *Corn Trade News* (Dec. 23, 1942, p. 514) reported that in March 1918 the minimum required admixture of coarse flours (made from rye, barley, rice, maize, beans, and potatoes) was 30 per cent and the maximum permitted was 60 per cent. The actual *average* admixture of other cereals reached a high point of 32.6 per cent in the four weeks ending June 22, 1918 (Sir William H. Beveridge, *British Food Control*, Oxford, 1928, p. 375).

[3] *Corn Trade News*, Nov. 25, 1942, p. 479.

[4] Great Britain, *Parliamentary Debates, Commons, 1942–43*, Vol. 386, col. 238. Under the *Flour Order 1943* (Jan. 4, 1943) and existing orders of the Ministry of Food, the permitted ingredients of National Flour in late January were wheat flour of 85 per cent extraction, imported white flour, oats products, barley, rye, milk powder, and calcium. In addition, bakers were permitted to mix potatoes or potato flour with National Flour and the allotted quantities of imported white flour.

[5] See *London Grain, Seed and Oil Reporter*, Mar. 12, 1943, p. 257, and June 24, 1943, p. 625. According to the latter reference, both barley and oats were being used in most areas, the percentage of oats not exceeding 3 per cent of the grist at any time. By mid-September, a "compulsory fixed percentage of 10 per cent diluents" was reported (*ibid.*, Sept. 14, 1943, p. 273).

[6] Great Britain, *Parliamentary Debates, Commons, 1942–43*, Vol. 387, col. 1646.

[7] *Northwestern Miller*, July 2, 1941, p. 53.

[8] Hulton Press, Ltd., London, *Picture Post*, Jan. 2, 1943, p. 22. This issue was distributed in the United States by the British Information Services.

[9] According to the *Eighth Quarterly Report to Congress on Lend-Lease Operations: for the Period Ended March 11, 1943* (p. 19), the United Kingdom is furnishing American troops in the European theater of war

bidding the feeding of millable wheat may have saved 20–30 million bushels of wheat in 1942–43, as compared with the customary feed use in prewar years.[1] Thus, the total utilization of wheat in the United Kingdom was probably slightly, but not materially, lower in 1942–43 than it had normally been before the war. The reduction from the higher level of 1941–42 was more substantial. These general relationships are apparent in Chart 12, since the course of wheat utilization in the British Isles as a whole is dominated by that in the United Kingdom.

In Eire also, wheat utilization was well maintained in 1942–43. Bread continued to be sold free of ration cards; coarse-flour admixtures were not required; and wheat was directly saved only by the 100 per cent extraction rate that had been in force since late in the preceding crop year. At the prevailing level of utilization, Eire was almost self-sufficient in 1942–43, because of her large domestic crop. During July–June she reportedly purchased about 2.5 million bushels of Canadian wheat—a figure which may be taken to represent fairly well her total August–July net imports.[2] With such imports added to a large domestic crop, Eire was in a position to prevent a recurrence of the year-end shortage of wheat that had been so disturbing in the preceding crop year. In addition, the increased supplies presumably enabled Eire officials to begin rebuilding the government's depleted wheat reserves.

There is no direct information available as to the volume of wheat and flour imports into the United Kingdom since the beginning of the war. Moreover, of the various exporting countries that ship wheat to the United Kingdom, only Argentina has continued to report the destinations of her shipments. During July–June 1942–43 Argentine shipments to the United Kingdom totaled only 4.8 million bushels and no shipments "to orders" were reported. There is good evidence that lend-lease shipments to Britain from the United States were negligible and that Australian exports were small. Of the total Canadian exports of 203 million bushels in July–June 1942–43, we infer that something over a sixth went to European neutrals, the USSR, the United States, and other non-European countries, while the remainder—less than five-sixths—went to the British Isles. After deduction of losses through sinkings—much smaller than in the preceding year—the net imports of the British Isles seem likely to have approximated 170 million bushels in August–July. Such imports would have been the smallest since 1917–18, reflecting the substantial success of the Ministry of Food's program for cutting wheat imports while providing ample supplies of cheap, unrationed bread.

In spite of sharp contractions of wheat and flour imports, the British Isles must have had only a little less domestic and foreign wheat available in 1942–43 than in the two preceding years of heavy supplies (Chart 12, p. 60). And since the utilization was probably correspondingly reduced, year-end stocks of wheat apparently stood at about the same high level as in 1941 and 1942. In late August 1943, the Minister of Food stated that Britain's food stocks had again been built up to a high level in preparation "for the time . . . when shipping will be diverted to serve Allied arms invading the Continent."[3] This favorable stocks position was in sharp contrast to that prevailing in the late winter and early spring of 1943, after British reserves had been drawn on for some weeks to meet current demands for consumption while Allied ships were carrying supplies and troops to Africa.[4] The earlier

with 148 million pounds of flour in 1943. This is equivalent to 3.6 million bushels of wheat, milled at 70 per cent extraction, or 3.0 million at 82 per cent extraction.

[1] Regulations during the past few years have specified that producers may use for feed only tailings up to "5 per cent of the total weight of wheat and tailings" and additional quantities of nonmillable wheat certified as such by a Local Wheat Committee. *Home Grown Wheat (Control and Prices) Order 1942*, dated July 29, 1942.

[2] Presumably her total gross purchases were somewhat larger, but shipping losses and other waste may have offset the increase.

[3] *New York Times*, Aug. 28, 1943, p. 2.

[4] Prime Minister Churchill admitted on Feb. 9, 1943, that Britain was dipping into her food reserves (Great Britain, *Parliamentary Debates, Commons, 1942–43*, Vol. 386, col. 1163) and the Parliamentary Secretary to the Ministry of Food told the House of Commons on May 13 that for three months after the Allied landings in Northern Africa the shipping available to the Ministry was barely sufficient to feed the population of Britain (*ibid.*, Vol. 389, col. 812).

higher level of stocks was restored by extremely heavy shipments of wheat and other foods to Britain during April–July.

Consumers in both the United Kingdom and Eire continued to benefit from subsidized bread prices in 1942–43. In the United Kingdom, £145,000,000 (net) were paid out of the national treasury during the year ending March 31, 1943 to keep down the prices of flour, potatoes, milk, bacon, meat, sugar, eggs, canned fish, and tea.[1] In the preceding year, corresponding food-subsidy payments had amounted to £96,000,000, with £29,397,078 paid to flour millers and £6,608,336 to bread bakers.[2] The subsidy payments on flour and bread during April–March 1942–43 (presumably lower) have apparently not been made public; but they were reported to have represented price savings to consumers of 2*d.* per quartern loaf of bread and of 3½*d.* per 7 pounds of flour.[3]

These subsidies had made it possible for bread to be sold during October–August 1941–42 at 8*d.* per four-pound loaf—the lowest price in seven years. But on September 20, 1942, the standard price of bread was raised to 9*d.*, mainly to support the campaign of the Ministry of Food to discourage bread consumption, though partly to pass on to consumers the increases in domestic wheat prices announced for 1942–43. At the same time, the price of National Flour was raised from 33*s.* 3*d.* per sack to 38*s.* 3*d.* The new bread and flour prices were regarded as sufficiently favorable, in view of other baking costs, to warrant cancellation of the temporary additional subsidy to bakers of 2*s.* per sack on the first eight sacks of flour used for bread. Thereafter the bread subsidy continued to be at the constant rate of 7*s.* 9*d.* per sack for all flour used for bread making.[5]

In Eire, too, bread and flour prices were raised in September 1942. Effective September 14, the official price of flour was increased from 52*s.* 6*d.* per sack to 60*s.*, and a few days thereafter the price of bread was raised from 1*s.* to 1*s.* 1*d.* per quartern loaf. These changes were made to keep Eire's national treasury from having to bear the burden of the increases in wheat prices promised domestic producers for 1942–43. Under the new official prices for wheat, flour, and bread, an aggregate national subsidy of almost £2,000,000 seemed to be indicated, with the rate of subsidy the same as in the preceding year.[6]

THE USSR

Not until the summer of 1942 did the penetration of Axis troops into Soviet Russia seriously threaten the general food position of the unconquered areas. Earlier losses of territory had resulted in a very considerable deficit of sugar and in a lesser deficiency of lard and pork; but the bread-grain position (fortified by substantial reserves) had remained secure. For Soviet Russia, where bread ordinarily furnishes about three-fourths of the food calories of the population, the supply of bread grains primarily determines the ease or tightness of the food position in general. Thus, up to the time the German army renewed its offensive in June 1942, the food position of the unconquered areas had not seriously deteriorated.

Between June and November 1942, however, Axis forces took control of new areas in the Don River valley and most of the North Caucasus. These sections had been the major grain-surplus areas of European Russia. Together with the Ukraine, they had supplied most of the food surpluses required by the northern industrial regions and Transcaucasia. However, at the line of maximum German penetration in 1942 (see map) the food position of the unconquered Soviet areas, though extremely difficult, was not really critical.

[1] Report of the Parliamentary Secretary of the Ministry of Food, May 13 (*ibid.*, Vol. 389, col. 812).

[2] *Corn Trade News*, May 12, 1943, p. 172.

[3] *Ibid.*, June 9, 1943, p. 214.

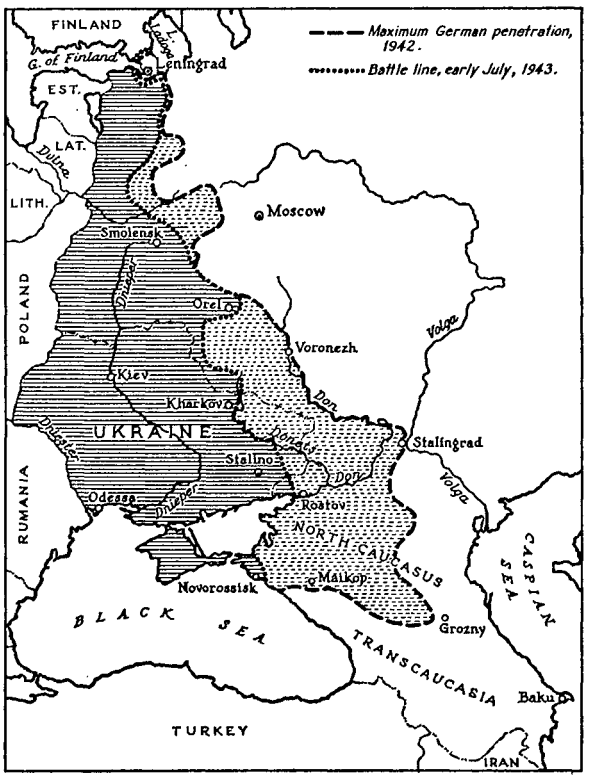
[4] The initial guaranteed price of wheat to producers had been raised from 14*s.* 6*d.* per cwt. for 1941 wheat to 16*s.* for 1942 wheat (see Table XXV for figures for earlier years). A supplementary payment of £2 per acre was made for wheat harvested in either year on land previously uncultivated.

[5] This rate had been established in June 1942, but, pending an investigation of bakers' costs, an additional temporary subsidy of 2*s.* per sack on the first eight sacks of flour used was then allowed. The temporary subsidy was extended month by month until it was finally withdrawn in December 1942, retroactive to November 14.

[6] *London Grain, Seed and Oil Reporter*, Sept. 9, 1942, p. 257; *Milling*, Sept. 19, 1942, p. 110.

From the new crops[1] and former reserves, the area under Soviet control on November 1, 1942 probably had available 85–90 per cent of the bread-grain and total grain supplies that would normally be used by the people in that area (including some 10 million civilians, evacuated east from the territory taken over by the Germans, and several million soldiers from that territory).

GERMAN OCCUPATION OF RUSSIAN TERRITORY, 1942–43*



* Prepared from news dispatches.

A 10–15 per cent deficiency in per capita grain supplies might not be serious under ordinary conditions. But under the conditions prevailing in 1942–43 it was definitely serious, if not critical. These changed conditions included: (1) the priority food demands of an enlarged army; (2) increased per capita civilian needs for food, based on greater physical activity and exposure to cold and other wartime hardships; and (3) great deficiencies in the supplies of sugar, lard, pork, other meat, and vegetable oils. Furthermore, difficult transport conditions made the grain and food shortages in some localities much more serious than over-all percentage figures on supplies would suggest.

While the grain and general food positions of the areas under Soviet control were already serious at the 1942 line of maximum German penetration, they rapidly became critical as the Soviet armies swept westward again in a powerful winter counter-offensive. The territory regained by the Russians during November–June 1942–43 held something like 10 million persons, who were left on devastated lands with critically inadequate supplies of food. The feeding of these liberated people thus became a pressing obligation of the Soviet government, whose food stocks were seriously short even in relation to the urgent needs of the population of 120–125 million in the areas not subjected to German control in 1942. This new demand on Soviet food supplies presumably resulted in acute food difficulties—in widespread hunger among the civilian population (especially city inhabitants) and in reduced efficiency of many workers. When the records of the present war in Russia are finally published, they are likely to disclose extensive famine conditions in the winter and spring of 1943 in many Soviet-controlled localities. Indeed, it would not be surprising if such records would disclose higher civilian death rates in certain cities of Soviet Russia in January–June 1943 than had characterized Athens-Piraeus at the height of the Greek famine in the preceding year.

In retrospect, the shipments of food made by the United Nations to the Soviet Union during 1942–43 appear pitifully small in relation to the enormous and pressing needs of that country. It is true that almost nothing is publicly known about the volume of food shipments to the USSR sponsored by Britain and other nations of the British Commonwealth. But except for exports of 8–9 million bushels of Canadian wheat,[2] these were pre-

[1] We infer that the 1942 bread-grain crop was smaller than either of the two preceding crops and only about average in size.

[2] On Sept. 8, 1942 credit arrangements were made for Soviet purchases of up to 9 million bushels of Canadian wheat. On June 9, 1943, however, the *Winnipeg Free Press* (p. 1) reported that only 7.5 million bushels of Canadian wheat had been shipped to Russian ports under that agreement.

sumably small—materially smaller than the lend-lease food shipments to Russia from the United States. Even the latter came to less than a million tons during July–June 1942–43. And of this amount almost two-thirds was apparently shipped during January–June, when for the first time food was given the same shipping priority as direct war materials. Lend-lease shipments of food and other agricultural products to the Soviet Union cost $230,997,000 in January–June 1943, as compared with only $184,814,000 during the whole of the calendar year 1942.[1]

Little information is available on the commodity make-up of United States food shipments to Russia during July–June 1942–43. We infer that the USSR obtained the bulk of all the lend-lease wheat and wheat products shipped from the United States during those months. Since the total delivered for lend-lease shipments came to 11 million bushels in terms of wheat grain, perhaps about 8 million went to the USSR. Concurrent lend-lease exports to Russia of canned and cured meats were presumably even more important in both tonnage and value;[2] and animal and vegetable fats and oils, as well as Cuban sugar, undoubtedly bulked large in the lend-lease movement. Almost all of these foods went to the Russian army and not to Russian civilians.[3]

The German-occupied portion of Russia, not discussed above, had its own peculiar food problems. Normally the Soviet territory held by Germany in June 1942 was a food-surplus area, with the margin of surplus relatively small except in sugar, pork, and lard. By the end of October 1942 the German army was occupying Soviet lands that normally produced even larger food surpluses—particularly of grain and oilseeds. But there is fair evidence that these fertile agricultural areas did not provide large quantities of food for shipment back to Germany in 1942–43. Even German sources claim grain shipments from occupied Russia of scarcely more than a million tons in 1942 (probably mostly barley and corn, with little bread grain).[4] And the prolonged silence of the German press that followed the great radio-press hubbub in October 1942 over the "long train loads" of food arriving in Berlin from Russia strengthens the conviction that German food gains in occupied Russia were moderate or small. Finally, this view is confirmed by a recent statement of the British Ministry of Economic Warfare, which indicates that Germany obtained from the Ukraine and other Russian areas during the preceding year very little food in addition to shipments of some 30,000 tons of oilseeds and the basic foods required to help feed the 3 to 4 million German troops on the Eastern front.[5]

That German occupation authorities were not able to extract larger quantities of food from the southern agricultural areas of the USSR presumably reflects the effectiveness of the "scorched-earth" methods of the Soviet Army and the disorganized state of agriculture in the Ukraine in 1941–42. Even German sources admitted that the winter-grain area sown in the Ukraine in the fall of 1941 was only 50–60 per cent of the prewar acreage.[6] And the planting of spring crops was certainly hindered by a short spring, and by lack of machinery, farm implements, horses, and workers willing to co-operate.

We infer that even the moderate amounts of food that German authorities took from the occupied areas left insufficient supplies for the reduced number of civilian inhabitants of those areas. Indeed, hunger and famine

[1] This statement and the two preceding ones are based on information given in the *Eleventh Report to Congress on Lend-Lease Operations: for the Period Ended July 31, 1943*, esp. pp. 19–20.

[2] Although data by commodities and destinations are not available for July–June 1942–43, the reported shipments to the USSR during October 1941 to April 1943 furnish some indication of the relative tonnage importance of the various commodities. These shipments included among other foods the following, in thousand tons: (1) wheat and wheat products (mainly flour), 233; (2) canned and other meat, 286; (3) lard and vegetable oil, 158; (4) dried fruits and vegetables, 99. Office of War Information, Press Release 2032, June 14, 1943.

[3] This statement has frequently been made by responsible officials. It was included in President Roosevelt's message to Congress on Nov. 1, 1943.

[4] *Frankfurter Zeitung*, July 18, 1943, p. 5. This same estimate was given out by the Office of War Information in January 1943.

[5] *New York Times*, Sept. 9, 1943, p. 22.

[6] *Neue Zürcher Zeitung*, Mar. 23, 1942; *National Zeitung*, Apr. 18, 1942.

seem likely to have been common in most of the German-occupied cities of Russia in 1942–43; but the farming sections presumably suffered much less.

Throughout the Soviet Union—both in Soviet-controlled and German-controlled areas—great efforts were exerted to stimulate sowings for the 1943 harvest. Soviet officials have reported that in Russian-held territory the cultivated area was increased by 5.0 million acres during 1941–42 and by an additional 6.4 million acres in the autumn of 1942.[1] But this expansion could not compensate for the reduction in plantings that must have occurred in the wide territory controlled by the Germans in late October 1942. Devastation and shortages of labor and equipment there seriously cut the areas sown to grain and other foods. Finally, prolonged drought in the autumn and early spring of 1942–43 adversely affected sown acreages and yields per acre of food crops in other southeastern districts and perhaps, to a lesser extent, in southern Ukraine. Recent crop advices are conflicting, but we infer that the grain harvest in the territory under Soviet control in the autumn of 1942 was of average size or smaller. Elsewhere the crops obtained were probably poor to fair. Particularly large deficiencies in food supplies presumably characterize the areas retaken by the Russians since the summer of 1943. Soviet Russia as a whole, therefore, must be in serious need of heavy food imports in 1943–44 — imports much heavier than there is now a reasonable prospect of being shipped.

III. CONTINENTAL EUROPE EX-RUSSIA

The general food position of Continental Europe ex-Russia was fairly good in 1939–40, unsatisfactory in 1940–41, worse in 1941–42, and definitely critical in 1942–43. This continuing deterioration reflected not only the cumulative effects of a widened Allied blockade of Axis Europe, but also reduced European harvests attributable to the combined influence of unfavorable weather and wartime shortages of labor, motive power, agricultural equipment, and fertilizers. The bread-grain crops of this area were substantially below average size in 1940, 1941, and 1942; potatoes and vegetables, though increased in output, were not increased enough to offset the decline in supply of bread grains; feed grains were diverted to human consumption on an expanding scale; and each successive crop year witnessed a further reduction in livestock numbers and in the output of meat, animal fats, milk, and other dairy products. Not until the spring of 1943 did there appear a fair prospect that this downward trend in food supply might soon be checked and even reversed. Although drought in the late summer cut yields of corn and root crops, thus dimming early prospects for very marked improvement, the 1943 food and fodder crops of Continental Europe ex-Russia are still believed to be the largest harvested since the war began.

Wheat Supplies of 1942–43

Wheat—and probably also wheat and rye combined—was in shorter supply in Continental Europe in 1942–43 than in any year since 1920–21. Initial wheat stocks were moderate to low, the domestic crops were small, and imports were apparently about as small as they had been in the preceding crop year. Official estimates are not available for any of these components, but our own approximations (based on fragmentary official statements and newspaper reports) are shown in Chart 13.

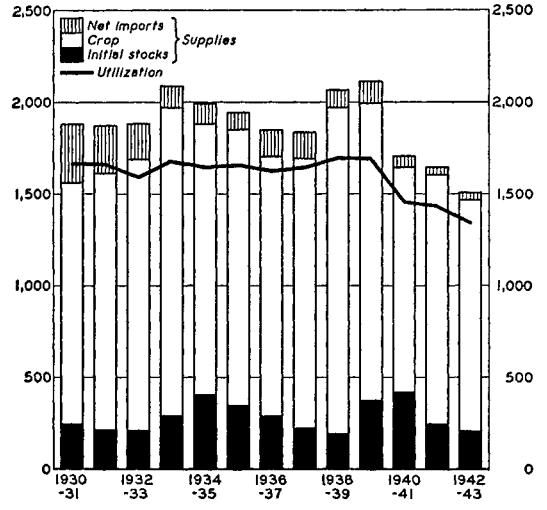
The major element in the Continent's wheat supplies is always the Continental crop. In 1942 the production was far below average, almost as small as in 1940 and otherwise the smallest in fifteen years. Outturns were relatively lowest in Central Europe and the Danube basin. There an early winter interfered with sowings in the fall of 1941, subsequent low temperatures caused heavy crop losses, and a late spring, with floods in the South, prevented the desired expansion in spring sowings. In Germany alone some 6 million

[1] *Sotsialisticheskoe Selskoe Khozyaistvo (Socialist Agricultural Economy)*, January–February 1943, p. 35, and March–April 1943, p. 3.

acres of winter wheat, rye, barley, and rape had to be plowed up in the spring of 1942; and more of this area was resown to feed grains and potatoes than to bread grain. Similarly heavy winterkilling reduced the Danish wheat crop to only 700,000 bushels, as compared with an average output of over 14 million in the last five years before the war. In the Danube basin, the 1942 wheat crop probably fell 75–100 million bushels (21–28 per cent) below average.

CHART 13.—WHEAT SUPPLIES AND UTILIZATION IN CONTINENTAL EUROPE, FROM 1930–31*

(Million bushels)



* Data as shown for recent years in Table XXII.

Elsewhere in Continental Europe wheat harvests were less drastically reduced in 1942. Indeed, the official crop estimates for Italy, Spain, Portugal, and Sweden, though only average or below, were all higher than in either 1940 or 1941; and unofficial reports for most other western European crops, for Poland, and for the Baltic area suggest somewhat larger wheat outturns than in either of the two preceding years.

The distribution as well as the size of the 1942 Continental wheat crop was thus unfavorable to Germany's food position. Less unfavorable was the size and distribution of the European rye crop, which, though seriously cut in Central Europe, was reduced proportionally less than wheat. In the Danube basin, drought damage to the maize crop indirectly reduced Germany's supply of bread grains by making it difficult to expand the consumption of maize as a substitute for wheat in Danubian diets (see Table VI).

Indeed, it seems probable that Danubian exports of wheat in 1942–43 were extremely small. Presumably the bulk of these originated in Rumania and the former Yugoslavian wheat-surplus districts now controlled by Hungary and German-dominated Serbia.[1] In November 1942 the Hungarian Supply Minister promised that no wheat of the 1942 Hungarian crop would be exported,[2] but he did not clearly indicate that his promise applied also to wheat from the Banat-Batchka region. Apparently Rumania exported very little wheat in 1942–43, while Bulgaria and Croatia were net importers of bread grain.[3]

Even if Danubian net exports of wheat did not exceed 5–10 million bushels in 1942–43, the supplies retained for utilization and carryover in the Danube basin must have been unusually small. Our approximations to these quantities are shown in the middle section of Chart 14 (p. 68). Some of the supplies "retained" in 1942–43 and the two preceding years went to feed German and Italian troops in the Danube area and probably also some of the Axis troops in Russia and Africa. We infer that the amount of wheat left for use of the Danubian population (both civilian and military) during the past crop year may have been of roughly the same magnitude as on the average in 1932–33 and 1934–35.[4] In those two earlier years of wheat shortage, however, maize and other foods were abundant and the food position as a whole was much less tight.

[1] According to one report, Hungarian officials indicated that *Old* Hungary had not exported any wheat in either of the two preceding years, though exports had been made from the surplus areas annexed from Yugoslavia. *Neue Zürcher Zeitung*, Nov. 18, 1942.

[2] *Pester Lloyd*, Nov. 21, 1942; *Neue Zürcher Zeitung*, Nov. 18, 1942.

[3] *Pester Lloyd*, Apr. 4, 1943; *Südost-Echo* (Vienna), May 21, 1943; *London Grain, Seed and Oil Reporter*, June 28, 1943, p. 640.

[4] In several of the Danubian countries methods of crop estimation were changed during the late 1930's, raising the level of wheat-crop estimates in the Danube basin by 3 to 6 per cent. Thus, for better comparison, the supply figures shown in the chart for years prior to 1936 should apparently be raised by 10–25 million bushels.

The wheat exported from the Danube basin in 1942–43 went mainly to Germany and Italy, though a little was apparently sent to Greece. The German Reich (including Austria and Sudeten) probably received substantially more wheat from other sources—a considerable quantity under pressure from former Poland and Czechoslovakia, a fair amount from France, and probably a million bushels or so from occupied Russia and the Baltic states. There is little clue as to the quantities taken from these various sources, but we are inclined to guess that German wheat imports in 1942–43 may have totaled 25–35 million bushels.

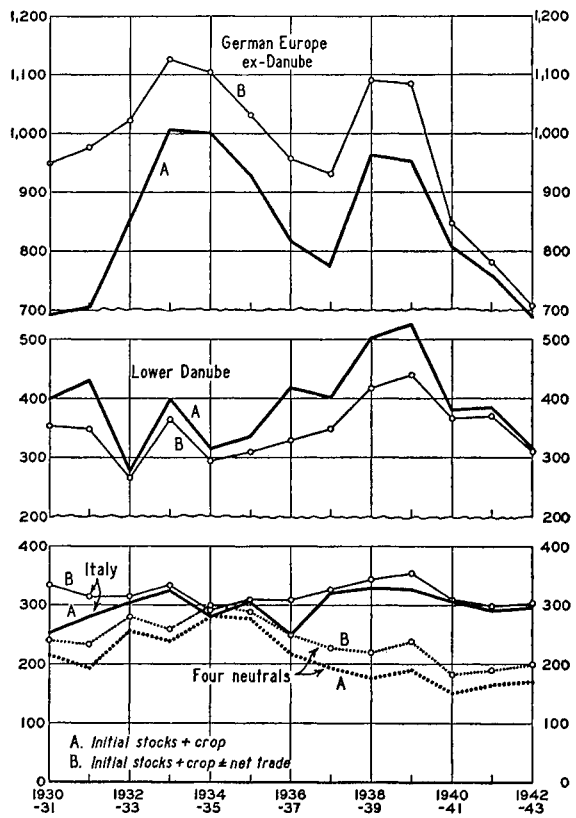
Such imports, or even somewhat larger ones, could not have brought Germany's total wheat supplies in 1942–43 up to a normal level either for wartime or for peace. A serious problem of wheat shortage thus confronted Nazi officials—a problem that could not be solved by increased use of rye, which was also in short supply in Central Europe. The only possible solution was to divert to human food larger quantities of potatoes and feed grains. Fortunately for Germany, her 1942 potato crop was of record size and her feed-grain harvest unusually large. Moreover, substantial quantities of barley and other feed grains were reported to have been shipped back to Germany from southern Russia.

Similar or greater shortages of wheat were encountered in other parts of "German Europe" ex-Danube.[1] Our approximation to the wheat position of this broad area in 1942–43 is shown in comparison with estimates and approximations for earlier years in the upper section of Chart 14. Supplies from domestic crops and inward carryovers had been about equally small in 1930–31 and 1931–32. But in each of those earlier years some 250 million bushels of wheat had been imported from the outside, whereas in 1942–43 the net imports of the area probably did not reach a tenth of that amount. The countries most heavily dependent on wheat imports in the early 1930's were the very ones that faced the greatest relative shortages of wheat in 1942–43—Belgium, Holland, Norway, Denmark, and Greece. But the seriousness of these shortages depended less on their degree than on the supplies of other high-calorie foods available to the various nations. Thus, the bread positions of Holland and Denmark were less strained in 1942–43 than the positions of France and Poland, whose wheat supplies were reduced somewhat less sharply in percentage terms.

[1] "German Europe" is here used to refer to Continental Europe exclusive of Russia, Italy, and the four neutral countries.

CHART 14.—WHEAT SUPPLIES, INCLUDING AND EXCLUDING TRADE, BY AREAS IN CONTINENTAL EUROPE EX-RUSSIA, FROM 1930–31*

(Million bushels)



* Food Research Institute estimates, utilizing available official data on production and trade. The designation "German Europe" is here used to refer to the Continent exclusive of Russia, Italy, and the four neutrals.

The supply of bread grain retained in Poland in 1942–43 was deficient mainly, if not wholly, because of heavy German takings of bread grain and other foods. Within her former boundaries, Poland apparently produced enough bread grain in 1942–43 to give her own population a fairly satisfactory bread ra-

tion; but German demands reduced these supplies to a low level. In contrast, French wheat supplies were short primarily because the 1941 and 1942 French crops were far below average, in reflection of wartime shortages of labor, horses, and farm equipment. In France, German requisitions of wheat and other cereals were substantial, but they apparently played a minor role in keeping French wheat supplies at a low level. Also of minor importance in this respect was the reduction in French imports of wheat from North Africa in 1942–43 (p. 77).

The area of most serious bread-grain shortage in German Europe in 1942–43 was Greece. Although famine conditions were less widespread and less marked than in the preceding year, undernourishment continued to take a significant toll of urban populations. The obvious improvement in food conditions over 1941–42 was mainly due to (1) reconstruction of transport facilities, damaged or destroyed in earlier war operations, and (2) scheduled monthly shipments of Canadian wheat and other supplies into Greece under the auspices of the International Red Cross. In July–June 1942–43, Canadian wheat shipments (presented as a gift to Greece by the Canadian government) totaled about 6.0 million bushels; and these were presumably supplemented by a trickle of wheat imports from the Danube basin—primarily Rumania and the Banat region of former Yugoslavia. We infer that Greece's total net imports of wheat in 1942–43 did not exceed 6.5 million bushels—a quantity that could only reduce, not prevent, widespread undernourishment of the Greek population.

Chart 14 (bottom section) indicates that Italy and the group of four neutrals suffered less reduction in their wheat supplies in 1942–43 than did the Danube basin and the rest of German Europe. This is attributable, on the one hand, to the better crops of these five countries (Tables II and III), and, on the other hand, to the importing privileges enjoyed by the neutrals.

Italy's wheat position during the past three years has been less satisfactory than the chart suggests. Military mobilization and shortage of certain other foods has increased the demand for pastes and bread in Italy, while the supply of these basic wheat foods has been kept short by hoarding and relatively heavy consumption of wheat on farms. Italian imports in 1941–42 and 1942–43 were mainly arranged by Germany. In 1941–42 these included several million bushels from the Batchka area of Hungary and a German loan of 3.7 million bushels (probably Danubian wheat). In 1942–43 the previous year's loan was apparently repaid, and Italy subsequently secured through Germany another 11 million bushels of wheat—this time perhaps mainly from former Poland and occupied Russia. Two-thirds of these imports represented a German loan to Italy, which may have been partly repaid before the end of the crop year.[1]

Of the four neutral countries, Portugal alone has been able to maintain her supplies of wheat during the past few years at or above normal peacetime levels. Her crops have been of fair average size, according to official estimates, and she has imported 4–5 million bushels of wheat annually (Table XV).

In contrast, Spain's wheat crops have remained so far below pre–Civil-War levels[2] that the increased imports of the past few years have not raised her total supplies to a normal level. During July–June 1942–43 Argentina reported shipments of 15.9 million bushels of wheat to Spain,[3] as compared with 13.8 million in the preceding year. These imports and an enlarged domestic crop moderately increased the supplies of wheat available for consumption in Spain in 1942–43.

In Sweden, too, an enlarged domestic harvest and a small increase in imports[4] raised

[1] *Neue Zürcher Zeitung*, Nov. 24, 1942; *London Grain, Seed and Oil Reporter*, Jan. 7, 1943, p. 16; *Corn Trade News*, Aug. 11, 1943, p. 305.

[2] At least this is implied by the official crop estimates, which may not be comparable for years prior to 1936 and after 1939.

[3] The great bulk of these shipments was made under the terms of the commercial agreement signed by Spain and Argentina on September 5, 1942. The agreement provided for the delivery of one million tons (36.7 million bushels) of Argentine wheat to Spain before March 5, 1944, with shipments at a minimum quarterly rate of 4.4 million bushels. Certain shipments of wheat made prior to the conclusion of the agreement (but in anticipation of it) were specifically included in the million tons mentioned.

[4] Official trade figures indicate that Sweden im-

the level of wheat supplies in 1942–43. On the other hand, Switzerland's wheat position continued to deteriorate, despite small increases in both crop and imports (almost wholly from overseas). This deterioration reflected the reduced level of Switzerland's war reserves of wheat, which had been drawn on heavily for food needs in the two preceding years.

Wheat and Bread Consumption

The sharply reduced wheat and bread-grain supplies available to Nazi Europe in 1942–43 necessitated the introduction of more stringent controls over bread production and distribution. Food-supply officials were called upon to choose among the various unpleasant possibilities of action open to them: (1) they could reduce urban bread rations below the existing low levels; (2) they could cut the total bread grain that producers were legally permitted to retain; (3) they could further lower the quality of bread by ordering increases in the current grain-extraction rates and/or by requiring increased admixtures of potatoes and feed grains in bread flour.

All of these measures were employed—some in one country, some in another. But most officials chose *not* to reduce urban bread rations; and several ration reductions that were ordered in the last few months of 1941–42 (partly in preparation for the tighter positions foreseen for 1942–43) were subsequently countermanded. These facts are clear from the table opposite, which shows the major changes in official bread rations for adult consumers over the past few years.

Germany took the lead in stretching her short bread-grain supplies by diverting large quantities of feed grains to bread production. This, however, was the second move of the German Food Ministry, not the first. In the spring of 1942, when it was first apparent that the new bread-grain crop would be very small, the German bread ration was reduced half a pound a week. But in view of the low rations prevailing for other foods, this cut apparently came to be regarded as ill-advised. At any rate, the policy of the Food Ministry was changed: effective September 1, 1942 admixtures of 20 per cent barley flour and 3 per cent potato flour were ordered in breadmaking,[1] and from October 19 the bread ration was restored to the higher level in effect prior to April 1942. The new flour orders also provided that wheat should be milled at 94 per cent extraction, as against 85 and 90 per cent during most of the preceding crop year. These regulations were maintained without change until May 31, when the bread ration was raised again—this time by 3 ounces a week to compensate in part for a concurrent reduction of about 4 ounces in the weekly meat ration. At the same time the German fat ration was raised by 2 ounces.

The ration changes made in Germany in the spring of 1943 pointed up the government's new food policy: to expand the consumption of plant foods in relation to the consumption of animal products. During 1942–43 the hog population of Germany was further reduced, and the first substantial inroads were made on the cattle population.[2] These declines were necessitated by the shortage of feed and fodder supplies—a shortage created in large part by the diversion of almost 2 million tons of barley[3] to bread-making purposes and of an even larger quantity of potatoes to human food.[4] Moreover, the available grain supplies were further reduced—by at least a million tons according to one prob-

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ported 2.1 million bushels of wheat grain (gross) during August–March 1942–43, as against 1.3 million bushels during August–July 1941–42. During April–July 1943 Swedish imports were presumably small or negligible. Safe-conduct shipping to Sweden was suspended from mid-January to May 6, 1943, pending negotiation of a revised agreement with Germany.

[1] The specific regulations were as follows: each mill having a wheat quota was required to grind 27 tons of barley for admixture with every 73 tons of wheat milled. The wheat had to be milled at 94 per cent extraction to yield 50 parts of better quality wheat flour and the remaining 44 parts of bread flour. The barley had to be milled at 80–83 per cent extraction to yield 10 parts of better quality barley flour for admixture with the better wheat flour and 70–73 parts of lower quality barley flour for admixture with wheat bread flour. In the making of common bread, 55 parts of the wheat-barley bread flour had to be added to a sponge or dough of 45 parts rye flour; and to this mixture 3 per cent potato flour had to be added. *Pester Lloyd*, Sept. 17, 1942.

[2] *Frankfurter Zeitung*, July 18, 1943.

[3] As reported in *Pester Lloyd*, May 13, 1943.

[4] During most of 1942–43 the potato ration in Germany was 4,000 grams (141 ounces) a week, as com-

BREAD AND FLOUR RATIONS FOR URBAN ADULTS IN CONTINENTAL EUROPE, AT SPECIFIED PERIODS*

(Ounces per capita per week in terms of bread)

	Dec. 1939	Dec. 1940	July 1941	Dec. 1941	Apr. 1942	July 1942	Dec. 1942	Apr. 1943	July 1943
	AXIS AND OCCUPIED AREAS								
Germany	86-170	79-164[a]	79-164[a]	79-164[a]	71-155[a]	71-155[a]	79-164[a]	79-164[a]	82-167[a]
Italy: Bread	Free	Free	Free	49-123	37-111	37-111	37-123	37-111	37-111
Pastes[b]	Free	16	16-22	16-22	16-25	16-25	16-25	16-25	16-25
France	Free	87-111	70-88	70-88	70-88	68-86[c]	68-86[c]	68-86[c]	68-86[c]
Belgium	Free	56-103	56-103	56-103	56-103	56-103	56-103	56-103	56-103
Netherlands	Free	84-168[d]	76-146	67-131	67-131	67-131	67-131	67-131	67-131
Norway	Free[e]	73-122[e]	64-112[e]	64-112[e]	64-112[e]	64-120[e]	64-120[e]	64-120[e]	64-120[e]
Denmark	Free	71-97[f]	80-130[f]	80-130[f]	86-140[f]	77-129[f]	82-131[f]	82-131[f]	82-131[f]
Finland	Free	81-190	65-138	65-138	65-146	65-146	81-162	81-162	65-146
Bohemia-Moravia	....[g]	....[g]	....[g]	79-164[a]	71-155[a]	71-155[a]	79-164[a]	79-164[a]	82-167[a]
Slovakia	Free	Free	76-111	76-111	44-77	44-77	54-93	54-93	54-93
Greece (Athens)	Free	Free[h]	25, 40[i]	25, 40[i]	17, 34[i]	49[i]	47-78	47-78	47-78
Hungary	Free	Free	Free	84-170[j]	71-157	46-145	57-143	57-143	71-157
Croatia	Free	Free	Free	Free	53-102	41-78	41-78	41-78	41-78
Serbia (Belgrade)	Free	Free	....[g]	63	63	63	65	71	71
Rumania (Bucharest)	Free	Free	Free	Free	53-106[k]	35-70[k]	62-123[k]	53-106[k]	53-106[k]
Bulgaria	Free	Free	Free	105-204	79-153	79-153	79-153	67-141	67-141
	NEUTRALS								
Portugal	Free	Free	Free	Free	Free	Free	Free	Free	Free
Spain (Madrid)	Free	37	20-43	25-37	20-37	20-37	37-62	37-62	37-62
Switzerland: Bread	Free	Free	Free	Free	Free	Free	56-105	56-105	56-105
Flour[b]	Free[l]	14	6	6	7	5	5	7	7
Sweden	Free	65-97	57-78[m]	57-78[m]	53-71[m]	53-71[m]	53-84[m]	53-84[m]	53-84[m]

* Except as otherwise noted, these figures represent approximate *total* rations for bread, baked goods, flour, groats, and pastes (assuming one ounce of flour equivalent to 1.3 ounces of bread). Irregular, supplementary distributions of flour or pastes disregarded. Ranges indicate the different rations allowed to "normal" consumers (low) and "very heavy workers" (high) except: (1) for Madrid, the lower limit represents the ration allowed the highest-income group, the upper limit the ration allowed the lowest-income group; (2) for Italy, the ration for pastes, etc., is different for different parts of the country.

[a] An additional small amount of alimentary pastes allowed on the *Nährmittel* card (apparently not over one ounce per week).

[b] Flour, pastes, and maize flour, without conversion to bread equivalents; for Switzerland sometimes includes millet.

[c] Additional distribution of alimentary pastes (about 2 ounces per week) allowed in districts where food was short.

[d] Wheat-products ration; rye-products ration higher.

[e] In December 1939, flour rationed at 82 ounces to prevent hoarding; later rations include legumes, rice, potato flour, etc.

[f] Of this ration, 18 ounces in December 1940, 17 ounces thereafter until Sept. 1, 1942 might be taken in wheat products; see p. 73.

[g] Conflicting evidence makes it impossible to determine even the approximate level of the ration.

[h] Pastes rationed at 2.5 ounces per week.

[i] Legal rations frequently changed and often unobtainable. Figures indicate rations most commonly reported.

[j] Budapest and environs.

[k] Additional amounts of maize meal and mixed maize bread allowed.

[l] Flour and maize free, but pastes limited to 12 ounces.

[m] From January 1941 includes increasing amounts of barley, oats, maize, and potato products. Prior to May 29, 1942 half of the ration could be wheat products; from May 29 to Sept. 2, 1942 reduced to 37 per cent; thereafter 50 per cent.

ably inflated estimate[1]—through destruction wrought by the Allied air raids on Hamburg, Cologne, and other major storage centers. The increased feed supplies that appear to be available to Germany for 1943–44 will go first to increase the output of milk for butter production and to raise more pigs with the primary view to securing more lard. Meat production will remain of secondary importance until well after the end of the war.

The new flour and bread regulations introduced in Germany in 1942–43 were probably extended also to Bohemia-Moravia. In the Danube basin, even more stringent regulations were adopted to stretch existing supplies of wheat and to balance urban bread supplies and requirements. The Rumanian gov-

pared with 2,500 grams (88 ounces) during the late winter and spring of the preceding year. We infer that in 1942–43 the nation's food consumption of potatoes was about double that in late prewar years within the same boundaries.

[1] A Soviet news agency report published by the *London Grain, Seed and Oil Reporter*, July 9, 1943, p. 32.

ernment prescribed that 50 per cent of the flour used for bread in most urban areas should consist of barley, potatoes, maize, or beans. For Serbia and Croatia, the maize–coarse-grain admixture requirements were put even higher, with figures of 66 and 80 per cent reported for certain months;[1] and the Bulgarian barley-corn-potato admixture figure was apparently held between 40 and 55 per cent during most of the crop year. These admixture requirements were all substantially higher than those in force in 1941–42. They were nevertheless inadequate for stretching the existing short supplies of wheat. Consequently, the various Danubian countries also resorted to the tightening of supplementary controls. Extraction rates for wheat were raised from 90 to 100 per cent in Rumania, from 80 to 95 per cent in Croatia, and from 82–85 to 90 per cent in Hungary. The per capita quantities that wheat producers' families were permitted to retain were reduced from 900 grams (32 ounces) to 400 grams (14 ounces) per day in Bulgaria, from 250 grams (9 ounces) to 200 grams (7 ounces) per day in Croatia, and from a somewhat higher level to 658 grams (23 ounces) for adult males and 493 grams (17 ounces) for other adults in Hungary.[2] Finally, urban bread rations were reduced in the late winter months in both Rumania and Bulgaria (see table), but only in Bulgaria was the ration level lower during the last four months of 1941–42 than it had been in the corresponding period of the preceding year.

In retrospect, the measures taken to stretch bread-grain supplies in the Danube basin in 1942–43 appear more severe than the deficient wheat position alone would seem to have warranted. Their stringency was probably attributable to an enlarged demand for bread for the mobilized armies and increased numbers of heavy workers in the Danube area, and to a critical shortage of maize meal and animal feedstuffs in parts of the area.

[1] *Südost-Echo*, Aug. 28, 1942; *Pester Lloyd*, Nov. 15, 1942.

[2] Apparently in all of these countries, and also in Rumania, larger alternative quotas of maize could be retained by producers for family consumption.

[3] *Neue Zürcher Zeitung*, Feb. 9, 1943.

It is conceivable, though we think not probable, that the new controls permitted the accumulation of a large amount of bread grain for export to Germany (p. 67). We lean rather to the view that many Danubian farm families (particularly in Rumania, Yugoslavia, and Bulgaria) consumed more wheat flour and less maize meal than they would have consumed in 1942–43 if their maize crops had not been so poor and if their animals had not faced a shortage of other feeds. The legal delivery requirements established for bread-grain producers might have prevented an appreciable net increase in wheat utilization on farms if those requirements had been strictly enforced, but throughout the Danube basin such enforcement seems to have been far from satisfactory. And with animal feeds short, and the prices for meat and animal products high—especially on the flourishing black markets of Hungary, Rumania, and parts of Yugoslavia—the incentive to feed maize and bread grain illegally must have been very great. Potatoes were certainly fed on a larger scale than usual, and more potatoes were also used for human food than is customary in the Danube area.

Food conditions in at least two of the principal cities of Yugoslavia—Belgrade and Zagreb—were reported to be critical in the spring of 1943. The legal Serbian and Croatian rations—including bread—were often unobtainable, and deaths from undernourishment were not uncommon. In Bulgaria, the low urban bread rations meant real hardship to consumers used to eating almost twice the amount of bread obtainable on their ration cards; and other cheap foods were not sufficiently abundant to make up for the enforced reduction in bread consumption. Rumanian urban food conditions were generally better. Yet Bucharest and other leading cities faced the threat of a serious shortage of bread grains in the last few months before the 1943 harvest. To meet this threat, Rumanian officials decreed in early February that all owners of surplus bread grain—private persons, business houses, and organizations—must immediately offer to sell such surplus grain to the government at the legal prices.[3] Whether substantial amounts of bread grain were thus diverted to con-

trolled channels of distribution is not clear; but the Rumanian bread ration was soon reduced, and further local reductions were made before the end of the crop year.

In Greece, Finland, and most of the occupied countries of western Europe, such adjustments as could be made to meet acute shortages of bread grain had already been made in 1941–42. Consequently, these countries were not in a position to do much more in the way of strengthening existing controls in the following year. Admixtures of various kinds of coarse grains, potatoes, and beans had been relied on for many months in the different districts of Greece, Belgium, Holland, France, and Norway; and in all of these countries wheat-extraction rates had already been raised to 90–100 per cent. Fortunately, most of these countries faced no greater shortages of bread grain in 1942–43 than they had in the preceding year; and at least Greece and Finland obtained larger (though still deficient) supplies of bread grain and other foods.

The International Red Cross supplied food and medical supplies to almost a million people in Greece in 1942–43; it fed about 550,000 daily during the winter in the soup kitchens of Athens-Piraeus.[1] Moreover, the legal bread ration in Athens-Piraeus was almost twice as high in the winter of 1942–43 as it had been a year earlier, and the ration allowance was much more frequently obtainable after September 1942, when the first regular shipments of wheat from Canada became available. In spite of such improvements, however, the Greek bread ration remained one of the lowest in Europe and supplies of other foods were notably deficient. Consequently, undernourishment and malnutrition continued to be serious problems in Greece throughout 1942–43; and death rates continued high, though sharply reduced from the famine levels of 1941–42.

Finland's food position appeared to be considerably improved during the early months of 1942–43. Her own enlarged harvests and Germany's promise of some 85,000 metric tons of bread grain seemed to insure the maintenance of a materially higher bread ration than had been authorized in the preceding year. But, although the promised German shipments were apparently completed, a shortage of bread grain (attributed to unexpectedly small domestic grain deliveries) became apparent in the spring of 1943. On July 1 the Finnish bread ration was reduced by 2¼ ounces a day; but extra deliveries of 20,000 tons of rye, arranged by Germany in July, permitted the ration to be restored to its former level in mid-August.

Of the occupied countries of western Europe, only Denmark maintained a fairly high bread ration, apparently always obtainable. The short Danish wheat crop of 1942, however, made it necessary to discontinue the previous special *wheat-products* ration of 17 ounces a week. General sale of virtually all wheat products was accordingly prohibited from September 1, 1942.[2] The bread and flour generally available thereafter was made predominantly of rye, with some admixture of barley, if not also oats or potatoes.[3] The small amount of wheat harvested was milled into flour for sale to invalids on doctors' prescriptions and for four special per capita distributions of 28 ounces each at Christmas time and again in February, June, and September 1943. A small portion of the wheat flour was reserved for improving the fine sifted rye flour used for special types of baked goods. Denmark must thus be counted as one of the countries that resorted to deterioration of bread quality in 1942–43 to meet new problems of bread-grain shortage. But the bread position in Denmark nevertheless continued satisfactory; and the general food position, though tighter with respect to meat, milk, and sugar than in 1941–42, still ranked as about the best in Continental Europe.

The other western countries of Nazi Europe faced fairly serious food shortages in 1942–43. In France, Belgium, the Netherlands, and Norway, food conditions were substantially worse in the fourth year of the war than they had been before. Black markets flourished, draining off large quantities of meat, butter, lard, and flour from normal channels of dis-

[1] *United Nations Review*, Mar. 15, 1943, p. 112.

[2] *Foreign Crops and Markets*, July 1943, p. 146.

[3] *London Grain, Seed and Oil Reporter* of Aug. 31, 1942 stated that Danish bakers had been ordered to use 30 per cent barley flour in their bread (p. 223).

tribution. Reported cases of tuberculosis increased sharply. School and clinic records showed more illness and more subnormal weights; death rates probably rose. In all of these countries the people who lived on farms had enough to eat. So too did urban dwellers who had large money incomes, those who had cherished goods for bartering, and those with friends or relatives on near-by farms. But city inhabitants without such advantages suffered various degrees of privation and hunger, dependent in large part upon their success with war gardens.

Bread-supply conditions deteriorated more in France than in any other western occupied country in 1942–43. The 1942 French wheat crop, harvested earlier than usual, had been drawn on in the last month or two of the preceding crop year to cover the serious year-end deficiency then apparent. Later, the flow of grain from North Africa was shut off by the successful invasion by the United Nations. These two factors resulted in a substantial reduction of the wheat supplies available for the twelve months from August 1942 to July 1943. An additional complicating influence was the fact that farmers had been legally authorized to retain for their families in 1942–43 a per capita daily wheat allowance of 500 grams (18 ounces) as compared with only 350 grams (12 ounces) in the preceding year. This concession had been made by the Vichy government to encourage increased co-operation in the government's delivery programs; but it soon appeared that the co-operation of most French farmers could not be bought so easily.

Signs of tightness in the French bread position were quite evident by March 1943. Some of the villages in France were then reported to have been without bread for more than a week.[1] The Vichy government showed its concern by ordering the reaping and threshing of the new wheat crop as early as possible to meet the growing food shortage.[2] By April there were open hints that the French bread ration would have to be cut[3]—hints that were followed, not by a general reduction, but by the extension of power to local prefects to reduce the bread rations in their districts if that step should appear necessary.[4] Substantial reductions were promptly made in a number of districts,[5] and other signs of wheat shortage continued to accumulate. From Paris came the report that several hundred bakeries had been forced to close for lack of flour;[6] at the end of May a strong governmental appeal to farmers to deliver their wheat was read in 32,000 rural communities;[7] and in June the Minister of Agriculture openly spoke of the possibility of famine.[8] Widespread famine did not develop—not even after the extensive drought in southern France ruined a large part of the commercial vegetable crop in that area. But the entire food situation was very serious in June, and July brought reports of the failure of many districts to supply enough bread to meet the legal ration demands, with resulting "bread riots" and popular demonstrations. These conditions, however, were apparently relieved in August—by prompt harvesting, threshing, delivery, and milling of new rye, barley, and wheat.

Food developments in Italy were less unfavorable in 1942–43 than in the western occupied countries. In fact, there is some evidence that Italian food conditions were better than the year before, with the legal rations more regularly obtainable. At the beginning of the crop year it was decreed that thereafter only one type of bread should be sold—a bread made of specified portions of wheat and corn of high percentage extraction. This measure was not seriously restrictive, and it was soon followed by increases in the bread rations for youths and workers during the late fall and winter months. These increases, planned to end February 28, were subsequently extended to March 31, indicating a better bread position than had been anticipated. But the bread situation and general food conditions in Italy were actually far from satisfactory. Hoarding con-

[1] *New York Times*, Mar. 27, 1943, p. 3.

[2] *Ibid.*, Mar. 26, 1943, p. 5.

[3] *Ibid.*, Apr. 18, 1943, p. 19.

[4] *Corn Trade News*, May 26, 1943, p. 195.

[5] *Neue Zürcher Zeitung*, June 1, 1943.

[6] *Ibid.*, May 5, 1943.

[7] *New York Times*, May 31, 1943, p. 3.

[8] *Ibid.*, June 1, 1943, p. 3. Even Pétain was reported to have lamented on June 4: "Men might understand me better if bread were not so scarce" (*ibid.*, July 4, 1943, p. 8).

tinued to be a problem; black marketing was commonly practiced; and farmers reportedly fed significant portions of their food crops in order to profit from the high prices offered for meat and animal products.

Of the neutral countries, only Switzerland took new measures to reduce the utilization of wheat during 1942–43. Official concern over the rapid decline of Swiss bread-grain reserves had been registered during 1941–42: the extraction rate for wheat flour had been raised from 85 per cent to 90 in September 1941; admixtures of 5 per cent rye flour and 10 per cent barley flour had been required in wheat flour from February 1942; and the price of bread had been raised by 10 per cent in July 1942.[1] These steps, however, failed to bring Swiss utilization of bread grain into line with the declining supplies. Stronger measures seemed necessary. For 1942–43, therefore, the annual bread-grain consumption of self-producing families was limited to 200 kg. (7.35 bushels) per capita,[2] and all other consumers were limited to a *daily* bread ration of 8–15 ounces (depending on their occupation)[3] plus an additional ounce of flour, pastes, and cornmeal. Rye and barley flour continued to be required as admixtures in wheat flour, but the supply of these was too small to warrant continuation of the 15 per cent admixture regulation imposed in February 1942. As a result, the barley-rye admixture requirement was first reduced to 10 per cent and later, in mid-February 1943, to 5 per cent. No other significant change was introduced until May 17, when bakers were authorized (not required) to make "potato bread," which should contain at least 15 per cent and no more than 20 per cent of potatoes, by weight, with a corresponding range of 85–80 per cent bread flour.

In Portugal as well as Switzerland, food conditions in general deteriorated in 1942–43. But whereas Switzerland found it necessary to tighten controls to conserve bread grains, Portugal seems not to have been seriously concerned about the possibility of a bread shortage. Throughout the crop year bread was sold freely without ration coupons in Portugal. But shortages of oil, codfish, rice, and soap became critical there in the later months; and poor grain harvests in the summer of 1943 held the threat of worse conditions in 1943–44 if the greater deficiency is not made up by larger imports.

Spain continued to face serious problems of food supply and distribution in 1942–43, but the situation in general was better than in any of the three preceding years. Increased supplies of bread grains were reflected in higher bread rations in Madrid and other cities. Moreover, the official rations were more frequently obtainable in 1942–43, and there may have been some improvement in the quality of the bread. More important, apparently, were the increased supplies of other foods—maize flour, beans, potatoes, oil.[4]

Sweden's food position, threatened by the poor grain crops of 1940 and 1941, was considerably improved after the larger harvests of 1942. In the summer of 1942, the Swedish Minister of Supply announced that the new bread-grain crop would have to be at least 30 per cent larger than that of the preceding year to maintain the existing bread ration. Actually, the outturn of wheat and rye combined showed an increase of 47 per cent, and net imports of bread grain were slightly enlarged. These favorable developments were reflected in early increases in the bread rations for children, adolescents, and heavy workers, and in enlargement of the maximum wheat-portion of the bread ration from 37 to 50 per cent.[5] Moreover, toward the end of the crop year, a further slight increase in the general bread ration was effected through the removal of oatmeal from the list of foods rationed on the bread card. But in Sweden, as also in Switzerland, bread remained a less important element of the diet than in most

[1] Since the government was subsidizing bread consumption, this increase was expected to result in a direct saving to the national treasury of 22 to 25 million Swiss francs (*Neue Zürcher Zeitung*, July 15, 1942 and July 20, 1942).

[2] An alternative ration of 300 kg. (11.0 bushels of 60 lbs.) of maize or certain other grains was allowed.

[3] This ration, effective Oct. 16, 1942, represented Switzerland's first move to ration bread during the present war.

[4] *Neue Zürcher Zeitung*, July 31, 1943.

[5] This regulation (effective Sept. 2, 1942) represented a restoration of the wheat-products allowance in force prior to May 29, 1942.

other Continental European countries. In both Sweden and Switzerland potatoes were unrationed throughout 1942–43; normal adult consumers could obtain substantial quantities of liquid milk; and various other foods were more readily obtainable than elsewhere in Continental Europe, except in Denmark and perhaps Portugal.

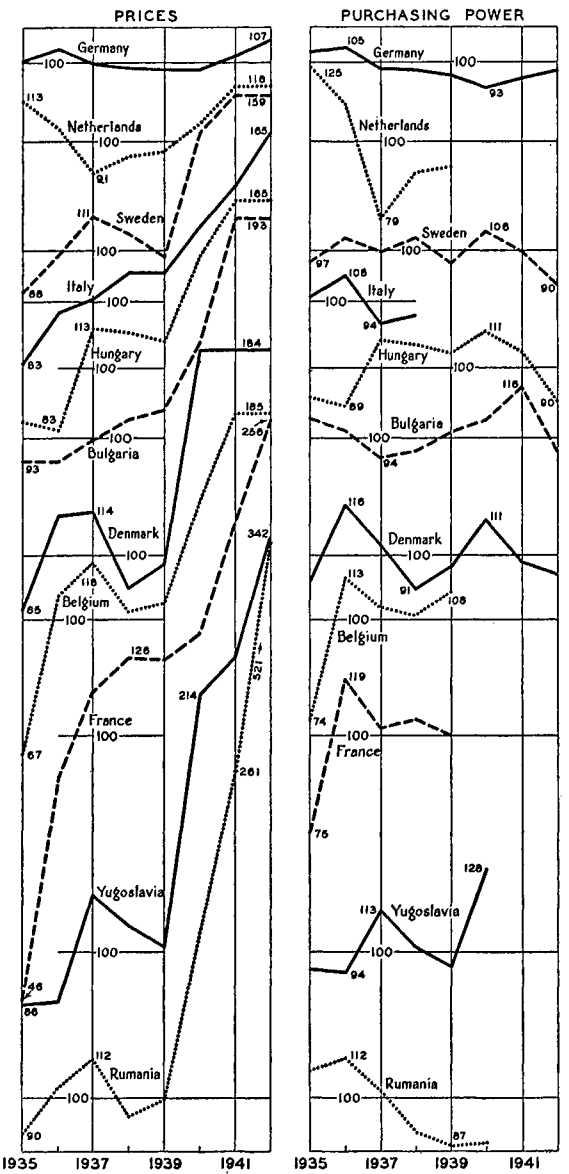
Throughout Continental Europe the consumption of bread in 1942–43 was commonly subsidized out of national funds. In many countries—both neutral and Axis, both wheat-importing and wheat-exporting—bread and flour prices were not permitted to reflect the existing high level of grain prices. Both bread and grain prices were generally higher than before the war, but only part of the increase in grain prices to farmers was ordinarily reflected in the price of bread.

In spite of the greater shortage of wheat in 1942–43 than in any preceding war year, the wheat prices paid to producers in a number of Continental countries were no higher than in 1941–42. Even in the first few months of the crop year wheat prices remained unchanged in the Netherlands, Belgium, Denmark, Bulgaria, Hungary, Spain, and Sweden (Chart 15, left-hand section). Some other countries, which were particularly anxious to increase early-season deliveries of grain, paid special premiums on deliveries made in the first few months. Such premiums raised the prices for August–September 1942 above those of corresponding months in the preceding year in Germany, Italy, France, Serbia, and Portugal. But by December German and Italian prices were back to the corresponding levels of 1941, and in Sweden producers were getting less for their wheat than in either of the two preceding years (Table XXV). Indeed, in December 1942 wheat prices to producers were 5 per cent or more higher than a year earlier only in France, Finland, Greece, Serbia, Rumania, and Switzerland.

On the other hand, almost all wheat producers in Continental Europe, except those in Germany, received considerably higher prices in 1942–43 than they had in any of the five years before the war or even in the first two war years (Chart 15, left-hand section). Increases of 50–100 per cent over 1935–39 average prices were common; and in Rumania, the government had been influenced by inflationary developments to raise the price of wheat to producers by some 420 per cent. These higher prices, however, did not mean increased purchasing power—a situation reflected by the striking contrast between the

CHART 15.—PRICE INDEXES AND PURCHASING POWER OF WHEAT IN EUROPEAN COUNTRIES, MONTH OF AUGUST, FROM 1935*

(Average 1935–39 = 100)



* Prices from Table XXV; deflated by wholesale price indexes of the respective countries (1929 = 100) in calculation of purchasing power.

two sections of Chart 15. In all of the five countries for which indexes of commodity prices in general are available for recent years, the purchasing power of wheat to producers in 1942–43 was lower than on the average in 1935–39. We infer that this was true also in most of the remaining countries — even in Yugoslavia and Rumania.

Outlook for 1943–44

The deficient Continental bread-grain supplies of 1942–43 led to a substantial reduction of wheat stocks at the end of the year. Indeed, the total 1943 carryover in Continental Europe ex-Russia must have been exceedingly small, perhaps smaller than in any year since 1925. Yet in Germany and parts of the Danube basin, at least, wheat stocks were presumably still above minimum working reserves. In these countries, and perhaps a few others, government war holdings of wheat, Nazi stocks of requisitioned grain, and/or numerous small private hoards kept stocks from being as low (relatively) as elsewhere.

To the small Continental wheat carryover of 1943, there has recently been added the new wheat harvest, which appears to be below the prewar average though above the three preceding war crops. We infer that these aggregate supplies come to a higher total than did the supplies of 1942–43. On the other hand, they may not reach the total for the small supplies of 1941–42. Our quantitative approximations to recent crops and carryovers in Continental Europe are shown in Table XXII, but any such figures are subject to a very considerable margin of error of estimation.

IV. OTHER COUNTRIES*

Most of the remaining wheat-consuming countries of importance are in North Africa, the Middle East, the Far East, or the Americas. Outstanding developments in these broad areas are discussed below.

French North Africa

According to standing estimates, the 1942 wheat crop of French North Africa was small. Even if it was supplemented by stocks of above-average size, as seems probable, the total supplies available for 1942–43 must have been appreciably smaller than usual. Moreover, substantial drafts were made on those supplies for shipment to France in the summer of 1942, when French officials were facing an acute year-end shortage of wheat. The Vichy Minister of Food later reported that the preharvest gap was filled by some 5.5 million bushels of grain from North Africa.[1] We infer that these imports were almost wholly wheat, and that further appreciable imports were received after the French crop was harvested and before Allied forces invaded North Africa on November 8.

When the Allies landed in Morocco and Algeria, they found the leading cities seriously short of food and of many essential commodities normally imported from France or overseas.[2] Hoarding of wheat and other nonperishable produce, common earlier, was intensified by the invasion. Many farmers were unwilling to sell their crops for the current paper money, which they feared might later prove valueless, and which could not immediately be used because needed goods were not available on the markets. This difficult situation was met by the establishment of an occupation currency, and by the importation of food and special items desired by farmers.[3]

In total, the flour and wheat shipped by the Allies to North Africa came to only about 4 million bushels in wheat equivalent (p. 5), and shipments of other essential foods were on a similarly moderate scale. More important in improving the critical food situation were the long-desired imports of cloth, clothing, soap, petrol, and agricultural equipment —commodities for which farmers were not only willing but anxious to exchange their hoarded grain.

* This section was written with the special collaboration of Meriam A. Clough.

[1] *Economist*, Feb. 27, 1943, p. 268.

[2] See "North Africa's Food-Supply Problems," *Foreign Commerce Weekly*, Mar. 27, 1943, pp. 10–11, 39.

[3] The most authoritative detailed statement with regard to North African imports is found in the White House release of Oct. 19, 1943, *Department of State Bulletin* (U.S.), Oct. 23, 1943, pp. 271–72. See also the *Economist*, Feb. 6, 1943, pp. 179–80, 185.

Allied military occupation of North Africa was thus associated with gradual, moderate improvement in the food situation of the larger occupied cities. Although bread continued to be rationed, the rations were generally raised. Probably no change was made in the high extraction rates (90–95 per cent) required in the milling of North African flour, but the white flour imported from the United States was presumably sold at higher prices against ration cards or used to improve the quality of locally-milled flour.

After the 1943 North African harvest, imports of flour were no longer required. Food shipments, in general, dwindled; and only sugar, tea, and milk continued to be supplied on lend-lease account. In contrast, shipments of seeds, agricultural machinery and equipment, fuel oil, and fertilizers expanded during the later months of the crop year in reflection of Allied policy to rehabilitate the agriculture of North Africa as rapidly as possible.

Middle East

Estimates of the wheat crops of Turkey, Syria and Lebanon, Iraq, Iran, Palestine, Cyprus, and Egypt indicate a combined production in 1942 a little smaller than the year before and the lowest in more than a decade. Turkey, by far the largest single producer in the Middle East, had a poor crop, some 20 per cent smaller than in 1941. Most of the other countries had moderately small harvests, which, however, were generally above the low outturns of the preceding year.[1]

Net imports of wheat in the Middle East probably totaled about 10 million bushels. This wheat went mostly to Turkey and Iran under Anglo-American agreements negotiated in December and January. Although large for the Middle East (which was a net exporter on balance during 1934–39) the imports were too small to bring the wheat or total grain supplies to a normal level in 1942–43.

Shortages of other foods, hoarding, black markets, and general price inflation added to the seriousness of the bread positions of the various Middle Eastern countries. In practically all of the principal cities bread-grain supplies were stretched under government orders that specified high extraction rates for wheat (typically 90–95 per cent) and admixtures in bread flour of barley, maize, rice, and/or bean flour (typically 30–50 per cent). These measures were supplemented by legal rationing of flour and bread at levels generally below normal consumption standards.

Food conditions appear to have been worst in Turkey and Iran, best in Egypt. In Turkey, farmers were required to deliver 25–50 per cent of their wheat production to the government at fixed prices.[2] Although these delivery requirements were much more lenient than those of the preceding year, "free" wheat as well as government-owned wheat was scarce. The Turkish daily bread ration was apparently maintained during most of the year at 300 grams (11 ounces) for normal consumers, with double rations for heavy workers. Increased imports in the winter months were reflected in temporary relaxation of restrictions on sales of flour and of bread made from high-priced "free" wheat.[3]

The shortage of bread grain in Iran was intensified by delay in the establishment of governmental controls over the internal distribution of food, and by diversion of part of the country's transport facilities to a supply line for Russia. No effective rationing system was set up until after the Anglo-American agreement of December 4 was signed, an agreement which promised Iran help in obtaining cereal imports on the condition that the Iranian government institute a food-rationing program.[4] Little information is available to us on subsequent import and rationing developments. However, it is clear that Iran received significant shipments of wheat, partly arranged by Britain and the United States, and that the daily bread ration in Teheran early in 1943 was 400 grams (14 ounces) for normal consumers and 800 grams for heavy workers.[5]

In contrast to the bread-grain shortages in

[1] Background information on food production and consumption in Egypt, Palestine, Trans-Jordan, Syria-Lebanon, and Iraq is given in *Foreign Agriculture*, November 1943, VII, 243–55.

[2] *Corn Trade News*, July 29, 1942, p. 309.

[3] *Ibid.*, Mar. 31, 1943, p. 126, and Apr. 21, 1943, p. 146; *Foreign Commerce Weekly*, May 15, 1943, p. 7.

[4] *Food Supply for Iran; Agreement between the United States of America, the United Kingdom of Great Britain and Northern Ireland, and Iran* (U.S. State Dept., Executive Agreement Series 292, 1943), p. 3.

[5] *Foreign Commerce Weekly*, Mar. 27, 1943, p. 26.

Turkey and Iran, cereal products were in generally ample supply in Egypt in 1942–43. That country secured record harvests of barley, millet, and corn, a large crop of rice, and about an average outturn of wheat. The Egyptian government continued in force the basic wheat-stretching measures of the preceding year, though these were modified to reflect the improved position. At the beginning of the crop year only 50 per cent wheat flour was permitted in bread flour, the remaining 50 per cent being rice and maize flour. During the following months the authorized portion of wheat flour was gradually raised to 90 per cent (supplemented by 10 per cent barley flour) in June–July.[1]

India

The food situation in India became critical during 1942–43. Indian wheat supplies—from sizable old-crop stocks, a moderate 1942 crop, and a record harvest in the spring of 1943—were above average rather than below. On the other hand, the important 1942–43 rice crop was relatively small (mainly because Bengal's crop was poor), and India could not draw her customary rice imports from Burma and neighboring exporters. During 1929–38 such imports, averaging 1.5 million metric tons annually, had gone mostly to the coastal cities in Bengal, Madras, and Bombay. Those particular areas, and some smaller ones (like Travancore and Cochin) that depended even more heavily on imported grain, faced real grain shortages in 1942–43. Moreover, throughout India hoarding of grain, inefficient internal distribution of the available supplies, political opposition to the Central Government, and increased grain consumption by a substantial portion of the low-income classes (having increased purchasing power) resulted in serious tightness of grain supplies and shortages in many of the larger cities.[2]

By December 1942 food conditions in several areas had deteriorated so alarmingly that the Central Government of India felt called upon to take measures to improve the situation. First steps in this direction were the establishment of a Department of Food on December 2 and the convening of the first Food Conference on December 14 and 15.[3] A third step was the formulation of the "Basic Plan," announced by the government on January 26, 1943 and subsequently accepted by all the provinces and states. This plan provided (1) that both surplus and deficit provinces should purchase, through new provincial procurement organizations, the largest possible stocks of food grains, and (2) that the surplus provinces should turn over as much surplus grain as possible to the Central Government for distribution to deficit areas.[4]

To stimulate marketings of hoarded grain, the government canceled, as of January 25, existing limitations on grain prices, and announced plans to import Australian wheat for sale in the areas of greatest shortage. Market prices of grain rose sharply, bringing out substantial hoards; and both wheat from Australia and grains from the food-surplus provinces of India were distributed as planned by the Central Government. These developments and the harvesting of the bumper 1943 wheat crop appreciably improved food conditions throughout India.[5]

Complaints continued to flow, however, from rice-deficient Bengal, whose provincial officials appeared reluctant to co-operate in the federal plan, and who did not take measures to secure efficient provincial distribution of the available supplies.[6] Nevertheless, Bengal received substantial quantities of food from the Central Government. Presumably

[1] *Ibid.*, July 17, 1943, p. 22. This percentage, established by decree of May 29, 1943, was to become effective in the different provinces on dates to be set later by the Supply Minister.

[2] The background of India's difficult food problem and the government's efforts to solve that problem are discussed in statements by Maj. Gen. E. Wood, Secretary of the Food Department, and Sir M. Azizul, Government Member for Food of the Central Legislative Assembly, *Indian Information*, Sept. 1, 1943, pp. 105 ff. and 111 ff. Mr. Amery, Secretary of State for India, gave a roughly similar analysis of the situation before the House of Commons on Nov. 4, 1943. A somewhat different view is presented by William Fisher, "The Bengal Famine," *Life*, Nov. 22, 1943, pp. 16 ff.

[3] *Indian Information*, p. 113.

[4] Actually, many of the provinces did not establish procurement organizations, and some of the surplus provinces denied that they had any food surpluses.

[5] Maj. Gen. E. Wood gave a fairly optimistic report on current food conditions in a radio broadcast from Delhi on Apr. 16. See *Indian Information*, May 1, 1943, pp. 391–92.

[6] *Indian Information*, Sept. 1, 1943, pp. 113–14.

larger quantities would have been sent if larger surpluses had been available to the Department of Food; but procurements from the surplus provinces were notably small in relation to the estimated deficiencies, and British policy seems not to have favored the diversion of much shipping to carrying grain for civilians. Through July the Indian Government secured and distributed only a little more than a million tons of food grains.[1] Although large in terms of the effort required for procurement, the amount distributed was small compared with actual needs.

Of the million tons of food grains sent to the deficit provinces during January–July 1943, something like 200,000 tons (7.5 million bushels) apparently consisted of imported Australian wheat.[2] August–July gross imports of wheat into India were presumably significantly but not materially larger. Perhaps the total was in the neighborhood of 10 million bushels, partially offset by gross exports of about 1.5 million.[3] After July 1943, exports of controlled food grains (including wheat) were forbidden except for negligible amounts for Indian crews of merchant ships.[4]

Toward the end of the crop year increasing emphasis was laid on the desirability of introducing food rationing in the major cities of India—particularly in those facing food shortages. The city of Bombay seems to have led the way by establishing an all-grain ration of 6½ pounds per person per week, effective May 2, 1943.[5] In Travancore and Cochin a lower grain ration was set—4½ pounds per capita per week.[6] Some other areas followed suit; but even at the end of July food rationing was not common in India, and it was opposed in Bengal, where famine conditions became worse in August–November.

Importers in the Americas

Brazil, the largest importer of wheat in the Americas, has also ranked during the last few years as the second largest importer in the world—second only to the United Kingdom. Official trade data are no longer available for Brazil, but Argentina reported shipments to that country of about 32 million bushels in 1942–43 as against 34 million in the preceding year. The wheat-supply position of Brazil apparently deteriorated during 1942–43, under a shipping shortage that interfered with the regular flow of wheat from Argentina. Probably partly in response to this situation, the Brazilian government raised the required proportion of manioc flour in bread from 10 to 20 per cent on July 14, 1943, and introduced bread rationing at the same time.[7]

Mexico, until 1941–42 an unimportant importer of wheat, ranked as the second largest net importer in the Americas in 1942–43. Her net imports for the year (chiefly from the United States) probably totaled 8–10 million bushels. These sizable takings, in the face of a bumper corn crop, mainly reflected improvement in the purchasing power of the lower income classes of Mexico, and, perhaps secondarily, the relatively poor wheat crop that was harvested in the spring of 1943. By early May the food position of the country had become serious, mainly as a result of price inflation. Beans, tortillas, potatoes, sugar, fish, and other basic foods could be purchased only at very high prices; and some foods had virtually disappeared from the markets in the larger cities. To discourage hoarding of storable foods and to prevent further price increases, the government decreed specific maximum prices for all basic foods, including corn, wheat, and rice. A few days later, cereal exports were prohibited.[8]

Peru and Chile together probably took about as much wheat as Mexico did alone. Peru's imports were apparently larger than in the

[1] *Indian Information*, p. 109.

[2] *Corn Trade News*, Aug. 18, 1943, p. 315; import figure, for the winter of 1942–43, attributed to Maj. Gen. E. Wood. On the other hand, this looks large in view of the statement by the Australian Minister of Commerce in mid-September 1943 that Australia had sent 50,000 tons of wheat to India in the preceding six months (*ibid.*, Sept. 29, 1943, p. 367).

[3] Gross wheat exports in January–July came to only 21,165 tons (790,160 bushels) and April–March 1942–43 exports were roughly similar in quantity. *Indian Information*, June 15, 1943, p. 469; Sept. 1, 1943, p. 118.

[4] *Ibid.*, Sept. 1, 1943, p. 118.

[5] *Foreign Commerce Weekly*, June 19, 1943, p. 19, and *Indian Information*, Sept. 1, 1943, p. 111.

[6] *Indian Information, loc. cit.*

[7] *New York Times*, July 15, 1943, p. 4.

[8] *Ibid.*, May 16, 1943, p. 16 and May 21, 1943, p. 9; *Foreign Commerce Weekly*, July 31, 1943, p. 15.

preceding crop year, though close to average size.[1] Throughout 1942–43 Chile maintained an export embargo on wheat and flour except for shipments to Peru against long-term contracts. Chile's small 1941 wheat crop was reflected in gross imports of 3.7 million bushels during the calendar year 1942 (Table XV) —the largest imports in several decades. Trade data are not available on an August–July basis, but we infer that August–July net imports were larger in 1942–43 than in 1941–42 and of record size.[2] In June 1943, Chile arranged for 1.4 million bushels of wheat imports from Argentina and Australia,[3] but this will mainly be taken in 1943–44.

The remaining wheat importers of the Americas apparently obtained average or below-average imports of wheat and flour in 1942–43. United States and Canadian shipments to the West Indies were probably smaller than usual, despite large Cuban purchases of United States flour in the spring (p. 50). Newfoundland presumably imported a normal amount of Canadian wheat and flour, while Venezuela and Colombia obtained somewhat smaller imports than in most past years.[4] Uruguay's net trade in wheat in 1942–43 was insignificant.

Others

China, Japan, Manchukuo, New Zealand, and South Africa are the most important wheat-consuming countries not yet discussed.

Information for the three Oriental countries is meager. It is clear that the food position of China was precarious. The major Chinese grain crops could hardly have been large under existing war conditions. In any case, a major portion of the wheat-surplus area of the north was held by the Japanese. Moreover, uncontrolled price inflation encouraged widespread hoarding of grains, and inadequate transport facilities interfered with even short movements to deficit areas. Famine conditions prevailed during part of the year in Honan, Kwantung, and some neighboring provinces—most severely in Honan.

In Japan, all major food supplies were under strict government control. The country was favored in 1942 by a good rice crop, about 20 per cent larger than the poor harvest of 1941. The wheat crop was mediocre. Vegetable production suffered from labor shortage and scarcity of fertilizers, but distribution of the available supplies was apparently handled fairly well. On the basis of the meager evidence available to us, we infer that food conditions in Japan were reasonably satisfactory in 1942–43.

Manchukuo apparently fared less well. Normally a net importer of food grains, Manchukuo was presumably unable to secure appreciable grain imports in 1942–43 to supplement her deficient domestic supplies.

Both South Africa and New Zealand harvested excellent wheat crops in 1942 (Table III). Both operated in 1942–43 under measures designed to increase home production of food and to stretch food supplies with a view to conserving shipping. Despite these measures, however, New Zealand's net imports of wheat and flour, officially reported at 2.1 million bushels, were larger in 1942–43 than in any of the three preceding war years. And although the wheat imports of South Africa were probably less than 2 million bushels, they were perhaps above the 1934–39 average.

[1] Argentine shipments to Peru totaled 4.4 million bushels in 1942–43, as compared with 3.0 million in 1941–42.

[2] Argentine shipments to Chile totaled 2.4 million bushels in August–July 1942–43 as against 1.0 million bushels in 1941–42.

[3] *London Grain, Seed and Oil Reporter*, June 25, 1943, p. 633.

[4] On Dec. 18, 1942, Colombia restricted wheat-import permits to mills located in regions producing little or no wheat; and even those mills were required to buy their quotas of national wheat before applying for import permits. *Foreign Commerce Weekly*, Feb. 13, 1943, p. 14.

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APPENDIX TABLES

In the following tables, symbols (letters) are frequently used to indicate, for recent years, our reasoned approximations to numerical data no longer made public in official sources. The symbols express probable percentage relationships to the average for the last five prewar years (1934–38 for crops, 1934–35 through 1938–39 for trade, etc.). SS indicates a numerical value more than 15 per cent below the prewar average; S, 5–15 per cent below; A, within 5 per cent of the average; L, 5–15 per cent above; and LL more than 15 per cent above.

Dots (. . .) indicate that data are not available, and not satisfactorily represented by percentage indications. Data in italics are unofficial estimates or approximations, frequently our own.

For useful tabulations not included here, see:

"Wheat Disposition Estimates by Countries, 1934-39 Average," WHEAT STUDIES, December 1942, XIX, 119.

"Wheat Acreage in Australia, 1937–42 (by States)," *Ibid.*, January 1943, XIX, 148.

"Canadian Wheat and Flour Exports, Monthly from August 1938," *Ibid.*, September 1943, XX, 32.

"Argentine Wheat and Flour Exports, and Wheat Stocks, Monthly from August 1938," *Ibid.*

"United States Wheat Supplies and Domestic Disappearance by Classes (of Wheat), 1938–43," *Ibid.*, p. 33.

TABLE I.—MOST RECENT YEAR OR MONTH COVERED BY OFFICIAL, SEMI-OFFICIAL, OR ACCEPTABLE "TRADE" ESTIMATES OF WHEAT PRODUCTION, ACREAGE, AND INTERNATIONAL TRADE FOR CHIEF CONSUMING COUNTRIES*

Country	Production	Acreage	Trade	Country	Production	Acreage	Trade
United Kingdom	1939	1939	Aug. 1939	United States	Current	Current	Sept. 1941
Eire	Current	Current	Aug. 1939	Canada	Current	Current	Current
France	1939	1939	July 1939	Australia	Current	Current	July 1942
Italy	Current	Current	July 1939	Argentina	Current	Current	Current
Germany-Austria	1939	1939	July 1939	India	Current	Current	Current[e]
Czechoslovakia	1938	1938	Aug. 1939	USSR	1938	1939	Dec. 1938
Poland	1939	1939	July 1939	Morocco	Current	Current	June 1939
Switzerland	1941	Current	Dec. 1939	Algeria	Current	Current	June 1939
Belgium	1939	1941	Mar. 1940	Tunis	Current	Current	Sept. 1939
Netherlands	1939	1941	Mar. 1940	Turkey	Current	Current	May 1941
Denmark	Current	Current	Feb. 1940[a]	Syria-Lebanon	Current	Current	Aug. 1939
Norway	1940	1940	Feb. 1940	Palestine	Current	Current	Feb. 1940[a]
Sweden	Current	Current	Current[b]	Cyprus	Current	Current	1939
Lithuania	1939	1940	Aug. 1939	Egypt	Current	Current	Dec. 1940
Latvia	1939	1939	Aug. 1939	China	1941	1937	Sept. 1941
Estonia	1940	1940	Aug. 1939	Japan	Current	1941	Sept. 1940[f]
Finland	Current	Current	Aug. 1939	Chosen	1941	1941	1939
Portugal	Current	Current	Current	Manchukuo	1941	1940	Oct. 1939
Spain	Current	Current	July 1936[c]	Mexico	Current	Current	Current
Greece	Current[d]	1941	Sept. 1940	Brazil	1939	1939	Current[e]
Hungary	1940	1940	Dec. 1940	Uruguay	Current	Current	June 1941
Yugoslavia	1940	1940	Sept. 1940	Chile	Current	Current	Current
Rumania	Current[d]	Current[d]	Jan. 1942	South Africa	Current	Current	May 1940[b]
Bulgaria	1940	1941	Jan. 1940	New Zealand	Current	Current	Current

* Countries for which data appear still to be published, even though belatedly, are designated in the table by the term *current*.

[a] Calendar year 1940 also available.

[b] Flour trade and wheat exports last published for September 1939.

[c] Calendar years 1940 and 1941 available.

[d] New boundaries only.

[e] Probably current though recent data not available.

[f] Grain imports last published for March 1940.

TABLE II.—WHEAT PRODUCTION, ACREAGE, AND YIELD PER ACRE IN PRINCIPAL PRODUCING AREAS, 1934–42 WITH COMPARISONS*

Year	World ex-Russia[a]	Four chief exporters: United States, Canada	Four chief exporters: Argentina, Australia	Four chief exporters: Total	British Isles	Continent ex-Russia: Total	Continent ex-Russia: Four neutrals[b]	Continent ex-Russia: Central Europe[c]	Continent ex-Russia: Others ex-Danube	Continent ex-Russia: Lower Danube[d]	French North Africa[e]	Middle East[f]	India	Others ex-Russia[a]	USSR
	A. PRODUCTION (*Million bushels*)														
1934	3,488	802	374	1,176	74	1,472	245	306	672	249	97	158	350	162	1,117
1935	3,558	910	286	1,196	72	1,503	210	323	668	302	70	161	363	193	1,133
1936	3,512	849	401	1,250	63	1,417	156	311	566	384	50	208	352	172	1,128[g]
1937	3,800	1,054	395	1,449	63	1,473	156	301	655	361	72	262	364	177	1,722[g]
1938	4,564	1,280	535	1,815	81	1,778	149	367	796	466	72	230	402	186	1,502[g]
1939	4,197	1,262	341	1,603	72	1,621	162	327	681	451	102	231	372	196	....
1940	*3,916*	1,353	382	1,735	*75*	*1,225*	111	*267*	*553*	*295*[i]	60	231	402	188	....
1941	*3,914*	1,258	391	1,649	*90*	*1,355*	139	*296*	*589*	*330*	76	191	374	180	....
1942	*4,102*	1,538	391	1,929	*115*	*1,260*	*152*	*248*	*595*	*265*	64	*171*	375	188	....
Average 1934–38	3,784	979	398	1,377	71	1,528	183	322	671	352	72	192	366	178	1,320
1914–18	3,046	1,061	277	1,338	73	975	...	...	...	...	57	...[h]	353	...[h]	682[i]
1909–13	3,122	879	237	1,116	60	1,286	150	244	562	330	58	...[h]	352	...[h]	760[i]
	B. ACREAGE (*Million acres*)														
1934	265.1	88.0	31.4	119.4	1.96	75.7	13.7	12.7	29.8	19.5	9.0	11.2	36.1	11.7	87.1
1935	267.3	93.7	26.2	119.9	2.04	76.8	13.5	12.5	30.1	20.7	9.7	12.0	34.5	12.4	91.6
1936	276.2	99.5	31.6	131.1	2.06	76.1	12.8	12.4	30.0	20.9	8.7	12.3	33.6	12.3	96.3
1937	284.6	106.4	34.4	140.8	2.06	74.7	12.0	11.8	30.0	20.9	9.7	11.8	33.2	12.3	102.3
1938	287.9	104.9	35.7	140.6	2.16	74.4	10.7	12.2	29.3	22.2	8.8	13.0	35.6	13.3	102.6
1939	269.4	89.6	31.1	120.7	2.02	75.0	10.9	11.5	29.4	23.2	9.0	13.5	35.4	13.8	101.1
1940	*263.7*	90.3	30.1	120.4	*2.10*	*70.0*	10.9	*11.1*	*26.7*	21.3	9.7	14.6	34.0	12.8	.....
1941	*262.1*	84.2	30.1	114.3	*2.75*	*72.5*	11.9	*11.7*	*27.6*	*21.3*	9.9	14.8	34.8	13.0	.....
1942	*243.5*	74.1	26.2	100.3	*3.10*	*68.0*	11.7	*10.0*	*28.0*	*18.3*	9.7	*15.1*	34.0	*13.3*	.....
Average 1934–38	276.2	98.5	31.9	130.4	2.06	75.5	12.5	12.3	29.8	20.8	9.2	12.1	34.6	12.4	96.0
1914–18	224.6	75.0	26.8	101.8	2.24	63.1	....	....	....	....	6.3	....[h]	31.9	....[h]	71.6
1909–13	214.1	61.9	23.7	85.6	1.89	70.9	11.1	9.7	30.5	19.6	6.5	....[h]	29.2	....[h]	74.2
	C. YIELD PER ACRE (*Bushels*)														
1934	13.2	9.1	11.9	9.8	37.8	19.4	17.9	24.1	22.6	12.8	10.8	14.1	9.7	13.8	12.8
1935	13.3	9.7	10.9	10.0	35.3	19.6	15.6	25.8	22.2	14.6	7.2	13.4	10.5	15.5	12.4
1936	12.7	8.5	12.7	9.5	30.6	18.6	12.2	25.1	18.9	18.4	5.7	16.9	10.5	13.9	11.7[g]
1937	13.4	9.9	11.5	10.3	30.6	19.7	13.0	25.5	21.8	17.3	7.4	17.1	11.0	14.4	16.8[g]
1938	15.9	12.2	15.0	12.9	37.5	23.9	13.9	30.1	27.2	21.0	8.2	17.7	11.3	14.0	14.6[g]
1939	15.6	14.1	11.0	13.3	35.6	21.6	14.9	28.4	23.2	19.4	11.3	17.1	10.5	14.2	....
1940	*14.9*	15.0	12.7	14.4	*35.7*	*17.5*	10.2	*24.1*	*20.7*	*13.8*	6.2	15.8	11.8	14.7	....
1941	*14.9*	14.9	13.0	14.4	*32.7*	*18.7*	11.7	*25.3*	*21.3*	*15.5*	7.7	12.9	10.7	13.8	....
1942	*16.8*	20.8	14.9	19.2	*37.1*	*18.5*	*13.0*	*24.8*	*21.2*	*14.5*	6.6	*11.3*	11.0	*14.1*	....
Average 1934–38	13.7	9.9	12.5	10.6	34.5	20.2	14.6	26.2	22.5	16.9	7.8	15.9	10.6	14.4	13.8
1929–38	14.0	11.1	12.1	11.3	33.5	20.1	14.7	25.9	22.3	16.7	8.1	15.8	10.7	14.5	12.1
1914–18	13.6	14.1	10.3	13.1	32.6	15.5	....	....	....	....	9.0	....	11.1	13.0	9.5
1909–13	14.6	14.2	10.0	13.0	31.7	18.1	13.5	25.0	18.4	16.8	8.9	....	12.1	12.5	10.2

* Data summarized mainly from Tables III, IV, and VII (except for India and USSR), with yields computed throughout from production and acreage (*sown* acreage for United States and Argentina). Averages for 1909–13 and 1914–18 are for areas roughly comparable with recent years. Decline from 1909–13 to 1914–18 in Europe may be exaggerated by one or two per cent. Figures for 1940–1942 are for 1939 boundaries.

[a] Excludes USSR, China, Iran, Iraq, Transjordania, and various areas producing under 1 million bushels a year.

[b] Spain, Portugal, Switzerland, Sweden.

[c] Germany, Austria, Czechoslovakia, Poland.

[d] Hungary, Yugoslavia, Rumania, Bulgaria.

[e] French Morocco, Algeria, Tunis.

[f] Turkey, "Other Near East," Egypt.

[g] Not comparable with 1934 and 1935; data for 1936 and 1938 reported by the International Institute of Agriculture as unofficial.

[h] Data not available; rough approximation included in world total.

[i] Not comparable with recent years.

TABLE III.—WHEAT PRODUCTION IN PRINCIPAL PRODUCING COUNTRIES, 1934–42 WITH COMPARISONS*

(Million bushels)

Year	U.S. total	U.S. winter	U.S. spring	Canada	Australia	Argentina	Uruguay	Chile	Hungary	Yugoslavia	Rumania	Bulgaria	Morocco	Algeria	Tunis
1934...	526.1	438.7	87.4	275.8	133.4	240.7	10.7	30.1	64.8	68.3	76.6	39.6	39.6	43.5	13.8
1935...	628.2	469.4	158.8	281.9	144.2	141.5	15.1	31.8	84.2	73.1	96.4	47.9	20.0	33.5	16.9
1936...	629.9	523.6	106.3	219.2	151.4	249.9	9.2	28.6	87.8	107.4	128.7	60.4	12.2	29.8	8.1
1937...	873.9	688.6	185.3	180.2	187.3	207.6	16.6	30.3	72.2	86.2	138.2	64.9	20.9	33.2	17.6
1938...	919.9	685.2	234.7	360.0	155.4	379.1	15.5	35.5	98.8	111.3	177.2	79.0	23.2	34.9	14.0
1939...	741.2	565.6	175.5	520.6	210.3	130.7	9.9	31.6	113.1[a]	105.7	163.6	69.0	39.7	44.5	18.2
1940...	813.3	590.2	223.1	540.2	82.2	299.5	7.1	28.8	76.0[a]	69.3	89.3	61.8	25.8	24.7	9.3
1941...	943.1	670.7	272.4	314.8	166.6	224.1	13.7	28.8	S	SS	A	A	29.0	30.9	15.8
1942...	981.3	703.3	278.1	556.7[b]	155.7	235.2	12.5	31.4	SS	SS	SS	S	26.1	25.5	12.9
Average															
1934–38	715.6	561.1	154.5	263.4	154.3	243.8	13.4	31.3	81.6	89.3	123.4	58.4	23.2	35.0	14.1
1929–33	792.2	583.2	209.0	354.3	184.5	228.3	10.4	28.0	78.6	84.8	108.1	51.6	28.0	30.5	12.7
1909–13	681.7	436.1	245.6	197.1	90.5	147.1	6.8	20.1	71.5	62.0	158.7	37.8	17.0	35.2	6.2

Year	United Kingdom	Eire	France	Italy	Germany	Austria	Czechoslovakia	Switzerland	Belgium[c]	Netherlands	Denmark	Norway	Sweden	Spain	Portugal
1934...	69.8	3.80	338.5	233.1	166.5	13.3	50.0	5.52	17.3	18.0	12.8	1.20	27.8	186.8	24.7
1935...	65.4	6.69	285.0	282.8	171.9	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[d]	14.0	55.6	4.47	17.2	15.6	11.3	2.09	21.6	121.5	8.7
1937...	56.4	6.99	257.8	296.3	164.1[d]	14.7	51.3	6.18	16.8	12.7	13.5	2.50	25.3	*110.0*	14.7
1938...	73.3	7.40	372.9	300.7	205.0[d]	16.2	65.7	7.34	22.0	15.9	16.9	2.64	29.5	*96.0*	15.8
1939...	61.6	10.38	273.5	293.3	202.8[e]		*40.0*[f]	5.89	13.8	15.3	15.4	2.86	31.6	105.4	19.0
1940...	A	11.68	SS	261.0	S[e]		*32.0*[f]	6.05	SS	SS	6.9	2.53	15.5	79.4	10.5
1941...	LL	16.26	SS	262.8	A[e]		*35.0*[f]	7.78	S	S	7.0	LL	12.2	*102.9*	16.5
1942...	LL	19.10	SS	268.0	SS[e]		SS[f]	LL	A	S	.7	LL	16.9	109.0	18.2
Average															
1934–38	64.0	6.54	301.8	267.5	174.0	14.7	56.9	5.90	17.7	15.8	13.8	2.06	25.6	134.5	17.2
1929–33	47.2	1.17	311.1	255.0	161.5	12.3	54.3	4.25	14.7	9.3	10.9	.71	21.4	151.5	15.3
1909–13	58.3	1.31	325.6	184.4	131.3	12.8	37.9	3.31	15.8	5.0	6.3	.31	8.1	130.4	8.7

Year	Poland	Lithuania	Latvia	Estonia	Finland	Greece	Turkey	Other Near East[g]	Egypt	Japan	Chosen	Manchukuo	Mexico	South Africa	New Zealand
1934...	76.4	10.5	8.05	3.11	3.28	25.7	99.7	21.5	37.3	47.7	9.3	23.6	11.0	16.4	5.93
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	16.0	7.17
1937...	70.8	8.1	6.30	2.79	7.66	30.0	133.0	24.1	45.4	50.4	10.3	33.2	10.6	10.7	6.04
1938...	79.8	9.2	7.05	3.14	9.40	36.0	157.2	27.3	45.9	45.3	10.4	35.4	11.9	17.4	5.56
1939...	83.4	9.6	7.77	3.13	8.50	38.2	*154.0*	28.1	49.0	61.1	12.6	34.9	14.8	15.3	8.01
1940...	S	A			6.57	34.2	*149.5*	31.3	50.0	66.1	10.2	*27.6*	13.3	15.6	8.31
1941...	S	S			5.71	23.9	*128.6*	20.7	41.3	53.8	10.3	*29.0*	11.7	13.7	8.67
1942...	A	S			6.29	SS	100.6	23.7	46.4	51.0	....	....	15.8	18.5	10.50
Average															
1934–38	75.9	9.2	6.64	2.75	5.97	27.7	124.8	23.6	43.5	47.5	9.6	32.9	11.6	16.8	6.71
1929–33	72.2	8.6	4.36	1.83	1.34	15.6	94.8	19.0	44.7	33.7	8.9	49.6	12.1	11.1	8.30
1909–13	61.7	3.3	1.48	.36	.14	16.3[h]	....	....	33.7	25.1	6.9	....	11.5	6.7	6.92

* Data of U.S. Department of Agriculture and International Institute of Agriculture. See also Table VII. 1909–13 averages are U.S. Department of Agriculture estimates for pre-1939 boundaries. Data in italics are unofficial estimates or approximations, in some cases our own.

[a] Including gains from Czechoslovakia.

[b] Below standing official estimate by 36 million bushels as suggested in September 1943 official releases.

[c] Including Luxemburg.

[d] Including the Saar (average production .5 million bushels).

[e] Including the Saar and the Sudeten area (average production 9 million bushels).

[f] Bohemia-Moravia, Slovakia.

[g] Syria and Lebanon, Palestine, Cyprus.

[h] One year only.

TABLE IV.—WHEAT ACREAGE IN PRINCIPAL PRODUCING COUNTRIES, 1934–42 WITH COMPARISONS*

(Million acres)

Year	U.S. total	U.S. winter	U.S. spring	Canada	Australia	Argentina	Uruguay	Chile	Hungary	Yugoslavia	Rumania	Bulgaria	Morocco	Algeria	Tunis
1934...	64.06	44.83	19.23	23.98	12.54	18.81	1.10	2.12	3.80	5.00	7.61	3.11	3.02	4.07	1.95
1935...	69.61	47.44	22.17	24.12	11.96	14.21	1.27	1.92	4.14	5.31	8.50	2.73	3.62	4.10	2.03
1936...	73.97	49.99	23.98	25.60	12.32	19.26	.99	1.92	4.03	5.46	8.48	2.96	3.19	4.29	1.22
1937...	80.81	57.84	22.97	25.57	13.74	20.72	1.38	1.89	3.66	5.26	8.78	3.23	3.03	4.31	2.40
1938...	78.98	56.46	22.52	25.93	14.35	21.30	1.26	2.04	4.00	5.26	9.44	3.45	3.00	4.10	1.67
1939...	62.80	46.15	16 65	26.76	13 28	17.83	1.16	2.05	4.63[a]	5.44	10.08	3.04	3.43	4.12	1.44
1940...	61.61	43.32	18.29	28.73	12.65	17.51	.92	1.93	4.31[a]	5.18	8.28	3.51	3.95	4.10	1.66
1941...	62.33	45.67	16.66	21.88	12.06	18.04	1.12	1.80	A	S	A	3.50	3.72	4.18	2.03
1942...	52.53	38.34	14.19	21.59	9.28	16.98	1.00	1.85	A	S	SS	A	3.46	4.07	2.21
Average															
1934–38	73.48	51.31	22.17	25.04	12.98	18.86	1.20	1.98	3.93	5.26	8.56	3.10	3.17	4.17	1.85
1929–33	58.20	38.46	19.74	25.94	15.71	19.70	1.06	1.68	3.92	5.14	7.53	2.99	2.89	3.84	1.95
1909–13	51.99	32.98	19.01[b]	9.94	7.60	16.05	.76	1.00	3.71	3.98	9.52[c]	2.41	1.70	3.52	1.31

Year	United Kingdom	Eire	France	Italy	Germany	Austria	Czechoslovakia	Switzerland	Belgium[d]	Netherlands	Denmark	Norway	Sweden	Spain	Portugal
1934...	1.87	.094	13.35	12 27	5.43	.573	2.30	.165	.411	.366	.280	.046	.718	11.39	1.34
1935...	1.88	.163	13.25	12.37	5.22	.601	2.38	.168	.468	.380	.312	.059	.674	11.25	1.38
1936...	1.80	.255	12.86	12.69	5.15[e]	.624	2.29	.171	.469	.374	.296	.075	.694	10.77	1.16
1937...	1.84	.220	12.59	12.78	4.88[e]	.619	2.10	.193	.471	.318	.319	.079	.739	*9.88*	1.22
1938...	1.93	.230	12.19	12.43	5.04[e]	.619	2.22	.183	.487	.311	.325	.086	.763	*8.65*	1.13
1939...	1.76	.255	*11.60*	12.92	*6.00*[f]		*1.20*[g]	.188	.347	.306	.330	.102	.834	8.64	1.25
1940...	A	.305	SS	12.57	A[f]		*1.05*[g]	.191	.401	.332	.199	.100	.763	8.74	1.24
1941...	LL	.463	SS	12.20	L[f]		*1.10*[g]	.215	A	.339	.203	LL	.707	9.60	1.37
1942...	LL	.575	SS	*13.00*	SS[f]		SS[g]	.227	L	A	.014	LL	.689	*9.51*	1.28
Average															
1934–38	1.86	.192	12.85	12.51	5.14	.607	2.26	.176	.461	.350	.306	.069	.718	10.39	1.25
1929–33	1.42	.030	13.28	12.05	5.02	.523	2.07	.138	.408	.216	.255	.029	.668	11.08	1.27
1909–13	1.85	.035	16.50	11.79	4.03	.635	1.72	.105	.431	.138	.154	.012	.255	9.55	1.18

Year	Poland	Lithuania	Latvia	Estonia	Finland	Greece	Turkey	Other Near East[h]	Egypt	Japan	Chosen	Manchukuo	Mexico	South Africa	New Zealand
1934...	4.38	.514	.351	.161	.125	1.96	7.80	2.01	1.44	1.59	.798	2.04	1.22	1.86	.225
1935...	4.33	.536	.347	.155	.174	2.09	8.47	2.04	1.46	1.63	.801	2.45	1.14	2.30	.249
1936...	4.30	.490	.319	.162	.208	2.06	8.72	2.08	1.46	1.69	.817	2.70	1.26	2.04	.222
1937...	4.18	.521	.338	.168	.279	2.12	8.27	2.11	1.42	1.78	.836	3.00	1.20	1.30	.186
1938...	4.34	.501	.348	.172	.323	2.13	9.46	2.11	1.47	1.78	.845	3.18	1.24	2.08	.189
1939...	4.36	.512	.378	.185	.336	2.36	9.94	2.08	1.50	1.83	.860	3.17	1.41	2.13	.258
1940...	S	.498	A	.175	.349	2.58	10.83	*2.17*	1.56	2.02	.859	2.52	1.45	2.31	.243
1941...	S	A			.331	2.30	10.89	*2.35*	1.56	2.03	*.773*	A	1.37	2.36	.258
1942...	A	A			.314	S	10.87	*2.64*	1.64	....	....	....	1.61	2.67	.288
Average															
1934–38	4.31	.512	.341	.164	.222	2.07	8.54	2.07	1.45	1.69	.819	2.67	1.21	1.92	.214
1929–33	4.11	.461	.221	.111	.053	1.47	6.83	1.80	1.59	1.28	.824	3.40	1.26	1.36	.269
1909–13	3.34	.211	.085	.023	.008	1.13[i]	....	....	1.31	1.18	.574	....	2.17[j]	.74	.241

* For general notes see Table III. Sown acreages for United States and Argentina (harvested acreage given in Table VIII) Canada (spring wheat), and Australia; otherwise mainly harvested acreage.

[a] Including gains from Czechoslovakia.
[b] Harvested acreage.
[c] Four-year average.
[d] Including Luxemburg.
[e] Including the Saar (approximate area .02 million acres).
[f] Including the Saar and the Sudeten area (approximate area .275 million acres).
[g] Bohemia-Moravia, Slovakia.
[h] Syria and Lebanon, Palestine, Cyprus.
[i] One year only.
[j] Two-year average.

TABLE V.—WHEAT YIELD PER ACRE IN PRINCIPAL PRODUCING COUNTRIES, 1934–42 WITH COMPARISONS*

(Bushels of 60 pounds)

Year	U.S. total	U.S. winter	U.S. spring	Canada	Australia	Argentina	Uruguay	Chile	Hungary	Yugoslavia	Rumania	Bulgaria	Morocco	Algeria	Tunis
1934...	8.2	9.8	4.5	11.5	10.6	12.8	9.7	14.2	17.1	13.7	10.1	12.7	13.1	10.7	7.1
1935...	9.0	9.9	7.2	11.7	12.1	10.0	11.9	16.6	20.3	13.8	11.3	17.5	5.5	8.2	8.3
1936...	8.5	10.5	4.4	8.6	12.3	13.0	9.3	14.9	21.8	19.7	15.2	20.4	3.8	6.9	6.6
1937...	10.8	11.9	8.1	7.0	13.6	10.0	12.0	16.0	19.7	16.4	15.7	20.1	6.9	7.7	7.3
1938...	11.6	12.1	10.4	13.9	10.8	17.8	12.3	17.4	24.7	21.2	18.8	22.9	7.7	8.5	8.4
1939...	11.8	12.3	10.5	19.5	15.8	7.3	8.5	15.4	24.4[a]	19.4	16.2	22.7	11.6	10.8	12.6
1940...	13.2	13.6	12.2	18.8	6.5	17.1	7.7	14.9	17.6[a]	13.4	10.8	17.6	6.5	6.0	5.6
1941...	15.1	14.7	16.4	14.4	13.8	12.4	12.2	16.0	S	S	A	S	7.8	7.4	7.8
1942...	18.7	18.3	19.6	25.8	16.8	13.9	12.5	17.0	SS	SS	SS	S	7.5	6.3	5.8
Average															
1934–38	9.6	10.8	6.9	10.5	11.9	12.9	11.2	15.8	20.8	17.0	14.4	18.8	7.3	8.4	7.6
1929–38	11.8	13.0	9.2	12.1	11.8	12.2	10.5	16.2	20.4	16.7	14.4	18.1	8.4	8.2	7.1
1909–13	13.1	13.2	12.9	19.8	11.9	9.2	8.9	20.0	19.3	15.6	16.7[b]	15.7	10.0	10.0	4.8

Year	United Kingdom	Eire	France	Italy	Germany	Austria	Czechoslovakia	Switzerland	Belgium[c]	Netherlands	Denmark	Norway	Sweden	Spain	Portugal
1934...	37.3	40.4	25.4	19.0	30.7	23.2	21.7	33.5	42.1	49.2	45.7	26.1	38.7	16.4	18.4
1935...	34.8	41.0	21.5	22.9	32.9	25.8	26.1	35.5	36.5	43.9	47.1	31.7	35.0	14.0	16.0
1936...	30.7	30.7	19.8	17.7	31.6[d]	22.4	24.3	26.1	36.7	41.7	38.2	27.9	31.1	11.3	7.5
1937...	30.7	31.8	20.5	23.2	33.6[d]	23.7	24.4	32.0	35.7	39.9	42.3	31.6	34.2	*11.1*	12.0
1938...	38.0	32.2	30.6	24.2	40.7[d]	26.2	29.6	40.1	45.2	51.1	52.0	30.7	38.7	*11.1*	14.0
1939...	35.0	40.7	*23.6*	22.7	*33.8*[e]		*33.3*[f]	31.3	39.8	50.0	46.7	28.0	37.9	12.2	15.2
1940...	A	38.3	A	20.8	S[e]		*30.5*[f]	31.7	SS	SS	34.7	25.3	20.3	9.1	8.5
1941...	S	35.1	A	21.5	S[e]		*31.8*[f]	36.2	SS	S	34.5	S	17.3	*10.7*	*12.0*
1942...	L	33.2	A	20.6	S[e]		LL[f]	L	SS	S	50.0	S	24.5	11.5	14.2
Average															
1934–38	34.4	34.1	23.5	21.4	33.9	24.2	25.2	33.7	39.5	45.1	45.1	29.9	35.7	12.9	13.8
1929–38	33.9	34.8	23.5	21.3	33.0	23.9	25.7	32.4	37.7	44.2	44.1	28.4	33.9	13.3	12.9
1909–13	31.5	37.4	19.7	15.6	32.6	20.2	22.0	31.6	36.7	36.1	41.1	25.5	31.8	13.7	7.4

Year	Poland	Lithuania	Latvia	Estonia	Finland	Greece	Turkey	Other Near East[g]	Egypt	Japan	Chosen	Manchukuo	Mexico	South Africa	New Zealand
1934...	17.4	20.4	22.9	19.3	26.2	13.1	12.8	10.7	25.9	30.0	11.7	11.6	9.0	8.8	26.4
1935...	17.1	18.8	18.8	14.6	24.3	13.0	10.9	12.2	29.6	29.9	12.1	15.2	9.4	10.3	35.6
1936...	18.2	16.3	16.5	15.0	25.3	9.5	16.2	9.8	31.3	26.7	10.0	13.0	10.8	7.8	32.3
1937...	16.9	15.5	18.6	16.6	27.5	14.2	16.1	11.4	32.0	28.3	12.3	11.1	8.8	8.2	32.5
1938...	18.4	18.4	20.3	18.3	29.1	16.9	16.6	12.9	31.2	25.4	12.3	11.1	9.6	8.4	29.4
1939...	19.1	18.8	20.6	16.9	25.3	16.2	15.5	13.5	32.7	33.4	14.7	11.0	10.5	7.2	31.0
1940...	S	S			18.8	13.3	*13.8*	14.4	32.1	32.7	11.9	*11.0*	9.2	6.8	34.2
1941...	A	S			17.3	10.4	11.8	8.8	26.5	26.5	*13.3*	S	8.5	5.8	33.6
1942...	A	S			20.0	SS	9.3	9.0	28.3	....	....	....	9.8	6.9	36.5
Average															
1934–38	17.6	18.0	19.5	16.8	26.9	13.4	14.5	11.4	30.0	28.1	11.7	12.4	9.6	8.7	31.4
1929–38	17.6	18.3	19.6	16.7	26.6	12.2	14.3	11.0	29.0	27.2	11.2	14.0	9.6	8.3	31.2
1909–13	18.4	15.5	17.4	15.8	17.1	14.4[h]	....	....	25.6	21.3	12.0	....	5.3[i]	9.0	28.7

* Computed from data in Tables III and IV. Averages are computed from average production and acreage.

[a] Including gains from Czechoslovakia.
[b] Four-year average.
[c] Including Luxemburg.
[d] Including the Saar.
[e] Including the Saar and the Sudeten area.
[f] Bohemia-Moravia, Slovakia.
[g] Syria and Lebanon, Palestine, Cyprus.
[h] One year only.
[i] Two-year average.

TABLE VI.—PRODUCTION OF OTHER GRAINS AND POTATOES IN PRINCIPAL PRODUCING AREAS, 1934–42*

(Million bushels)

Year	Rye							Potatoes					
	Continental Europe ex-Russia					United States	Canada	Continental Europe ex-Russia			British Isles	United States	Canada
	Total	Central Europe[a]	Balkans[b]	Four neutrals[c]	Others			Total	Central Europe[a]	Others			
1934	894	637	49	48	160	16	5	5,171	3,409	1,762	296	406	80
1935	886	644	59	42	141	57	10	4,631	3,077	1,554	270	379	64
1936	843	617	64	36	126	24	4	5,148	3,449	1,699	262	324	66
1937	816	572	62	38	144	49	6	5,890	4,105	1,785	285	376	71
1938	975	723	71	34	147	56	11	5,437	3,637	1,800	283	356	60
1939	975	717	71	35	152	39	15	*5,200*	*3,500*	*1,700*	307	342	61
1940	*760*	*550*	60	28	*122*	40	14	*5,550*	*4,000*	*1,550*	*370*	376	70
1941	*825*	*615*	*58*	*36*	*116*	45	12	*5,275*	*3,725*	*1,550*	*435*	356	65
1942	*800*	*575*	*55*	*45*	*125*	57	25	*6,000*	*4,150*	*1,850*	*465*	371	72

Year	Corn							Barley				
	Continental Europe ex-Russia				North Africa[d]	United States	Argentina	Continental Europe ex-Russia				
	Total	Balkans[b]	Italy	Four neutrals[c]				Total	Central Europe[a]	Balkans[b]	Four neutrals[c]	Others
1934	729	522	126	43	72	1,449	452	670	275	101	142	152
1935	616	439	98	40	72	2,299	396	656	284	107	110	155
1936	781	578	120	40	75	1,506	340	657	280	146	90	141
1937	776	558	134	38	72	2,643	174	644	294	111	81	158
1938	727	529	116	33	71	2,549	192	684	333	117	47	187
1939	*732*	*542*	102	48	*70*	2,581	408	*679*	300	120	78	*181*
1940	*765*	*550*	135	44	*73*	2,462	403	*633*	*285*	115	75	*158*
1941	*670*	*500*	104	*41*	*62*	2,678	356	*630*	*285*	*116*	82	*147*
1942	*715*	*520*	*150*	*41*	*72*	3,175	76	*725*	*328*	*123*	98	*176*

Year	Barley (*Continued*)					Oats									
						Continental Europe ex-Russia					British Isles	French North Africa[e]	U.S.	Canada	Argentina
	British Isles	North Africa[d]	U.S.	Canada	Argentina	Total	Central Europe[a]	Balkans[b]	Four neutrals[c]	Others					
1934	45	130	117	64	36	1,502	669	92	146	595	182	15	544	341	62
1935	42	94	289	84	20	1,464	651	90	133	590	189	10	1,210	419	36
1936	40	114	148	72	20	1,479	685	115	128	551	175	14	793	289	55
1937	36	85	222	83	18	1,512	699	94	119	600	169	14	1,177	285	52
1938	47	92	257	102	21	1,680	750	91	125	714	179	16	1,089	395	52
1939	45	*146*	278	103	33	1,653	732	102	129	690	178	23	958	408	55
1940	*55*	79	309	104	32	*1,500*	*712*	*109*	103	*576*	*250*	10	1,245	404	37
1941	*60*	*112*	362	111	17	*1,390*	*682*	*88*	*102*	*518*	*260*	12	1,181	325	31
1942	*75*	88	426	259	16	*1,490*	*708*	*92*	*122*	*568*	*300*	16	1,359	693	48

* See Table III, general note, and *Foreign Crops and Markets*, July 1943, and August 1943.

[a] Germany, Austria, Czechoslovakia, Poland, Luxemburg.

[b] Hungary, Yugoslavia, Rumania, Bulgaria, Greece; plus Albania for corn.

[c] Spain, Portugal, Switzerland, Sweden.

[d] French Morocco, Algeria, Tunis, Egypt.

[e] French Morocco, Algeria, Tunis.

TABLE VII.—WHEAT PRODUCTION IN MISCELLANEOUS COUNTRIES, 1937–42*

(*Million bushels*)

Year	Prairie Provinces	Other Canada	China	Iran (Persia)	Iraq	Brazil	Peru
1937...	156.8	23.4	636	71.4	21.3	5.34	3.32
1938...	336.0	24.0	640[a]	....	22.0	5.93	3.79
1939...	494.0	26.6	667[a]	*62.5*	*26.0*	3.73	4.11
1940...	513.8	26.4	700[a]	....	*16.5*	....	3.74
1941...	256.0	18.8	720[a]	44.1	*12.9*	....	3.69
1942...	529.0[b]	27.7	...	*12.0*	*14.7*	*6.25*	*3.67*

* See Table III, general note.

[a] Estimates of the Shanghai office of the U.S. Department of Agriculture.

[b] See Table III, note *b*.

TABLE VIII.—WHEAT ACREAGE IN THE UNITED STATES AND ARGENTINA, 1937–42*

(*Million acres*)

Harvest year	U.S. total		U.S. winter		U.S. spring		Argentina	
	Sown	Harvested	Sown	Harvested	Sown	Harvested	Sown	Harvested
1937..	80.8	64.2	57.8	47.1	23.0	17.1	20.7	17.2
1938..	79.0	69.2	56.5	49.6	22.5	19.6	21.3	20.1
1939..	62.8	52.7	46.2	37.7	16.6	15.0	17.8	12.5
1940..	61.6	53.0	43.3	35.8	18.3	17.2	17.5	16.6
1941..	62.3	55.6	45.7	39.5	16.6	16.1	18.0	14.7
1942..	52.5	49.5	38.3	35.7	14.2	13.8	17.0	12.2

* Latest official data.

TABLE IX.—WHEAT MARKETINGS IN NORTH AMERICA, MONTHLY, FROM 1937–38

Year	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Total
	UNITED STATES: RECEIPTS AT TWELVE PRIMARY MARKETS* (*Million bushels*)													
1937-38.....	111.9	62.2	35.2	22.6	16.1	10.6	10.9	8.5	10.6	10.9	14.3	17.0	....	331
1938-39.....	101.2	61.1	38.5	27.3	19.1	14.9	11.9	9.5	13.7	16.0	25.5	44.0	....	383
1939-40.....	99.0	43.9	39.0	19.8	12.2	11.5	9.4	11.4	21.9	28.4	29.4	13.4	....	339
1940-41.....	103.9	46.2	39.9	18.5	10.0	9.0	10.4	8.4	12.6	17.0	29.9	49.3	....	355
1941-42.....	102.2	50.3	39.9	32.4	17.6	22.5	19.7	17.8	17.5	12.7	18.1	25.1	....	376
1942-43.....	62.2	39.7	53.4	16.4	31.2	31.5	35.9	35.9	48.5	35.8	34.7	57.4	....	512
	CANADA: RECEIPTS AT COUNTRY ELEVATORS AND PLATFORM LOADINGS† (*Million bushels*)													
1937-38.....	.....	20.5	45.0	17.8	9.8	5.2	5.6	3.2	4.0	4.6	2.8	3.9	3.1	126
1938-39.....	.....	39.6	122.2	62.0	21.2	9.6	4.6	2.6	5.5	5.1	5.0	5.2	8.0	291
1939-40.....	.....	54.1	178.2	78.7	36.7	15.3	4.5	5.5	7.9	6.0	7.0	12.8	20.0	427
1940-41.....	.....	35.6	102.5	69.2	37.7	39.2	20.7	17.6	18.0	24.0	32.6	33.4	27.9	458
1941-42.....	.....	20.1	29.9	43.7	29.8	25.9	10.6	6.5	8.3	7.1	7.1	11.0	24.7	225
1942-43.....	.....	2.5	23.7	61.5	30.0	24.1	13.0	9.5	10.0	14.1	18.4	31.3	21.8	260

* Trade data, here compiled from *Survey of Current Business* and *Chicago Journal of Commerce*. Includes Chicago, Duluth, Indianapolis, Kansas City, Milwaukee, Minneapolis, Omaha, Peoria, Sioux City, St. Joseph, St. Louis, Wichita.

† Data for Prairie Provinces only, computed from official figures given in *Canadian Grain Statistics;* from August 1939 including small receipts at interior and private mill elevators not previously included. For corresponding data from 1921–22, see WHEAT STUDIES, October 1936, XIII, 62, and December 1939, XVI, 188.

TABLE X.—WORLD WHEAT VISIBLE SUPPLIES, AUGUST 1, 1937–43*

(*Million bushels*)

Approximate date	Grand total	Four exporters	North America	United States grain		Canadian grain		Australia	Argentina	Afloat to Europe	U.K. ports
				United States[a]	Canada	Canada[b]	United States				
Aug. 1											
1937.....	194.3	156.7	121.3	89.3	.1	27.8	4.1	14.5	20.9	25.6	12.0
1938.....	231.2	180.6	114.8	96.4	.3	17.1	1.0	21.5	44.3	36.5	14.1
1939.....	533.2	472.8	241.3	149.3	.5	84.9	6.6	18.0	213.5	34.9	25.5
1940.....	.....	577.2	422.9	160.1	.1	235.6	27.1	98.5	55.8	....	....
1941.....	.....	.....	689.4	246.7	.2	411.2	31.3	42.3	161.2	....	....
1942.....	.....	.....	656.7	262.4	.1	374.1	20.1	....	212.4	....	....
1943.....	.....	.....	607.8	221.3	.0	371.2	15.3	....	263.2	....	....

* Selected, for dates nearest the first of the 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 *Boletin Informativo* for Argentina.

[a] Data not strictly comparable: two markets, Enid, Oklahoma, and Amarillo, Texas, added to the total at the beginning of January 1941; two other markets (not specified) added in June 1941, and one in November 1941.

[b] Excluding, for comparability, stocks in transit by rail which are now included in officially published totals.

TABLE XI.—WHEAT CARRYOVERS IN THE UNITED STATES AND CANADA, 1934–43*

(Million bushels)

Year	United States (July 1)						Canada (July 31)						
	On farms	In country mills and elevators	Commercial stocks	In city mills[a]	Total in four positions	U.S. grain in Canada	On farms	In country mills and elevators[b]	In terminal elevators	In transit	In flour mills[c]	Total in five positions	Canadian grain in U.S.[d]
1934...	61.1	48.2	80.5[e]	83.1[e]	272.9	.0	8.7	70.4	104.0	7.7	2.1	192.9	10.0
1935...	44.0	30.4	22.0[e]	49.5[e]	145.9	.0	7.9	53.8	126.6	12.9	.9	202.1	11.7
1936...	43.1	21.5	25.2[e]	50.6[e]	140.4	.0	5.5	36.2	59.7	5.0	1.7	108.1	19.3
1937...	22.0	11.8	9.0	40.4	83.2	.1	4.0	7.4	17.7	2.8	1.0	32.9	4.1
1938...	58.8	31.3	22.2	40.8	153.1	.7	5.1	2.8	12.2	2.4	1.1	23.6	1.0
1939...	88.0	36.8	64.1	61.1	250.0	.6	4.7	13.9	70.1	4.8	1.1	94.6	8.3
1940...	79.6	35.3	84.2	80.6	279.7	.6	17.3	64.0	173.6	16.9	1.1	272.9	27.5
1941...	86.8	73.8	142.7	81.6	384.9	.2	14.0	224.4	187.6	21.1	1.2	448.3	31.8
1942...	163.7	142.4	224.4	96.8	631.7[f]	.2	10.4	139.8	232.9	18.7	3.1	404.9	18.9
1943...	190.0	102.4	162.2	104.4	618.0[f]	.0	197.2	232.1	137.3	16.5	3.1	586.2	15.3

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

[a] Estimates of U.S. Department of Agriculture, based on wheat reported held in city mills (Table XII); including amounts "stored for others."

[b] Strictly "in country, private, and mill elevators in the Western Division"; but including stocks in flour mills in the Western Division.

[c] In the Eastern Division only.

[d] In bond, usually chiefly for export as wheat. Includes bonded wheat in transit by rail from 1940.

[e] Including some new-crop wheat. See *The Wheat Situation*, August 1941, p. 2.

[f] Including 4.4 and 59.0 million bushels in CCC bins in 1942 and 1943 respectively.

TABLE XII.—CITY MILL STOCKS IN THE UNITED STATES, JUNE 30, 1934–43*

(Million bushels)

Year	Wheat in mills[a]			Other wheat owned by mills				Total wheat owned by mills[c]	Flour as wheat[d]	Percentage of census flour output represented[e]
	Total	Owned	Stored for others	Private terminals[b]	Public terminals	Transit to mills	Country elevators			
1934.....	76.97	70.06	6.91	9.70	5.22	13.02	4.97	102.97	18.40	92.6
1935.....	46.01	42.64	3.37	3.59	3.53	6.64	2.30	58.70	17.10	96.8
1936.....	47.10	40.94	6.16	2.47	3.26	13.28	2.69	62.64	20.00	97.0
1937.....	49.35	42.20	7.15	2.14	2.03	18.97	2.53	67.87	17.73	93.3
1938.....	50.75	39.77	10.98	2.90	2.55	8.99	2.83	57.04	16.49	93.6
1939.....	78.90	65.74	13.16	6.17	5.14	17.44	5.23	99.72	17.11	92.8
1940.....	83.51	73.67	9.84	7.17	6.35	13.46	3.04	103.69	19.71	91.8
1941.....	87.59	63.33	24.26	3.86	5.01	15.69	3.28	91.17	18.80	93.3
1942.....	97.81	68.02	29.79	5.77	7.77	14.03	2.16	97.75	17.01	93.3
1943.....	103.86	87.72	16.14	6.71	5.83	20.05	4.21	124.52	23.76	92.1

* As reported to Bureau of the Census, here compiled from press releases of U.S. Department of Commerce. Available from 1925. See WHEAT STUDIES, December 1936, XIII, 218.

[a] And in elevators attached to mills.

[b] Private terminal elevators not attached to mills.

[c] Excluding wheat "stored for others."

[d] Taking 1 bbl. = 4.7 bu.; but see Table XXI.

[e] Percentage of flour output reported in Census of Manufactures for the second or third calendar year preceding. The percentage for 1936 would be about 5 per cent lower if the census of 1933 had been as complete as earlier censuses. See WHEAT STUDIES, April 1936, XII, 275.

TABLE XIII.—WORLD WHEAT STOCKS EX-RUSSIA AND EX-ASIA, ABOUT AUGUST 1, 1934–43 WITH COMPARISONS*

(Million bushels)

Year	Grand total	Four chief ex-porters[a]	North America[b]	United States grain[b]	Canadian grain	Australia	Argentina	British Isles	Continental Europe			French North Africa,[d] Egypt	Afloat
									Total	Danube[c]	Other		Total
1934...	1,187	678	476	273	203	84	118	44	406	67	339	13	46
1935...	938	502	360	146	214	57	85	39	345	34	311	24	28
1936...	750	370	267	140	127	43	60	42	288	34	254	18	32
1937...	512	206	120	83	37	41	45	38	222	40	182	12	34
1938...	594	301	179	154	25	50	72	35	195	36	159	14	49
1939...	1,150	634	354	251	103	50	230	75	375	75	300	18	48
1940...	1,400	785	580	280	300	130	75	100	420	85	335	35	60
1941...	1,550	1,115	865	385	480	70	180	125	250	LL	SS	A	44
1942...	1,800	1,421	1,056	632	424	145	220	115	215	LL	SS	L	SS
1943...	2,025	1,694	1,219	618	601	205	270	120	165	SS	SS	A	SS
Average													
1934–38	796	411	280	159	121	55	76	40	291	42	249	16	38
1929–33	955	608	475	325	149	50	83	35	248	53	196	16	47

* Revised estimates (see WHEAT STUDIES, October 1939, XVI, 66, for data from 1922) based so far as possible upon stocks of old-crop wheat reported either officially (e.g., North America) or unofficially (e.g., afloat to Europe).

[a] United States, Canada, Argentina, Australia.

[b] United States data as of July 1.

[c] Hungary, Yugoslavia, Rumania, Bulgaria.

[d] French Morocco, Algeria, Tunis.

TABLE XIV.—SUMMARY OF INTERNATIONAL TRADE IN WHEAT AND FLOUR, ANNUALLY FROM 1934–35 WITH COMPARISONS*

(Million bushels)

Year Aug.-July	Net exports of net-exporting countries											Net imports of Europe ex-Danube		
	Total	Four overseas exporters					French North Africa[a]	Lower Danube	India	Others[b] ex-USSR	USSR	Total[c]	British Isles	Continent[c]
		Total	United States	Canada	Australia	Argentina								
1934–35..	540	454	(4)	163	109	182	26	22	1	35	2	350	217	133
1935–36..	518	418	(32)	246	102	70	20	25	1	25	29	339	220	119
1936–37..	623	474	(17)	210	102	162	6	89	19	30	5	443	212	231[d]
1937–38..	555	404	117	89	126	72	15	54	19	20	43	404	208	196[d]
1938–39..	643	479	103	158	96	122	10	85	(1)	35	34	428	247	181[d]
1939–40..	*620*[e]	502	45	192	*86*	179	*17*	*87*	*1*	*13*[e]	..[f]	*445*	*240*	*205*
1940–41..	*500*[e]	451	31	231	93	96	*17*	*16*	*0*	*8*[e]	8	*320*	*245*	*75*
1941–42..	*415*[e]	*373*	*27*	222	41	83	*16*	*16*	*6*	*4*[e]	..[f]	*260*	*205*	*55*
1942–43..	*360*[e]	*345*	*28*	212	*36*	69	*3*	*8*	..[b]	*4*[e]	..[f]	*215*	*170*	*45*
Average														
1934–39..	576	454	44	173	107	122	15	55	8	29	23	393	221	172
1929–34..	693	573	88	224	121	139	18	46	1	7	48	509	240	269

* Mainly from data in Table XV. But data for the United States are here adjusted for changes in stocks of U.S. wheat in Canada, and through 1936–37 data for Canada are adjusted for changes in stocks of Canadian wheat in the U.S.; from 1937–38 data for Canada include grain clearances as in WHEAT STUDIES, December 1941, XVIII, 185, Series B. Figures in parentheses represent net imports, ignored in arriving at totals and averages. Those in italics for 1939–40 and following are our present approximations.

[a] French Morocco, Algeria, Tunis.

[b] Including various countries.

[c] Deducting net exports by one or more of these countries in years in which they were net exporters.

[d] Including our estimates for Spain.

[e] Not including exports of former Poland and Czechoslovakia.

[f] Net import.

TABLE XV.—INTERNATIONAL TRADE IN WHEAT AND FLOUR, ANNUALLY FROM 1934–35 WITH COMPARISONS*

(Million bushels)

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

Year Aug.-July	United States[a]	Canada[b]	Australia	Argentina	Brazil	Chile	Hungary	Yugoslavia	Rumania	Bulgaria	Morocco	Algeria	Tunis	India	USSR
1934-35.	(3.9)	163 1	109.1	181.5	(32.6)	.37	12 80	4.26	4.22	.37	7.59	13.13	4.80	1.0	1.9
1935-36.	(31.7)	246.5	102.1	69.9	(37 2)	2 29	17.30	.79	5.87	1.14	4.87	10.07	4.63	1.2	28.5
1936-37.	(17.1)	210.0	101.7	162.4	(38.6)	(.24)	25 09	18.27	37.58	7.91	(1.51)	6.16	(.60)	18.6	4.6
1937-38.	117.6	89.4	125.9	71.6	(36.8)	(.11)	9.04	4.65	32.61	7.88	2.40	7.10	5.01	18.6	43.0
1938-39.	102.6	158.1	95.6	122 2	(40.6)	(1.02)	29.64	5.46	45.96	3.50	4.10[c]	1.48[c]	4.27	(1.3)	33.2[d]
1939-40.	44.2	192.2	86.4	179.3	(32.7)	(.23)	38.40[c]	9.82	30.75	LL	L			SS	(..)[e]
1940-41.	31.2	231.1	92.5	95.9	(33.2)	(.16)	SS	(...)[e]	SS	LL	L			SS	SS
1941-42.	*27.0*	222 0	41.0	83.3	(33.8)[f]	*(3.00)*	SS	SS	SS	SS	A			SS	(..)[e]
1942-43.	*28.0*	211.5	*36.0*	68.6	(32.4)[f]	*(3.50)*	SS	SS	SS	SS	SS			(..)[e]	(..)[e]
Average 1934-39.	33.5	173.1	106.9	121.5	(37.2)	.26	18.77	6.69	25 25	4.16	3.49	7.59	3.62	7.6	22.2
1929-34.	87.5	221.7	121.5	139.1	(32.3)	(.13)	20.68	9.09	11.31	4.57	5.40	8.20	5.09	(.5)	47.7

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

Year Aug.-July	United Kingdom	Eire	France[g]	Italy	Germany	Austria	Czechoslovakia	Switzerland	Belgium[h]	Netherlands	Denmark	Norway	Sweden	Spain	Portugal
1934-35.	200.5	16.9	(16.6)	11.5	10.1	9.8	1.4	17.9	39.8	19.5	18.99	8.88	(1.78)	(.00)	.70
1935-36.	205.3	15.0	8.0	5.1	(.3)	7.2	2.2	16.7	39.0	21.7	8.99	7.73	(1.89)	(.00)	(3.59)
1936-37.	199.1	12.5	12.0	57.5	31.8	9.9	(9.2)	17.7	39.4	21.3	6.36	8.55	.53	LL	.14
1937-38.	194.7	13.1	15.5	4.4	38.4	7.6	1.4	14.9	37.0	24.1	6 55	7.03	(.75)	LL	2.39
1938-39.	229.5	17.1	(9.2)	13.2	43.0[i]		(1.3)[i]	17.1	37.7	30.3	5.08	8.61	1.63	LL	2.25
1939-40.	L	S	LL	LL	LL			LL	S	A	SS	LL	...[e]	LL	.92
1940-41.	LL	SS	LL	SS	SS			SS	SS	SS	SS	SS	(A)	LL	3.84
1941-42.	A	SS	LL	SS	SS			SS	SS	SS	SS	SS	...[e]	LL	5.21
1942-43.	SS	SS	SS	SS	SS			SS	SS	SS	SS	SS	...[e]	LL	1.89[j]
Average 1934-39.	205.8	14.9	1.9	18.3	23.2	8.3	(1.1)	16.9	38.6	23.4	9.19	8.16	(.45)	*10.00*	.38
1929-34.	221.3	19.1	39.2	35.0	20.3	14.6	13.7	18.5	44.0	29.4	12.40	8.27	4.69	2.78	2.88

C. NET IMPORTS *(In parentheses, net exports)*

Year Aug.-July	Poland	Lithuania	Latvia	Estonia	Finland	Greece	Turkey	Syria, Lebanon	Egypt	Japan[k]	Manchukuo	China	Cuba[l]	South Africa	New Zealand
1934-35.	(3.89)	(.97)	(1.10)	(.23)	4.26	14.5	(4.39)	(.34)	2.15	1.1	31.3	21.1	4.58	.91	.59
1935-36.	(7.09)	(2.12)	(1.54)	.00	4.33	14.8	(.52)	(.31)	.18	4.8	14.5	7.9	4.92	.07	.96
1936-37.	(5.33)	(.00)	.99	.12	3.69	21.5	(4.30)	(1.39)	(.55)	3.7	4.9	1.2	4.69	(.94)	.56
1937-38.	(.43)	(.08)	.95	.16	3.01	18.3	(3.65)	.91	(.57)	(10.0)	5.7	8.8	4.95	.93	4.07
1938-39.	(3.13)	(1.05)	.49	.02	2.30	13.0	(2.01)	(1.06)	.20	(9.8)	13.3	29.3	5.01	1.73	3.34
1939-40.	(LL)	...	...	...	SS	12.0	(2 34)	A	(.46)	(7.9)	L	16.9	5.03	SS	1.31
1940-41.	(LL)	...	...	...	S	SS	(SS)	...[e]	(...)[m]	(LL)	SS	31.8[n]	5.14	LL	1.62
1941-42.	(LL)	...	...	...	SS	SS	...[e]	...[e]	LL	(A)	SS	SS	*5.00*	LL	2.01
1942-43.	(LL)	...	...	...	SS	SS	...[e]	...[e]	LL	(S)	SS	SS	*5.00*	LL	2.13
Average 1934-39.	(3.97)	(.84)	(.04)	.01	3.52	16.4	(2.97)	(.44)	.28	(2.0)	13.9	13.7	4.83	.61	1.90
1929-34.	(2.32)	(.26)	1.00	.49	4.95	19.9	(.60)	1.00	5.92	1.17	...	...	4.42	1.85	.75

* Data from official sources, in large part through International Institute of Agriculture. Data in italics are our present approximations.

[a] Including shipments to possessions; from 1935–36 derived by subtracting imports for consumption rather than general imports less re-exports.

[b] As described in Table XIV, general note. Gross trade for 1941–42 and 1942–43.

[c] Eleven months.

[d] Five months.

[e] Net import.

[f] Argentine shipments to Brazil.

[g] Net trade in "*commerce général.*"

[h] Including Luxemburg.

[i] See WHEAT STUDIES, December 1939, XVI, 157.

[j] Eight months.

[k] Exclusive of trade with Chosen and Taiwan.

[l] Gross imports of flour; all from United States from January 1939, mainly from United States in earlier years.

[m] Net export.

[n] Gross imports from May 1941.

TABLE XVI.—UNITED STATES TRADE IN WHEAT, ANNUALLY FROM 1936–37*

(Million bushels)

Year July-June	Wheat grain			Flour as wheat			Wheat and flour				
	Exports	Imports		Exports		Imports	Exports[a]	Imports[a]	Shipments (E)	Net exports	
		(A)	(B)	(C)	(D)					(F)	(G)
1936–37.....	3.2	34.3	13.5	6.1	12.3	.2	9.3	34.5	3.0	(22.0)	(23.4)
1937–38.....	83.7	.6	2.8	16.4	7.1	.1	100.1	.7	3.3	102.7	107.0
1938–39.....	84.6	.2	9.0	22.1	9.1	.4	106.7	.6	2.9	109.0	109.1
1939–40.....	23.6	.2	9.9	21.2	9.4	.3	44.8	.5	3.5	47.8	47.3
1940–41.....	10.8	3.4	7.3	22.8	7.0	.3	33.6	3.7	*3.6*[b]	33.5	33.2
1941–42[c]....	*12.0*	*2.0*	....[d]	*14.0*	....[d]	..	*26.0*	*2.0*	*3.0*	*27.0*	*27.0*[d]
1942–43[c]....	*9.0*	*3.0*	....[d]	*19.0*	....[d]	..	*28.0*	*3.0*	*3.0*	*28.0*	*28.0*[d]
Lend-lease[e]											
1941–42.....	1.0	....	....	2.7	....	..	.....	....	...	.....	.....
1942–43.....	.6	....	....	10.8	....	..	.....	....	...	.....	.....

* Data from *Monthly Summary of Foreign Commerce* and U.S. Dept. Comm. *Statement No. 3009.* Figures in parentheses are net imports, in italics our present approximations. One barrel of flour is considered equivalent to 4.7 bushles of grain. Wheat grain imports are (A) for domestic consumption and (B) for milling in bond. Flour exports are (C) wholly of U.S. grain and (D) "other." Shipments (E) are to Alaska, Hawaii,and Puerto Rico, and from January 1935 through December 1939 to the Virgin Islands. Net exports (F) disregard series (B) and (D); net exports (G) take into account series (B) and (D).

[a] Disregarding series (B) and (D).

[b] U.S. Department of Agriculture estimate.

[c] Not including army or navy shipments for their own or civilian use, or for stock piles.

[d] In the absence of data, we assume that series (B) and (D) are roughly equal.

[e] Lend-lease deliveries for United Nations shipments; 1941–42 includes May 1941.

TABLE XVII.—FLOUR STATISTICS FOR CANADA, AUSTRALIA, AND ARGENTINA ANNUALLY FROM 1928*

(Million bushels, barrels, units of 100 pounds; bushels per capita)

Year	Canada (year beginning August)				Australia (year beginning July)				Argentina (year beginning January)				
	Wheat ground (*bushels*)	Flour produced (*barrels*)	Flour net exports (*barrels*)	Retained per capita[a] (*bushels*)	Wheat ground (*bushels*)	Flour produced (*100 lb. units*)	Flour exports (*100 lb. units*)	Retained per capita[a] (*bushels*)	Wheat ground (*bushels*)	Flour produced (*100 lb. units*)	Flour exports (*100 lb. units*)	Retained[a]	
												Total (*bushels*)	Per capita (*bushels*)
1928.....	94.8	20.9	11.73	4.22	55.8	23.4	11.30	4.58	69.3	29.3	3.73	60.5	5.61
1929.....	70.6	15.8	6.70	3.99	54.0	22.7	9.35	4.99	67.7	28.6	3.02	60.5	5.48
1930.....	71.1	15.9	6.68	3.99	56.6	23.6	10.51	4.83	65.3	27.4	2.30	59.8	5.29
1931.....	65.6	14.7	5.36	3.97	61.3	25.4	12.25	4.82	69.7	29.3	1.90	65.2	5.64
1932.....	66.3	14.9	5.34	3.98	63.1	26.4	12.66	4.99	67.4	28.5	1.28	64.4	5.48
1933.....	66.7	15.0	5.37	3.96	60.2	24.8	10.88	5.01	69.8	29.5	2.18	64.6	5.41
1934.....	63.3	14.1	4.55	3.93	65.8	27.2	13.99	4.72	73.3	31.2	2.43	67.5	5.57
1935.....	67.7	14.9	4.92	4.15	62.7	26.1	12.37	4.90	74.4	31.7	1.95	69.8	5.68
1936.....	64.6	14.3	4.47	4.01	59.0	24.6	11.32	4.67	71.4	30.3	1.76	67.3	5.40
1937.....	57.8	12.9	3.52	3.76	59.4	25.0	12.64	4.32	71.8	31.3	2.10	67.0	5.29
1938.....	68.9	15.2	4.53	4.31	67.0	27.4	14.53	4.48	78.4	33.8	1.85	74.1	5.76
1939.....	80.3	17.8	6.69	4.41	67.4	27.7	13.72	4.79	79.1	33.7	2.18	74.0	5.67
1940.....	87.9	19.6	10.26	3.66	69.2	28.3	15.45[b]	4.38	76.8	32.1	1.56	73.1	5.52
1941.....	88.0	19.7	10.21[c]	3.67	56.5	22.5	8.30[b]	4.79	75.3	32.3	.96	73.1	5.44
1942.....	104.8	23.6	12.58[c]	4.19	50.5	21.1	7.20[d]	4.45[d]	77.9	33.4	1.30	74.8	5.50

* Data from official sources.

[a] Wheat ground less grain equivalent of flour net exports (assuming 4.5 bushels per barrel for Canada, 48 bushels per ton for Australia, and annual average extraction ratio for Argentina). Total retention for Canada and Australia in Table XXI.

[b] Approximation based on data shown in *Monthly Summary of the Wheat Situation in Australia,* June 1943, p. 5.

[c] Gross exports.

[d] Our rough approximation.

TABLE XVIII.—UNITED STATES FLOUR PRODUCTION AND DISPOSITION, QUARTERLY FROM JULY 1937*

(Thousand units of 100 lbs.)

Year July-June	Total	July-Sept.	Oct.-Dec.	Jan.-March	April-June	Total	July-Sept.	Oct.-Dec.	Jan.-March	April-June
	A. REPORTED PRODUCTION, ALL REPORTING MILLS					B. ESTIMATED TOTAL UNITED STATES PRODUCTION				
1937-38....	197,909	51,601	51,572	47,604	47,132	210,008	54,662	54,704	50,609	50,033
1938-39....	205,090	53,637	52,700	49,361	49,392	217,486	56,879	55,886	52,346	52,375
1939-40....	204,720	57,124	50,656	48,988	47,952	217,092	60,578	53,718	51,948	50,848
1940-41....	206,449	52,279	52,652	50,264	51,254	218,628	55,441	55,833	53,302	54,353
1941-42....	205,459	52,930	53,296	51,723	47,510	217,878	56,128	56,519	54,849	50,382
1942-43....	224,610	54,558	59,123	61,517	49,412	238,187	57,857	62,696	65,235	52,399

* Reported production (here converted to sacks of 100 pounds) from U.S. Department of Commerce, *Wheat Ground and Wheat Milling Products;* estimated production as for Table XIX. For earlier data from January 1925, see WHEAT STUDIES, May 1936, XII, 335, and September 1937, XIV, 33.

TABLE XIX.—UNITED STATES MILLING AND FLOUR DISPOSITION, ANNUALLY FROM 1934–35*

Year July-June	Wheat ground		Millfeed output (*thousand tons*)	Flour production and disposition (*thousand units of 100 pounds*)							Per capita (*bushels as wheat*)	
	Total (*million bushels*)	Per unit of 100 lbs. (*bushels*)		Output	Domestic exports[a]	General imports less re-exports	Shipments to possessions[b]	Net exports plus shipments	Computed net retention	Estimated consumption	Retention	Consumption[c]
1934-35..	470.8	2.327	4,008	202,325	7,711	0	1,129	8,840	193,485	195,700	3.54	3.59
1935-36..	483.6	2.361	4,268	204,830	6,514	69	1,172	7,617	197,213	197,200	3.64	3.64
1936-37..	492.1	2.351	4,298	209,334	7,679	76	1,207	8,810	200,524	198,500	3.66	3.62
1937-38..	493.9	2.352	4,318	210,008	9,798	67	1,341	11,072	198,936	199,900	3.60	3.62
1938-39..	508.1	2.336	4,368	217,486	13,048	154	1,162	14,056	203,430	200,800	3.64	3.60
1939-40..	505.1	2.327	4,298	217,092	12,777	137	1,399	14,039	203,053	202,400	3.59	3.58
1940-41..	507.9	2.320	4,290	218,928	12,452	122[d]	1,460	13,790	205,138	204,300	3.59	3.57
1941-42[e].	507.5	2.329	4,330	217,878	.....	...	.....	.....	.....	.....	....	....
1942-43[e].	551.7	2.316	4,642	238,187	.....	...	.....	.....	.....	.....	....	....

* Estimates by the Food Research Institute of wheat ground, millfeed output, flour output, and flour consumption, combined with official trade data.

[a] Including flour milled in bond from imported wheat.

[b] Including Virgin Islands, January 1935–December 1939.

[c] Grain equivalent of 154 lbs. at rate shown in col. 2.

[d] Imports for consumption.

[e] See pp. 47–48.

TABLE XX.—INTERNATIONAL TRADE IN WHEAT FLOUR, ANNUALLY FROM 1934–35*

(Thousand barrels of 196 pounds)

Year Aug.-July	Net exports								Net imports		
	All net exporters	Four exporters[a]	United States[b]	Canada	Australia	Argentina	Hungary	Japan[c]	Manchukuo	China	Brazil
1934-35.....	26,364	17,467	4,489	4,552	7,335	1,091	413	3,651	6,708	735	734
1935-36.....	24,064	15,930	3,917	4,918	6,197	898	636	1,974	3,296	419	611
1936-37.....	22,206	15,697	4,488	4,469	5,645	1,095	690	748	1,204	162	482
1937-38.....	23,773	16,836	5,792	3,522	6,620	902	489	3,137	1,375	1,878	437
1938-39.....	27,727	20,684	7,647	4,530	7,462	1,045	524	2,344	2,853	3,027	429
1939-40.....	.....	21,335	6,654	6,686	7,000[d]	995	1,200[d]	2,973	*3,000*	2,622	301
1940-41.....	.....	25,852	7,168	10,262	*7,900*[e]	522	S	*2,200*	*1,300*	5,507[f]	195
1941-42.....	.....	*21,000*	*6,000*[g]	10,206	*4,200*[e]	596	S	SS	SS	A	151[h]
1942-43.....	.....	*23,000*	*6,000*[g]	12,575	*3,700*	751	SS	SS	SS	SS	SS
Average 1934-39.....	24,827	17,323	5,267	4,398	6,652	1,006	550	2,371	3,087	1,244	539

* Data mainly from official sources and International Institute of Agriculture. See also WHEAT STUDIES, December 1939, XVI, 196. Data in italics are our present approximations.

[a] United States, Canada, Australia, Argentina.

[b] Including shipments to possessions; imports for consumption from 1935–36.

[c] Exclusive of net shipments to Chosen and Taiwan, which averaged 729,000 in the calendar years 1934–38.

[d] Including our approximation for July.

[e] July–June; see Table XVII, note *b*.

[f] Gross imports from May 1941.

[g] See Table XVI, note *c*.

[h] Nine months.

TABLE XXI.—WHEAT SUPPLIES AND DISPOSITION IN FOUR CHIEF EXPORTING COUNTRIES, ANNUALLY FROM 1937–38*

(Million bushels)

Year	Supplies			Domestic utilization					Surplus over domestic use[g]	Net exports[h]	Year-end stocks	
	Initial stocks[a]	Crop	Total	Milled (net)[b]	Seed use[c]	Fed on farms[d]	Residual[e]	Total[f]			A[a]	B[i]
	A. UNITED STATES (July–June)											
1937–38.....	83	874	957	468	94	113	+ 22	697	260	106	154	...
1938–39.....	154	920	1,074	475	76	126	+ 37	714	360	109	251	...
1939–40.....	251	741	992	472	73	91	+ 29	665	327	47	280	...
1940–41.....	280	813	1,093	476	74	99	+ 25	674	419	34	385	...
1941–42.....	385	943	1,328	480	62	99	+ 28[j]	669	659	27[k]	632	...
1942–43.....	632	981	1,613	520	62	101	+284[l]	967	646	28[k]	618	...
	B. CANADA (August–July)											
1937–38.....	37	180	217	42	33	21	+ 7	103	114	89	25	...
1938–39.....	25	360	385	49	35	34	+ 6	124	261	158	103	...
1939–40.....	103	521	624	50	36	37	+ 9	132	492	192	300	...
1940–41.....	300	540	840	42	28	48	+11	129	711	231	480	...
1941–42.....	480	315	795	42	27	56	+24[m]	149	646	222	424	...
1942–43.....	424	557[n]	981	48	22	79	+19[m]	168	813	212	601	...
	C. AUSTRALIA (August–July)											
1937–38.....	41	187	228	30	15	..	+ 7	52	176	126	50	13.9
1938–39.....	50	155	205	31	14	..	+14	59	146	96	50	20.8
1939–40.....	50	210	260	33	13	..	− 2	44	216	86	130	....
1940–41.....	130	82	212	31	14	..	+ 4	49	163	93	70	....
1941–42.....	70	167	237	34	10	..	+ 7	51	186	41	145	....
1942–43.....	145	156	301	32	9	..	+19	60	241	36[k]	205	....
	D. ARGENTINA (August–July)											
1937–38.....	45	208	253	71	26	..	+12	109	144	72	72	19
1938–39.....	72	379	451	74	21	..	+ 4	99	352	122	230	120
1939–40.....	230	131	361	74	21	..	+12	107	254	179	75	9
1940–41.....	75	299	374	73	22	..	+ 3	98	276	96	180	120
1941–42.....	180	224	404	74	20	..	+ 7	101	303	83	220	160
1942–43.....	220	235	455	74	20	..	+22	116	339	69	270	...
	E. FOUR CHIEF EXPORTERS											
1937–38.....	206	1,449	1,655	611	168	134	+ 48	961	694	393	301	...
1938–39.....	301	1,814	2,115	629	146	160	+ 61	996	1,119	485	634	...
1939–40.....	634	1,603	2,237	629	143	128	+ 48	948	1,289	504	785	...
1940–41.....	785	1,734	2,519	622	138	147	+ 43	950	1,569	454	1,115	...
1941–42.....	1,115	1,649	2,764	630	119	155	+ 66	970	1,794	373	1,421	...
1942–43.....	1,421	1,929	3,350	674	113	180	+344	1,311	2,039	345	1,694	...

* Based chiefly on latest official data or estimates, including those in preceding tables with some provisional approximations for 1942–43. For similar data from 1925–26, see WHEAT STUDIES, December 1938, XV, 252–53.

[a] United States (July 1) and Canada (July 31), see Table XI, columns 6 and 13. Australia and Argentina (Aug. 1), stocks "B" adjusted for net exports and net millings in Aug.–Nov. and Aug.–Dec. respectively.

[b] Wheat equivalent of flour production less net exports of flour; Australia, July–June years; Argentina, our estimates based on calendar-year flour milled less flour exports.

[c] Argentina, based on acreage sown and average seed requirements per acre.

[d] United States, official estimates of wheat fed on farms where grown. Canada, the sum of official estimates of unmerchantable wheat and of merchantable wheat fed on farms where grown. Australia and Argentina, no data.

[e] Difference between derived total domestic utilization and the sum of specified utilization items.

[f] Total supplies less sum of net exports and year-end stocks.

[g] Sum of the two following items.

[h] United States (including shipments to possessions, Table XVI) and Canada adjusted as in Table XIV. Four exporters total shown here includes U.S. data for July–June, rather than August–July as in Table XIV.

[i] Australia, official estimates as of Nov. 30. Argentina, our approximations to Dec. 31 total stocks of old-crop wheat.

[j] Includes CCC wheat used for feed and alcohol from sales totaling 40 million bushels (36 million for feed).

[k] Our rough approximation.

[l] Includes 215 million bushels of CCC wheat used for feed and about 60 million for alcohol.

[m] Includes freight-assisted sales for feed.

[n] Below standing estimate by 36 million bushels as suggested in September 1943 official releases.

TABLE XXII.—APPROXIMATE WORLD WHEAT SUPPLIES AND DISAPPEARANCE, ANNUALLY FROM 1934–35*

(Million bushels)

Year August-July	World ex-Russia					British Isles					Continent ex-Russia				
	Initial stocks[a]	Crops	USSR exports	Total supplies	Disappearance	Initial stocks	Crops	Net imports	Total supplies	Utilization	Initial stocks	Crops	Net imports	Total supplies	Utilization
1934–35	1,187	3,488	2	4,677	3,739	44	74	217	335	296	406	1,472	111	1,989	1,644
1935–36	938	3,558	29	4,525	3,775	39	72	220	331	289	345	1,503	94	1,942	1,654
1936–37	750	3,512	5	4,267	3,755	42	63	212	317	279	288	1,417	142	1,847	1,625
1937–38	512	3,800	43	4,355	3,761	38	63	208	309	274	222	1,473	142	1,837	1,642
1938–39	594	4,564	34	5,192	4,042	35	81	247	363	288	195	1,778	96	2,069	1,694
1939–40	1,150	4,197	..[b]	5,347	3,947	75	72	240	387	287	375	1,621	118	2,114	1,694
1940–41	1,400	3,916	8	5,324	3,774	100	75	245	420	295	420	1,225	60	1,705	1,455
1941–42	1,550	3,914	..[b]	5,464	3,664	125	90	205	420	305	250	1,355	40	1,645	1,430
1942–43	1,800	4,102	..[b]	5,902	3,877	115	115	170	400	280	215	1,260	40	1,515	1,350
Average 1934–39	796	3,784	23	4,603	3,816	40	70	221	331	285	291	1,529	117	1,937	1,652

* Summarized from Tables II, XIII, and XIV.

[a] Excluding India and Japan, and otherwise less comprehensive than crop data. [b] Net imports.

TABLE XXIII.—PRICES OF WHEAT IN FOUR CHIEF EXPORTING COUNTRIES, ANNUALLY FROM 1937–38 AND MONTHLY, 1942–43*

(U.S. cents per bushel)

Year and month	United States[a] (July-June)									Winnipeg[b] (Aug.-July)			Buenos Aires[c] (Aug.-July)	Australia[d] (Aug.-July)
	Farm price		All classes	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.)	Soft White (Port.)[e]	Wtd. average	No. 1 Manitoba	No. 3 Manitoba		
	Wtd. av.	Unwtd. av.												
1937–38	96	86	98	97	98	97	123	106	88	122	131	113	108	85
1938–39	56	56	70	69	68	72	79	73	67	57	62	54	59	47
1939–40	69	75	91	91	89	94	94	91	79	69	70	65	61	54
1940–41	68	71	85	87	82	89	88	91	76	66	67	63	56	68
1941–42	94	97	112	118	115	120	116	118	96	67	70	65	55	70
1942–43	106	112	128	135	128	141	130	132	118	81	86	81	55	71
July	...	95	110	116	108	122	114	116	99	72	73	68	55	70
Aug.	...	95	111	118	111	126	113	114	106	79	81	76	55	70
Sept.	...	103	118	127	120	132	119	124	115	79	81	77	55	70
Oct.	...	104	115	126	120	138	119	118	113	79	82	78	55	70
Nov.	...	104	117	126	123	132	120	121	114	78	82	78	55	70
Dec.	...	110	128	136	130	148	132	133	118	75	82	76	..[g]	70
Jan.	...	118	136	144	137	154	139	140	124	75	82	76	..[g]	70
Feb.	...	120	138	146	137	155	141	144	125	76	82	77	..[g]	70
Mar.	...	123	141	148	140	...[f]	144	146	126	83	88	84	55	72
Apr.	...	122	139	146	138	152	140	144	125	84	90	85	55	72
May	...	123	140	147	138	153	142	145	125	84	90	85	55	72
June	...	124	139	146	137	...[f]	141	144	130	86	92	86	55	72
July	...	126	142	148	140	166	141	146	135	93	99	91	55	72

* Basic data partly from official sources and partly from trade journals. Annual averages are arithmetic averages of monthly data. Conversions of foreign prices at par when exchanges were near par, otherwise at current exchange rates.

[a] Data of the U.S. Department of Agriculture on farm prices (as of the fifteenth of the month), all classes and grades in six markets, No. 2 Hard Winter at Kansas City, No. 2 Red Winter at St. Louis, No. 1 Dark Northern Spring and No. 2 Hard Amber Durum at Minneapolis, and Soft White at Portland (Western White Seattle prior to June 1940). See especially *Agricultural Statistics, 1942*, pp. 25–26, and *Crops and Markets* and *Foreign Crops and Markets*. Prices of basic cash wheat are unweighted average prices of the cheapest wheat deliverable on Chicago contracts without premium or discount.

[b] Based on data from *Canadian Grain Statistics, Grain Trade of Canada*, and *Monthly Review of the Wheat Situation* (Dominion Bureau of Statistics). Converted at official exchange rate from Sept. 11, 1939.

[c] Grain Regulating Board buying price from December 1940, basis Buenos Aires, from *London Grain, Seed and Oil Reporter*. Earlier data for 78-kilo wheat (80-kilo through November 1937) from *Revista Oficial*. Converted at official exchange rate from October 1939.

[d] Since 1940–41 Australian Wheat Board offering price to United Kingdom, bulk basis as quoted in *London Grain, Seed and Oil Reporter;* converted at official U.K. exchange rate. Old crops July 1942 through February 1943; "new/old" thereafter. Prior to 1940–41 averages for Sydney, Melbourne, and Adelaide from *Monthly Review of the Wheat Situation in Australia*, nominal from November 1939. These nominal prices run 1–5 cents lower than prices in series used currently.

[e] Western White, Seattle prior to June 1940.

[f] No sales.

[g] Buying suspended.

TABLE XXIV.—CONSERVATION AND PARITY PAYMENTS ON UNITED STATES CROPS FROM 1938–39*

(Rates in cents per indicated unit)

Crop year	Wheat (per bushel)		Corn (per bushel)		Rice (per 100 pounds)		Cotton (per pound)		Tobacco (per pound)		Potatoes (per bushel)	Peanuts (per ton)
	Conservation	Parity	Conservation	Parity	Conservation	Parity	Conservation	Parity	Conservation	Parity	Conservation	Conservation
1938–39	12.0	....[a]	10.0	....[a]	12.50	....[a]	2.40	....[a]	.50–1.80	....[a]	3.6–5.4	400
1939–40	17.0	11.0	9.0	6.0	9.00	12.0	1.80	1.60	.80–1.50	....[b]	3.0	300
1940–41	8.1	10.0	9.0	5.0	5.85	9.3	1.44	1.55	.54–1.08	....[b]	2.7	225
1941–42	8.0	10.0	9.0	5.0	5.50	20.0	1.37	1.38	.50–1.50	.2–.7[c]	2.3	225
1942–43	9.9	13.5	5.5	11.1	2.40	....[b]	1.20	....[b]	.40–1.30	.7[c]	1.8	125
1943–44	8.5	13.7[d]	3.0	7.2[d]	2.00	....[b]	1.00	....[b]	.40–1.20	.2–1.0[c]	...	110

* Official data. Payments are per indicated unit on the officially ascribed "normal yield" per acre of the acreage allotment for each crop, here entered under year of compliance and typical payment.

[a] Congress made no appropriation.

[b] Growers' returns above levels permitting parity payments.

[c] Certain types only. To others note *b* applies.

[d] Based on 1942 area sown, since overplanting of allotments was encouraged in the spring of 1943.

TABLE XXV.—PRICES OF DOMESTIC WHEAT IN EUROPE, IN AUGUST AND DECEMBER 1937–42*

(Indicated currency per quintal; except as noted for the U.K.)

Year	United Kingdom (shillings per cwt.)		Sweden (kronor)	Germany (RM)[a]	France (francs)[a]	Italy (lire)[a]	Netherlands (florins)[a]	Belgium (francs)	Denmark (kroner)	Bulgaria (leva)[a]	Rumania (lei)	Hungary (pengö)	Yugoslavia (dinars)
	Standard	Gazette											
August													
1937	10.0	9.4	18.8	19.9	180	125	10.22	141	17.3	320	474	20.5	173
1938	10.0	6.8	17.9	19.7	199	135	10.73	122	13.8	340	400	20.2	158
1939	11.0	4.3	16.7	19.6	198[b]	135	10.90	125	14.8	350	420	19.7[a]	148
1940	14.5	13.1	24.2	19.6	214[b]	155	11.86	170	28.0[a,c]	430	687[a]	25.5[a]	313
1941	14.5	14.7	27.0[a]	20.4	300	175	13.25[c]	220[d]	28.0[a]	620	1,100[a]	30.0[a]	350[e]
1942	16.0	15.8	27.0[a]	21.4	404	205	13.25[c]	220[d]	28.0[a]	620	2,200[a]	30.0[a]	500[e]
December													
1937	10.0	8.6	19.6	20.6	184	125	9.70	134	18.5	320	522	20.8	178
1938	10.0	4.3	16.8	20.5	208[b]	135	9.70	118	14.1	340	418	20.5	160
1939	11.0	7.1	20.0	20.4	202[b]	135	10.81	144	19.1	350	452	20.8[a]	193
1940	14.5	14.6	27.0[a]	20.4	220[b]	155	11.93	170[d]	28.0[a]	430	857[a]	26.2[a]	313
1941	14.8	14.8	27.0[a]	20.6	300	175	13.47	205[d]	28.0[a]	620	1,170[a]	27.0[a]	350[e]
1942	16.3	16.3	26.0[a]	20.6	375	175	13.62	205[d]	28.0[a]	620	2,200[a]	27.0[a]	400[e]

* Data from official sources, the International Institute of Agriculture, and foreign news sources. An attempt has been made to include applicable premiums for early delivery in August prices. Acreage payments available in some countries are not included, except for Italy which is estimated at 10 lire per quintal in 1942.

[a] Fixed prices to producers; in Germany for the Berlin area.

[b] Less a tax of from 14 to 49 francs per quintal.

[c] September.

[d] Maximum price to producers.

[e] Fixed price to producers for Serbia.

TABLE XXVI.—EUROPEAN NET TRADE IN OTHER GRAINS AND POTATOES, ANNUALLY, 1934–39*

(Million bushels)

Year Aug.–July[a]	Rye (incl. flour)		Barley			Oats			Corn			Potatoes		
	British Isles	Continent	British Isles	Continent	Fr. N. Africa[b]	British Isles	Continent	Fr. N. Africa[b]	British Isles	Continent	Fr. N. Africa[b]	British Isles	Continent	Fr. N. Africa[b]
1934–35	+3.21	— 9.67	+36.02	+46.51	— 9.99	+10.95	+33.79	—1.33	+118.69	+130.62	—2.11	+ 3.96	— 9.02	+2.23
1935–36	+1.63	+ 0.02	+39.87	+36.12	— 8.81	+12.31	+38.77	—1.81	+115.18	+136.62	—2.51	+ 5.64	— 9.87	+0.92
1936–37	+1.41	0.00	+42.66	+12.00	—14.22	+ 7.45	+19.46	—3.62	+143.81	+141.93	—2.00	+10.59	—18.12	—0.24
1937–38	+0.29	+13.42	+42.18	+28.42	— 2.73	+ 4.09	+31.31	—0.90	+138.58	+212.90	+0.29	+ 6.21	—21.52	—1.15
1938–39	+1.19	+19.82	+46.37	+38.87	— 1.40	+ 5.46	+36.85	—1.66	+110.05	+186.61	—0.39	+ 3.46	—11.07	—0.01

* Data from International Institute of Agriculture. Flour converted to equivalent bushels of rye at 65 per cent. Plus (+) indicates net imports, minus (—) indicates net exports.

[a] Calendar years 1934–38 for corn and potatoes.

[b] French Morocco, Algeria, and Tunis.

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